

2027

SEED PRODUCT INFORMATION GUIDE

Baill Seed®

PanAmerican Seed®

NEW VARIETIES FOR 2027

ANNUALS

African Marigold

Lanna Lace F1

Angelonia

Serena® Magenta F1

Serenita® Cherry Red F1

Bacopa

Galactic Mist White F1

Begonia

Dragon Wing® White Bronze Leaf F1

Dragon Wing® White Improved F1

Tuberous Begonia

Marquee™ Picotee Lace Pink F1

Marquee™ Ruffled Coral Salmon F1

Marquee™ Ruffled Pink F1

Marquee™ Ruffled Red F1

Marquee™ Ruffled White F1

Marquee™ Ruffled Yellow F1

Dianthus

Dart™ Select Mixture F1

Heuchera

Heucherette™ Pink

Heucherette™ Red

Impatiens

Beacon® Orange Improved F1

Beacon® Pink F1

Beacon® Violet Improved F1

Beacon® Chicago Mixture Improved F1

Beacon® Formula Mixture Improved F1

Beacon® Lindau Mixture Improved F1

Beacon® Portland Mixture Improved F1

Beacon® Sanibel Mixture Improved F1

Interspecific Impatiens

Solarscape® XL Red Glow F1

Osteospermum

Akila® Sunshine Yellow F1

Petchoa

Caliburst™ Nectarine F1

Spreading Pansy

Cool Wave® Violet Blue F1

Top Wave™ Elevation Mixture F1

Spreading Petunia

E3 Easy Wave® Midnight Marble F1

Sunflower

Always Sunny Gold F1

Vinca

Tattoo™ Boysenberry

Zinnia

Elegant™ Full Mixture

Elegant™ Soft Mixture

PERENNIALS

Heuchera*

Heucherette™ Pink

Heucherette™ Red

(Note: Can be grown as a tender perennial in zones 6a to 8a.)

Sedum

Spectacular

POTTED PLANTS

Gerbera

ColorBloom™ Orange with Light Eye F1

VEGETABLES & HERBS

Basil

Monteverde™ Genovese

Pepper

Spotlight F1

CUT FLOWERS

Campanula

Campana Pink Improved F1

Celosia

Neo™ Bright Orange

Dianthus

Amazon™ Purple Magic F1

Sweet™ Cherryblossom Magic F1

Sweet™ Dusty Flamingo F1

Sweet™ Salmon Magic F1

Matthiola

Katz Antique Rose

Snapdragon

Early Potomac™ Rose Improved F1

Monaco Dark Pink F1

Monaco Ivory White F1

Monaco Plumblossom F1

Monaco Purple F1

Monaco White Improved F1

Monaco Yellow Improved F1

Potomac™ Bright Orange F1

SUBSTRATE MOISTURE LEVEL TABLE

	Level 1 Dry	Level 2 Medium Dry	Level 3 Medium	Level 4 Medium Wet	Level 5 Saturated
Substrate colour	Very light brown or grey	Light brown	Brown to dark brown	Dark brown	Brown-black, glistening with water
Substrate feel when squeezed in hand	No moisture is detected in substrate	Substrate squeaks when squeezed	A small drop of water can be squeezed from the substrate	Water can be easily squeezed from the substrate	Water runs freely out of the substrate
Substrate structure	Substrate is dusty and freely scatters when blown	Substrate will barely stick together under pressure	Substrate will clump together but cracks apart under its own weight	Substrate easily clumps together and stays as one clump	Substrate has a semi-liquid consistency

CONTAINER CONVERSION FROM CM TO IN.

European Container	Equivalent U.S. Container
9 cm 5° - H	3.5 in. Standard
10.5 cm 5° - L	4 in. Azalea
10.5 cm 5° - H	4 in. Standard
11 cm 8° - H	4.25 in. Standard
12 cm 8° - H	4.5 in. Geranium
13 cm 8° - L	5 in. Azalea
13 cm 5° - H	5 in. Standard
14 cm 5° - H	6 in. Trade
15 cm 5° - L	6 in. Azalea
15 cm 5° - H	6 in. Standard
17 cm - L	6.5 in. Azalea
15 to 18 cm - H	Trade Gallon
19 cm - L	8 in. Standard
23 cm/5 liter	8 in. /1.5 Gallon
25 cm/7-7.5 liter	10 in. /2 Gallon
30 cm/10 liter	12 in. /2.5 Gallon
25 cm Hanging Basket	10 in. Hanging Basket
30 cm Hanging Basket	12 in. Hanging Basket

STAGES OF PLUG CULTURE

- Stage 1** Germination - from seed imbibition to radicle emergence
Stage 2 Cotyledon expansion
Stage 3 True leaf (leaves) expansion
Stage 4 Pullable plugs or until shipping

NOTE: Growers should use the information presented here as guidelines only. PanAmerican Seed recommends that growers conduct a trial of products under their own conditions. Crop times will vary depending on the climate, location, time of year, and greenhouse environmental conditions. It is the responsibility of the grower to read and follow all the current label directions relating to the products. Nothing herein shall be deemed a warranty or guaranty by PanAmerican Seed of any products listed herein. PanAmerican Seed's terms and conditions of sale shall apply to all products listed herein. Visit panamseed.com for current Terms & Conditions of Sale.

USDA PLANT HARDINESS ZONE AND AVERAGE ANNUAL MINIMUM TEMPERATURE RANGE

Zone	Fahrenheit	Celsius
1	Below -50°F	Below -45.6°C
2a	-50 to -45°F	-42.8 to -45.5°C
2b	-45 to -40°F	-40.0 to -42.7°C
3a	-40 to -35°F	-37.3 to -39.9°C
3b	-35 to -30°F	-34.5 to -37.2°C
4a	-30 to -25°F	-31.7 to -34.4°C
4b	-25 to -20°F	-28.9 to -31.6°C
5a	-20 to -15°F	-26.2 to -28.8°C
5b	-15 to -10°F	-23.4 to -26.1°C
6a	-10 to -5°F	-20.6 to -23.3°C
6b	-5 to 0°F	-17.8 to -20.5°C
7a	0 to 5°F	-15.0 to -17.7°C
7b	5 to 10°F	-12.3 to -14.9°C
8a	10 to 15°F	-9.5 to -12.2°C
8b	15 to 20°F	-6.7 to -9.4°C
9a	20 to 25°F	-3.9 to -6.6°C
9b	25 to 30°F	-1.2 to -3.8°C
10a	30 to 35°F	1.6 to -1.1°C
10b	35 to 40°F	4.4 to 1.7°C
11	above 40°F	above 4.5°C

FERTILISER RATE TABLE

Fertiliser Rate	PPM Nitrogen	Solution EC (mS/cm)
One	Less than 100 ppm	Less than 0.7 EC
Two	100 to 175 ppm	0.7 to 1.2 EC
Three	175 to 225 ppm	1.2 to 1.5 EC
Four	225 to 300 ppm	1.5 to 2.0 EC
Five	More than 300 ppm	More than 2.0 EC

KEY TO SYMBOLS

AMP	Amplified Seed
COT	Coated seed
DTL	De-tailed seed
MPL	Multi-seed pellet
PEL	Pelleted seed
PMPL	Precision™ Multi-Pellet
PRM	Primed seed
RAW	Raw seed
TRT	Treated seed
TRN	Treated seed Non Chemical

Additional culture info online at panamseed.com/culture



wave®



ANNUALS	PROPAGATION GUIDE P. 8 / FINISHING GUIDE P. 44
PERENNIALS	PROPAGATION GUIDE P. 78 / FINISHING GUIDE P. 90 / FORCING GUIDE P. 108
POTTED PLANTS	PROPAGATION GUIDE P. 114 / FINISHING GUIDE P. 120
CUT FLOWERS	PROPAGATION GUIDE P. 126 / FINISHING GUIDE P. 132
VEGETABLES & HERBS	PROPAGATION GUIDE P. 140 / FINISHING GUIDE P. 154
KITCHEN MINIS	PROPAGATION GUIDE P. 164 / FINISHING GUIDE P. 168

These tables will help you decide when you need to light the different Wave® Petunia family varieties and choose the right variety for you.

For example, if you want to produce Wave petunia during week 6 to week 20 in Kalamazoo, MI (N42.5°), you need to light group 4 varieties for 2 weeks, group 5 varieties for 6 weeks, and group 6 varieties for 8 weeks, but you don't need to use Photoperiodic light for group 1 to 3 varieties.

DAYLENGTH REQUIREMENTS FOR FLOWERING WAVE PETUNIA VARIETIES

GROUP	MIN. DAYLENGTH REQUIREMENT*	VARIETY
0	9 hours (no supplemental light requirement)	E3 Easy Wave® White, Midnight Marble; Easy Wave® Rose Fusion; Shock Wave® Deep Purple
1	9.5 hours	E3 Easy Wave Coral, Pink, Red, Rose Morn, Sky Blue; Easy Wave Blue, Lavender Sky Blue, Navy Velour, Pink Pearl, Rose
2	10 hours	E3 Easy Wave Blue, Pink Cosmo, Yellow; Easy Wave Berry Velour, Pink Passion, Burgundy Star, Coral Reef, Neon Rose, Rosy Dawn, Silver, Violet, White; Shock Wave Coral Crush, Denim, Pink Shades, Red, Rose Vein, Violet
3	10.5 hours	Easy Wave Burgundy Velour; Shock Wave Pink Vein, Purple Tie Dye, Rose, White
4	11 hours	Easy Wave Pink, Plum Vein, Red, Red Velour
5	12 hours	Wave® Lavender, Misty Lilac, Pink, Purple Classic, Purple** and all Tidal Wave® colours
6	13 hours	Wave Carmine Velour

*Speed of flowering increases at longer daylengths.

**Wave Purple requires 11.5 hours daylength or 1 week less of Photoperiodic lighting compared to Purple Classic.

PRODUCTION WEEKS WHEN LIGHTING IS REQUIRED FOR DIFFERENT WAVE PETUNIAS BASED ON LATITUDE

(N: Natural Daylength, L: Photoperiodic Lighting – daylength extension to 14 hours or night interruption from 10 p.m. to 2 a.m. by using HID or incandescent lights)

Latitude N25° • For cities such as: Miami, FL

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52		
Group 1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N		
Group 2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Group 4	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 5	L	L	L	L	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 6	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	

Latitude N30° • For cities such as: Jacksonville, FL; New Orleans, LA; San Antonio and Houston, TX

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	
Group 1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Group 3	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Group 4	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Group 5	L	L	L	L	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Group 6	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	

Latitude N35° • For cities such as: Atlanta, GA; Charlotte, NC; Little Rock, AR; Los Angeles, CA; Oklahoma City, OK

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Group 1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 2	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	L	L	L	L
Group 3	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Group 4	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Group 5	L	L	L	L	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Group 6	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Latitude N40° • For cities such as: Baltimore, MD; Cincinnati, OH; Columbus, OH; Denver, CO; Indianapolis, IN; Philadelphia, PA; Salt Lake City, UT

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
Group 1	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Latitude N42.5° • For cities such as: Boston, MA; Buffalo, NY; Chicago, IL; Cleveland, OH; Kalamazoo, MI; Grand Rapids, MI; Toledo, OH

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Group 1	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 2	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 3	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 4	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 5	L	L	L	L	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 6	L	L	L	L	L	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	

Latitude N45° • For cities such as: Minneapolis, MN; Montreal, QC; Ottawa, ON; Portland, OR; Traverse City, MI; Toronto, ON

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Group 1	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 2	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	L	L	L	L	L	L	L	
Group 3	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 4	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 5	L	L	L	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 6	L	L	L	L	L	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	

Latitude N50° • For cities such as: Seattle, WA; Vancouver, BC; Winnipeg, MB

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Group 1	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 2	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 3	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 4	L	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 5	L	L	L	L	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 6	L	L	L	L	L	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	



ANNUALS



WAVE	PHOTOPERIODIC LIGHTING CHART P. 4
PERENNIALS	PROPAGATION GUIDE P. 78 / FINISHING GUIDE P. 90 / FORCING GUIDE P. 108
POTTED PLANTS	PROPAGATION GUIDE P. 114 / FINISHING GUIDE P. 120
CUT FLOWERS	PROPAGATION GUIDE P. 126 / FINISHING GUIDE P. 132
VEGETABLES & HERBS	PROPAGATION GUIDE P. 140 / FINISHING GUIDE P. 154
KITCHEN MINIS	PROPAGATION GUIDE P. 164 / FINISHING GUIDE P. 168

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
ALTERNANTHERA <i>Alternanthera brasiliana</i> Purple Prince	RAW	288	4	1	Light cover	3-4	5.5-6.3 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Light	
ALYSSUM <i>Lobularia maritima</i> Clear Crystal® Series	COT, MPL	288	4	5-6 1	Yes	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C)	
ALYSSUM <i>Lobularia maritima</i> Easter Bonnet Series	COT, RAW	288	4	5-6	Light cover	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
ANGELONIA <i>Angelonia angustifolia</i> Serena® F1 Series	PEL	288 128	5-6 6-7	1 1	No	4-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 71-76°F (22-24°C) (l) Light	
ANGELONIA <i>Angelonia angustifolia</i> Serenita® F1 Series	PEL	288 128	5-6 6-7	1 1	No	4-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 71-76°F (22-24°C) (l) Light	
ASPARAGUS <i>Asparagus densiflorus</i> <i>'Sprengeri'</i> FuzzyFern™ Frizz	RAW	128 72	7-9 7-9	3 5-7	Yes	14-30	5.8-6.2 pH 0.5-0.75 mmhos/cm	(m) Level 4-5 (t) 72-82°F (22-28°C) (l) Dark	
BACOPA Galactic Mist F1 Series	PEL	288 128	4-5 5-6	3 3	No	3-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Light	
BACOPA <i>Sutera cordata</i> Blutopia® F1	MPL	288 128	3-4 4	1 1	No	4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Light	
BACOPA <i>Sutera cordata</i> Pinktopia F1	MPL	288 128	3-4 4	1 1	No	4	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Light	
BACOPA <i>Sutera cordata</i> Snowtopia® F1	MPL	288 128	3-4 4	1 1	No	4	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Light	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-71°F (18-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	A paclobutrazol sprench at 1 ppm, 1 week before plug finish, can be useful to control growth when this item is used in combination planters.
	(m) Level 3 (t) 65-75°F (18-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 65-75°F (18-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-70°F (16-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Sow 1 multi-seed pellet or multiple-sow film-coated seed with 5 to 6 seeds per cell for best performance. Note that the multi-seed pellet form requires a thick layer of vermiculite and sufficient water to dissolve the pellet at sowing; this is especially true in low humidity environments. PGRs are not generally required for plug propagation. It is recommended to incorporate a Downy Mildew preventative fungicide program for alyssum plug propagation.
	(m) Level 3 (t) 65-75°F (18-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 65-75°F (18-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-70°F (16-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Multi-sowing is recommended with 5 to 6 seeds per plug cell. PGRs are not generally required for plug propagation. It is recommended to incorporate a Downy Mildew preventative fungicide program for alyssum plug propagation.
	(m) Level 3 (t) 68-73°F (20-23°C) (l) 8 mol·m ⁻² ·d ⁻¹ , 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-73°F (20-23°C) (l) 8-12 mol·m ⁻² ·d ⁻¹ , 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 65-67°F (18-19°C) (l) 8-15 mol·m ⁻² ·d ⁻¹ , 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	Light is required for germination. Grow on the dry side, but do not allow plants to wilt.
	(m) Level 3 (t) 68-73°F (20-23°C) (l) 8 mol·m ⁻² ·d ⁻¹ , 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-73°F (20-23°C) (l) 8-12 mol·m ⁻² ·d ⁻¹ , 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 65-67°F (18-19°C) (l) 8-15 mol·m ⁻² ·d ⁻¹ , 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	Light is required for germination. Grow on the dry side, but do not allow plants to wilt.
	(t) 72-75°F (22-24°C) (l) 4-6 mol·m ⁻² ·d ⁻¹ , 500-1,000 f.c. (5,400-10,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(t) 68-72°F (20-22°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ , 1,500-2,500 f.c. (16,100-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(t) 65-68°F (18-20°C) (l) 8-10 mol·m ⁻² ·d ⁻¹ , 3,000-4,000 f.c. (32,300-43,100 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Requires dark for germination. Dibbling and burying seed into media is recommended. Seeds take a long time to germinate, so please be patient. High temperatures of 78-80°F (26-27°C) and high humidity (60-80% RH) will help with quicker and more uniform germination. Seedlings can be grown on the dry side after Stage 2 as tuberous roots develop. There is no major response to plant growth regulators.
	(m) Level 3-4 (t) 65-75°F (18-24°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-75°F (18-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 60-70°F (16-21°C) (f) 150 to 175 ppm N (1.0 to 1.2 EC) (p) daminozide 500-1,000 ppm Spray	3 pelleted seeds per cell is the recommendation. No pinch recommended. Growing cool benefits the plant structure. Gradual transition from stage 1 to 3 by providing high RH of >60% for approx. 2 weeks after radicle emergence ensures maximum useables.
	(m) Level 3-4 (t) 65-75°F (18-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-75°F (18-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 60-70°F (16-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 640-950 ppm Spray	Use of PGRs or growing outdoors will give a much more controlled plant. Be sure to water multi-seed pellets thoroughly and give light for best germination.
	(m) Level 3-4 (t) 65-75°F (18-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-75°F (18-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 60-70°F (16-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 640-950 ppm Spray	Use of PGRs or growing outdoors will give a much more controlled plant. Be sure to water multi-seed pellets thoroughly and give light for best germination.
	(m) Level 3-4 (t) 65-75°F (18-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-75°F (18-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 60-70°F (16-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 640-950 ppm Spray	Use of PGRs or growing outdoors will give a much more controlled plant. Be sure to water multi-seed pellets thoroughly and give light for best germination.

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
BACOPA <i>Sutera cordata</i> Utopia	PMPL	128 288	4-5	1	No	4	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-73°F (20-23°C) (l) Light	
BEGONIA <i>Begonia interspecific</i> BabyWing® F1 Series	PEL	288	7-8	1	No	7-10	5.8-6.2 pH 0.5 mmhos/cm	(m) Level 5 (t) 72-77°F (22-25°C) (l) Light	
BEGONIA <i>Begonia interspecific</i> Dragon Wing® F1 Series	PEL	288	7-8	1	No	7-10	5.4-6.0 pH 0.5 mmhos/cm	(m) Level 5 (t) 72-77°F (22-25°C) (l) Light	
BEGONIA <i>Begonia x hybrida</i> Gryphon	MPL	288	8-9	1	No	10-12	5.8-6.2 pH 0.5 mmhos/cm	(m) Level 5 (t) 72-78°F (22-26°C) (l) Light	
BEGONIA <i>Begonia interspecific</i> Megawatt™ F1 Series	PEL	288	7-8	1	No	7-21	5.8-6.2 pH 0.5 mmhos/cm	(m) Level 5 (t) 72-77°F (22-25°C) (l) Light	
BEGONIA (SPREADING) <i>Begonia interspecific</i> Hula™ F1 Series	PEL	288	7-8	1	No	7-10	5.8-6.2 pH 0.5 mmhos/cm	(m) Level 5 (t) 72-77°F (22-25°C) (l) Light	
BEGONIA (TUBEROUS) <i>Begonia x tuberosa</i> Marquee™ Picotee F1 Series	PEL	288	7-8	1	No	7-14	5.5-6.0 pH 0.5 mmhos/cm	(m) Level 5 (t) 72-76°F (22-24°C) (l) Light	
BEGONIA (TUBEROUS) <i>Begonia x tuberosa</i> Marquee™ Ruffled F1 Series	PEL	288	7-8	1	No	7-14	5.5-6.0 pH 0.5 mmhos/cm	(m) Level 5 (t) 72-76°F (22-24°C) (l) Light	
BEGONIA (TUBEROUS) <i>Begonia x tuberosa</i> Sun Dancer™ F1 Series	PEL	288	7-8	1	No	7-14	5.5-6.0 pH 0.5 mmhos/cm	(m) Level 5 (t) 72-76°F (22-24°C) (l) Light	
CELOSIA <i>Celosia cristata</i> Dracula	PEL	288	3-4	1	Light cover	2-4	5.8-6.2 pH 0.7-1.2 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Light	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 59-65°F (15-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 4-5 (t) 72-75°F (22-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 65-67°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Keep moisture high until the first true leaf develops.
	(m) Level 4-5 (t) 72-75°F (22-24°C) (l) 400-2,000 f.c. (4,300-21,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 65-67°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Keep moisture high until the first true leaf develops.
	(m) Level 4-5 (t) 71-76°F (22-24°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 65-67°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	A saturated media and high relative humidity are critical to successful germination.
	(m) Level 4-5 (t) 72-75°F (22-24°C) (l) 6 mol·m ⁻² ·d ⁻¹ , 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ , 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 65-67°F (18-19°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ , 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Keep soil moist until the first true leaf develops.
	(m) Level 4-5 (t) 72-75°F (22-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 65-67°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Keep moisture high until the first true leaf develops.
	(m) Level 4-5 (t) 68-72°F (20-22°C) (l) 350-600 f.c. (3,800-6,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 350-600 f.c. (3,800-6,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 62-68°F (17-20°C) (l) 500-1,000 f.c. (5,400-10,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Keep moisture high until the first true leaf develops. Once cotyledons are visible, maintain moist but not saturated media to promote root development. Avoid using ammonium nitrate during plug development, as it may inhibit root growth. A minimum 14-hour photoperiod lighting is required to avoid tuber formation and improve quality. Avoid strong sunlight (>2,000 foot-candles). Strong sunlight will cause high leaf temperature and result in burned leaf edges.
	(m) Level 4-5 (t) 68-72°F (20-22°C) (l) 350-600 f.c. (3,800-6,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 350-600 f.c. (3,800-6,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 62-68°F (17-20°C) (l) 500-1,000 f.c. (5,400-10,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Keep moisture high until the first true leaf develops. Once cotyledons are visible, maintain moist but not saturated media to promote root development. Avoid using ammonium nitrate during plug development, as it may inhibit root growth. A minimum 14-hour photoperiod lighting is required to avoid tuber formation and improve quality. Avoid strong sunlight (>2,000 foot-candles). Strong sunlight will cause high leaf temperature and result in burned leaf edges.
	(m) Level 4-5 (t) 68-72°F (20-22°C) (l) 350-600 f.c. (3,800-6,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 350-600 f.c. (3,800-6,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 62-68°F (17-20°C) (l) 500-1,000 f.c. (5,400-10,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Keep moisture high until the first true leaf develops. Once cotyledons are visible, maintain moist but not saturated media to promote root development. Avoid using ammonium nitrate during plug development, as it may inhibit root growth. A minimum 14-hour photoperiod lighting is required to avoid tuber formation and improve quality. Avoid strong sunlight (>2,000 foot-candles). Strong sunlight will cause high leaf temperature and result in burned leaf edges.
	(m) Level 4 (t) 68-72°F (20-22°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Dracula is a facultative intermediate-day plant. Our best recommendation is to grow the product at daylength between 11 to 14 hours to get the most uniform product. Daylengths shorter than 11 hours or longer than 14 hours will significantly delay flowering. Too short of a daylength (10 hours or shorter) will cause non-uniform and deformed flowers. Too long of a daylength (16 hours or longer) will cause flower fasciate and leaves clustered close to top of the plant.

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
CELOSIA <i>Celosia plumosa</i> First Flame™ Series	PEL	288	3-4	1	Light cover	2-4	5.8-6.2 pH 0.7-1.2 mmhos/cm	(m) Level 4 (t) 77°F (25°C) (l) Light	
CELOSIA <i>Celosia plumosa</i> Ice Cream Series	PEL	288	3-4	1	Light cover	2-4	5.8-6.2 pH 0.7-1.2 mmhos/cm	(m) Level 4 (t) 77°F (25°C) (l) Light	
CELOSIA FOLIAGE, SOL™ <i>Celosia argentea</i> Gekko Green	PEL	288	3-4	1	Light cover	2-4	5.8-6.2 pH 0.7-1.2 mmhos/cm	(m) Level 4 (t) 77°F (25°C) (l) Light	
CELOSIA FOLIAGE, SOL™ <i>Celosia argentea</i> Lizzard Leaf	PEL	288	3-4	1	Light cover	2-4	5.8-6.2 pH 0.7-1.2 mmhos/cm	(m) Level 4 (t) 77°F (25°C) (l) Light	
COLEUS <i>Solenostemon scutellarioides</i> Black Dragon	RAW	288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-75°F (22-24°C) (l) Optional	
COLEUS <i>Solenostemon scutellarioides</i> Wizard® Series	RAW	288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-75°F (22-24°C) (l) Optional	
COLEUS, PREMIUM SHADE <i>Solenostemon scutellarioides</i> Kong Jr.™ Series	PEL	288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-75°F (22-24°C) (l) Optional	
COLEUS, PREMIUM SHADE <i>Solenostemon scutellarioides</i> Kong® Series	PEL	288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-75°F (22-24°C) (l) Optional	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Chocolate Covered Cherry	PEL	288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 66-82°F (19-28°C) (l) Optional	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Chocolate Mint	PEL	288	5-6	1	Light cover	4-5	5.5-5.7 pH 0.75 mmhos/cm	(m) Level 4 (t) 66-82°F (19-28°C) (l) Optional	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Coral Candy	PEL	288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 66-82°F (19-28°C) (l) Optional	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Crimson Gold	PEL	288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 66-82°F (19-28°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 4 (t) 72-77°F (22-25°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Don't allow media to dry out. Celosia makes a taproot and is sensitive to root damage. Transplant on time and do not allow seedlings to get rootbound.
	(m) Level 4 (t) 72-77°F (22-25°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Keep media constantly moist; do not allow to dry out. Celosia makes a taproot and is sensitive to root damage. Transplant on time and do not allow seedlings to get rootbound.
	(m) Level 4 (t) 72-77°F (22-25°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Don't allow media to dry out. Celosia makes a taproot and is sensitive to root damage. Transplant on time and do not allow seedlings to get rootbound. It is recommended growing the plugs under daylength of 14 hours or longer for later flowering.
	(m) Level 4 (t) 72-77°F (22-25°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Don't allow media to dry out. Celosia makes a taproot and is sensitive to root damage. Transplant on time and do not allow seedlings to get rootbound.
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Coleus is very sensitive to high salts, particularly high ammonium. During germination, keep ammonium levels lower than 10 ppm. PGRs are generally not needed.
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Coleus is very sensitive to high salts, particularly high ammonium. During germination, keep ammonium levels lower than 10 ppm. PGRs are generally not needed.
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Coleus is very sensitive to high salts, particularly high ammonium. During germination, keep ammonium levels lower than 10 ppm. PGRs are generally not needed.
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Coleus is very sensitive to high salts, particularly high ammonium. During germination, keep ammonium levels lower than 10 ppm. PGRs are generally not needed.
	(m) Level 3-4 (t) 68-77°F (20-25°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Coleus is very sensitive to high salts, particularly high ammonium. During germination, keep ammonium levels lower than 10 ppm. PGRs are generally not needed.
	(m) Level 3-4 (t) 68-77°F (20-25°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Coleus is very sensitive to high salts, particularly high ammonium. During germination, keep ammonium levels lower than 10 ppm. PGRs are generally not needed.
	(m) Level 3-4 (t) 68-77°F (20-25°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Coleus is very sensitive to high salts, particularly high ammonium. During germination, keep ammonium levels lower than 10 ppm. PGRs are generally not needed.

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Dark Chocolate	PEL	288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 66-82°F (19-28°C) (l) Optional	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Lime Delight	PEL	288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 66-82°F (19-28°C) (l) Optional	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Mighty Mosaic	PEL	288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 66-82°F (19-28°C) (l) Optional	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Pineapple Surprise	PEL	288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 66-82°F (19-28°C) (l) Optional	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Ruby Heart	PEL	288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 66-82°F (19-28°C) (l) Optional	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Sweet Paprika™	PEL	288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 66-82°F (19-28°C) (l) Optional	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Watermelon	PEL	288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 66-82°F (19-28°C) (l) Optional	
COLORGRASS® ANEMANTHELE <i>Anemanthele lessoniana</i> Sirocco	MPL	288	5-6	1	No	5-6	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-76°F (18-24°C) (l) Optional	
COLORGRASS® CAREX <i>Carex comans</i> Amazon Mist	MPL	288	6-7	1	Yes	7-10	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-79°F (20-26°C) (l) Optional	
COLORGRASS® CAREX <i>Carex comans</i> Phoenix Green	MPL	288	5-7	1	No	7-10	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 74-79°F (23-26°C) (l) Optional	
COLORGRASS® CAREX <i>Carex buchananii</i> Red Rooster	MPL	288	6-7	1	No	7-10	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 74-79°F (23-26°C) (l) Optional	
COLORGRASS® FESTUCA <i>Festuca cinerea</i> / <i>Festuca glauca</i> Festina	MPL	288	6-7	1	Yes	3-6	5.5-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-72°F (18-22°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 68-77°F (20-25°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Coleus is very sensitive to high salts, particularly high ammonium. During germination, keep ammonium levels lower than 10 ppm. PGRs are generally not needed.
	(m) Level 3-4 (t) 68-77°F (20-25°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Coleus is very sensitive to high salts, particularly high ammonium. During germination, keep ammonium levels lower than 10 ppm. PGRs are generally not needed.
	(m) Level 3-4 (t) 68-77°F (20-25°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Coleus is very sensitive to high salts, particularly high ammonium. During germination, keep ammonium levels lower than 10 ppm. PGRs are generally not needed.
	(m) Level 3-4 (t) 68-77°F (20-25°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Coleus is very sensitive to high salts, particularly high ammonium. During germination, keep ammonium levels lower than 10 ppm. PGRs are generally not needed.
	(m) Level 3-4 (t) 68-77°F (20-25°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Coleus is very sensitive to high salts, particularly high ammonium. During germination, keep ammonium levels lower than 10 ppm. PGRs are generally not needed.
	(m) Level 3-4 (t) 68-77°F (20-25°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Coleus is very sensitive to high salts, particularly high ammonium. During germination, keep ammonium levels lower than 10 ppm. PGRs are generally not needed.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 65-67°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Colour is better under cool and high light conditions. If temperature permits, it is best to produce Sirocco in outdoor conditions.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 65-67°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 65-67°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 65-67°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 65-67°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
COLORGRASS® ISOLEPIS <i>Isolepis cernua</i> Live Wire	MPL	288	5	1	No	6	5.5-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-68°F (18-20°C) (l) Light	
COLORGRASS® JUNCUS <i>Juncus inflexus</i> Blue Arrows	MPL	288	6-7	1	No	7-8	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 71-76°F (22-24°C) (l) Optional	
COLORGRASS® JUNCUS <i>Juncus tenuis</i> Blue Dart	MPL	288	6-7	1	No	7-8	5.5-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 71-76°F (22-24°C) (l) Light	
COLORGRASS® JUNCUS <i>Juncus pallidus</i> Javelin	MPL	288	5-6	1	No	5-6	5.5-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 71-76°F (22-24°C) (l) Light	
COLORGRASS® JUNCUS <i>Juncus effusus spiralis</i> Twister	MPL	288	7-8	1	No	10-13	5.5-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional	
COLORGRASS® LUZULA <i>Luzula nivea</i> Lucius	MPL	288	4-7	1	Yes	10-12	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-68°F (18-20°C) (l) Light	
COLORGRASS® STIPA <i>Stipa tenuissima</i> Pony Tails	MPL	288	4-5	1	No	4-5	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-75°F (18-24°C) (l) Optional	
COSMOS <i>Cosmos bipinnatus</i> Antiquity	RAW	288	4-5	1	Yes	3-5	5.7-5.9 pH 0.3-0.5 mmhos/cm	(m) Level 4 (t) 61-65°F (16-18°C) (l) Optional	
COSMOS <i>Cosmos sulphureus</i> Mandarin	RAW	288	3-4	1	Yes	3-4	5.7-5.9 pH 0.3-0.5 mmhos/cm	(m) Level 4 (t) 61-65°F (16-18°C) (l) Optional	
COSMOS <i>Cosmos bipinnatus</i> Sonata™ Series	RAW	288	4-5	1	Yes	3-4	5.7-5.9 pH 0.3-0.5 mmhos/cm	(m) Level 4 (t) 61-65°F (16-18°C) (l) Optional	
CROSSANDRA <i>Crossandra infundibuliformis</i> Tropic Series	RAW	288	7	1	Yes	7-10	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 78-82°F (26-28°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 64-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 64-68°F (18-20°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 64-66°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Sow uncovered at 65°F (18°C) for fastest and most uniform germination; prefers moist soil.
	(m) Level 3-4 (t) 64-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 64-68°F (18-20°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 64-66°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 64-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 64-68°F (18-20°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 64-66°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Excellent substitute for Draecena Spike.
	(m) Level 3-4 (t) 64-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 64-68°F (18-20°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 64-66°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	To prevent leaf bending, a paclobutrazol 30 ppm spray can be used.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 64-66°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 64-68°F (18-20°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 64-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 61-64°F (16-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Requires light to germinate. Make sure plants don't get too wet.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 65-67°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 61-65°F (16-18°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 61-65°F (16-18°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 61-65°F (16-18°C) (f) Less than 100 ppm N (Less than 0.7 EC)	Can treat the plugs at early Stage 1 with paclobutrazol at 15 ppm applied as a spray to control early stretch. Daylength extension in the plug stage may be used to prevent premature flowering.
	(m) Level 3-4 (t) 61-65°F (16-18°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 61-65°F (16-18°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 57-60°F (14-16°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 61-65°F (16-18°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 61-65°F (16-18°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 61-65°F (16-18°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Can treat the plugs at early Stage 1 with paclobutrazol at 15 ppm applied as a spray to control early stretch. Daylength extension in the plug stage may be used to prevent premature flowering.
	(m) Level 3-4 (t) 70-72°F (21-22°C) (l) 1,000-1,500 f.c. (10,800-16,100 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 70-72°F (21-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 70-72°F (21-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
CUPHEA <i>Cuphea ramosissima</i> Pink Shimmer	PMPL	288	4		No	4-5	5.4-5.8 pH 1.5 mmhos/cm	(m) Level 4 (t) 72-77°F (22-25°C) (l) Light	
CUPHEA <i>Cuphea procumbens</i> Sweet Talk™ F1 Series	RAW	288	4	1	Yes	3-7	5.8-6.2 pH 0.5-0.75 mmhos/cm	(m) Level 5 (t) 68-77°F (20-25°C) (l) Optional (p) paclobutrazol 1 ppm Sprech	
DAHLIA <i>Dahlia x hybrida</i> Figaro™ Series	RAW	288	4-5	1	Yes	3-7	5.5-5.8 pH 0.5-0.75 mmhos/cm	(m) Level 3 (t) 68-73°F (20-23°C)	
DIANTHUS <i>Dianthus chinensis</i> Coronet™ F1 Series	PEL	288	4-6	1	Yes	2-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-77°F (18-25°C) (l) Optional	
DIANTHUS <i>Dianthus barbatus</i> Dart™ F1 Series	PEL	288	5-6	1	Yes	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-68°F (18-20°C) (l) Optional	
DIANTHUS <i>Dianthus barbatus</i> Dash™ F1 Series	PEL	288	5-6	1	Yes	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-68°F (18-20°C) (l) Optional	
DIANTHUS <i>Dianthus barbatus interspecific</i> Dynasty F1 Series	PEL	288	5-6	1	Yes	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-68°F (18-20°C) (l) Optional	
DIANTHUS <i>Dianthus chinensis x barbatus</i> Floral Lace™ F1 Series	PEL, RAW	288	4-6	1	Yes	3-5	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-68°F (18-20°C) (l) Optional	
DIANTHUS <i>Dianthus chinensis x barbatus</i> Ideal Select™ F1 Series	PEL, RAW	288	4-6	1	Yes	3-5	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-68°F (18-20°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 72-77°F (22-25°C) (l) 10-12 mol·m ⁻² ·d ⁻¹ , 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 72-77°F (22-25°C) (l) 10-15 mol·m ⁻² ·d ⁻¹ , 1,000- 2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray or paclobutrazol 1 ppm Spray	(m) Level 2-4 (t) 72-77°F (22-25°C) (l) 10-20 mol·m ⁻² ·d ⁻¹ , 2,500- 5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	PGR use should only be done at Stage 3. Use a paclobutrazol 1 ppm spray in warmer conditions. Use a daminozide 2,500 ppm spray in cooler conditions.
	(m) Level 4 (t) 68-73°F (20-23°C) (l) 8-10 mol·m ⁻² ·d ⁻¹ , 1,500-2,500 f.c. (16,100-26,900 Lux)	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 8-10 mol·m ⁻² ·d ⁻¹ , 1,500-2,500 f.c. (16,100-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 8-10 mol·m ⁻² ·d ⁻¹ , 1,500-2,500 f.c. (16,100-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Apply paclobutrazol spray at sowing or at radicle emergence (72 hours from sowing) to control hypocotyl stretch. In Stage 2/start of Stage 3, young plants can be grown cooler to tone the plug and shorten the internodes (night temperatures 54°F/12°C), but will add a week to crop time.
	(m) Level 3 (t) 68-73°F (20-23°C) (l) 1,500-3,000 f.c. (16,100-32,300 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,500-3,000 f.c. (16,100-32,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	If a germ chamber is used, move trays to the greenhouse at first sign of germination.
	(m) Level 3-4 (t) 65-73°F (18-23°C) (l) 5-8 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 8-10 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) paclobutrazol 5 ppm Spray	(m) Level 2-3 (t) 55-60°F (13-16°C) (l) 10 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 5-8 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 8-10 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) paclobutrazol 5 ppm Spray	(m) Level 2-3 (t) 55-60°F (13-16°C) (l) 10 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 5-8 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC) (p) paclobutrazol 5 ppm Spray	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 8-10 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) paclobutrazol 5 ppm Spray	(m) Level 2-3 (t) 55-60°F (13-16°C) (l) 10 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 5-8 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC) (p) paclobutrazol 5 ppm Spray	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 8-10 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) paclobutrazol 5 ppm Spray	(m) Level 2-3 (t) 55-60°F (13-16°C) (l) 10 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 5-8 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC) (p) paclobutrazol 5 ppm Spray	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 8-10 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) paclobutrazol 5 ppm Spray	(m) Level 2-3 (t) 55-60°F (13-16°C) (l) 10 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 5-8 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC) (p) paclobutrazol 5 ppm Spray	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 8-10 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) paclobutrazol 5 ppm Spray	(m) Level 2-3 (t) 55-60°F (13-16°C) (l) 10 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
DIANTHUS (INTERSPECIFIC) <i>Dianthus barbatus</i> <i>interspecific</i> Jolt™ F1 Series	PEL	288	5-6	1	Yes	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-68°F (18-20°C) (l) Optional	
DICHONDRA <i>Dichondra repens</i> Emerald Falls	MPL	288	5-6	1	Light cover	4-5	5.5-6.3 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
DICHONDRA <i>Dichondra argentea</i> Silver Falls	RAW	288	5	1-2	Yes	4-5	5.5-6.3 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-77°F (20-25°C) (l) Dark	
DUSTY MILLER MARITIMA <i>Cineraria maritima</i> / <i>Senecio cineraria</i> Silverdust	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-77°F (20-25°C) (l) Optional	
EUPHORBIA <i>Euphorbia graminea</i> Glamour F1	RAW	288 128	4-5 4-5	1 2	Optional	3-6	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-72°F (18-22°C) (l) Optional	
EUPHORBIA <i>Euphorbia graminea</i> Glitz F1	RAW	288 128	4-5 4-5	1 2	Optional	3-6	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-72°F (18-22°C) (l) Optional	
GAZANIA <i>Gazania rigens</i> New Day® F1 Series	COT	288	4-5	1	Yes	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
GOMPHRENA <i>Gomphrena pulchella</i> Fireworks	COT	406	5-6	1	Yes	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-75°F (20-24°C) (l) Light	
HELICHRYSUM <i>Helichrysum microphyllum</i> (<i>Plectostachys serpyllifolia</i>) Silver Mist	MPL	288	6-7	1	No	6-8	5.5-6.3 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 5-8 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC) (p) paclobutrazol 5 ppm Spray	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 8-10 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) paclobutrazol 5 ppm Spray	(m) Level 2-3 (t) 55-60°F (13-16°C) (l) 10 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	A small percentage (3-5%) of flowering off-types can be observed with Jolt dianthus at 4 to 5 weeks from sowing. These plants should be removed/discarded at transplant. Jolt Purple is more sensitive to paclobutrazol than others and the rate should be reduced to half of others.
	(m) Level 3-4 (t) 65-72°F (18-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Spray daminozide at 2,500 ppm one week before transplant to promote branches. Grows best in warm and dry conditions. Use light feed. Rinse foliage after feeding to avoid salt burn.
	(m) Level 3-4 (t) 65-72°F (18-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Spray daminozide at 2,500 ppm one week before transplant to promote branches. Grows best in warm and dry conditions. Use light feed. Rinse foliage after feeding to avoid salt burn.
	(m) Level 4-2 (t) 68-73°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-2 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 3-2 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Preventative fungicide for Alternaria is recommended. Keep foliage as dry as possible to reduce risk of diseases.
	(m) Level 4 (t) 65-72°F (18-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-72°F (18-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	(m) Level 2-3 (t) 65-72°F (18-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	Avoid temperatures below 62°F (16°C), as cooler temperatures cause foliage yellowing. Plug sizes 128 or larger should be sown at 2 seeds per cell. Apply daminozide spray for height control, with the first application at true leaf stage, followed by a second application 7 days later. An alternative to daminozide is an application of paclobutrazol sponch at 2.5 ppm or drench at 0.25-0.5 ppm at radicle emergence. This has been effective in controlling hypocotyl stretch. Glamour is vigorous, so this is a key tip. Follow either of these treatments with a single daminozide spray of 2,500 to 5,000 ppm in Stage 3.
	(m) Level 4 (t) 65-72°F (18-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-72°F (18-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	(m) Level 2-3 (t) 65-72°F (18-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	Avoid temperatures below 62°F (16°C), as cooler temperatures cause foliage yellowing. Plug sizes 128 or larger should be sown at 2 seeds per cell. Can apply daminozide spray for height control, with first application at true leaf stage, followed by a second application 7 days later. An alternative to daminozide would be an application of paclobutrazol sponch at 2.5 ppm or drench at 0.25 to 0.5 ppm at radicle emergence. This has been effective in controlling hypocotyl stretch. This should be followed by a single daminozide spray of 2,500 to 5,000 ppm in Stage 3.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	PGRs are generally not required for producing gazania plugs. Avoid excessive salt accumulation/high EC in the plug media during plug production, as this will cause leaf tip or margin burn.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 64-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	If needed, young plants respond well to daminozide.
	(m) Level 3-4 (t) 65-72°F (18-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Do not overwater. Avoid watering plants late in the day, as constant wet foliage may make plants susceptible to Botrytis. Does not require pinching.

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
HEUCHERA <i>Heuchera sanguinea</i> Heucherette™ Series	PEL	128 72	8-10 9-12	3 4	No	12-14	5.8-6.4 pH 1.0-1.2 mmhos/cm	(m) Level 3-4 (t) 68-71°F (20-22°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
HIBISCUS <i>Hibiscus acetosella</i> Mahogany Splendor	RAW	288	2-3	1	Yes	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 71-76°F (22-24°C) (l) Optional	
IMPATIENS <i>Impatiens walleriana</i> Beacon® F1 Series	COT	288	4-5	1	No	3-6	6.0-6.2 pH 0.5-0.75 mmhos/cm	(m) Level 4-5 (t) 68-77°F (20-25°C) (l) Light	
IMPATIENS (INTERSPECIFIC) <i>Impatiens hybrida</i> Solarscape® F1 Series	RAW	288 128	4-5 5-6	1 1	Light cover	4-5	5.8-6.2 pH 0.05-0.07 mmhos/cm	(m) Level 4-5 (t) 72-77°F (22-25°C) (l) Light	
IMPATIENS (INTERSPECIFIC) <i>Impatiens hybrida</i> Solarscape® XL F1 Series	RAW	288 128	4-5 5-6	1 1	Light cover	4-5	5.8-6.2 pH 0.05-0.07 mmhos/cm	(m) Level 4-5 (t) 72-77°F (22-25°C) (l) Light	
ISOTOMA <i>Isotoma hybrida</i> Gemini F1 Series	PEL	288	4-5	2-4	No	5-8	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Optional	
LOBELIA <i>Lobelia erinus</i> Crystal Palace	MPL, RAW	288	4-5	1	No	4-5	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
LOBELIA <i>Lobelia erinus</i> Regatta Series	MPL, RAW	288	4-5	1	No	4-5	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
LOBELIA <i>Lobelia erinus</i> Riviera Series	MPL, RAW	288	4-5	1	No	4-5	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 4-5 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 63-66°F (17-19°C) (l) 4-8 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 61-65°F (16-18°C) (l) 6-10 mol·m ⁻² ·d ⁻¹ (f) 150 to 175 ppm N (1.0 to 1.2 EC)	1. High humidity surrounding the pelleted seed will improve the germination rate at the early germination and seedling production stage. 2. The germination and usability rate are significantly improved by covering with Reemay, or growing under a tent, or growing on a mist bench, from OGC* to 2 true leaf stage (about 3 weeks). 3. Do not overwater the plug tray, as it could suffocate the tiny seed. Use the mist nozzle and keep the soil moisture level between 3 to 4. *OGC: out of germination chamber
	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide/chlormequat chloride tank mix 2,500/300 ppm Spray	(m) Level 3 (t) 65-70°F (18-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Light for germination is optional.
	(m) Level 2-4 (t) 64-73°F (18-23°C) (l) 450-700 f.c. (4,800-7,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 450-700 f.c. (4,800-7,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 450-700 f.c. (4,800-7,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Do not cover seed. Beacon White is slightly slower in Stages 1 and 2 than other Beacon colours.
	(m) Level 4 (t) 72-77°F (22-25°C) (l) 450-700 f.c. (4,800-7,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) daminozide 2,500-5,000 ppm Spray or paclobutrazol 1 ppm Spray	(m) Level 3-4 (t) 65-72°F (18-22°C) (l) 450-700 f.c. (4,800-7,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 65-72°F (18-22°C) (l) 450-700 f.c. (4,800-7,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Moisture levels surrounding the seed are very important in Stage 1 and 2. Light is required for optimal germination; so is high relative humidity. A light cover of vermiculite may be beneficial to raise humidity around the seed. White Shimmer may be 2 days slower. Avoid temperatures lower than 62°F/17°C. Temperatures at or above 85°F/29°C result in slower germination speed and lower germination results. In Stage 3, repeat daminozide 2,500-5,000 ppm spray if necessary.
	(m) Level 4 (t) 72-77°F (22-25°C) (l) 450-700 f.c. (4,800-7,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) daminozide 2,500-5,000 ppm Spray or paclobutrazol 1 ppm Spray	(m) Level 3-4 (t) 65-72°F (18-22°C) (l) 450-700 f.c. (4,800-7,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 65-72°F (18-22°C) (l) 450-700 f.c. (4,800-7,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Moisture levels surrounding the seed are very important in Stage 1 and 2. Light is required for optimal germination; so is high relative humidity. A light cover of vermiculite may be beneficial to raise humidity around the seed. Avoid temperatures lower than 62°F/17°C. Temperatures at or above 85°F/29°C result in slower germination speed and lower germination results. In Stage 3, repeat daminozide 2,500-5,000 ppm spray if necessary.
	(m) Level 4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 1,000-1,500 ppm Spray	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Incorporate a preventative fungicide program to avoid damping-off.
	(m) Level 3-4 (t) 68-74°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 66-72°F (19-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 64-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 68-74°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 66-72°F (19-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 64-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 68-74°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 66-72°F (19-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 64-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
MARIGOLD (AFRICAN) <i>Tagetes erecta</i> Lanna Lace F1	COT, DTL	288	3-4	1	Yes	2-3	6.2-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
MARIGOLD (AFRICAN) <i>Tagetes erecta</i> Marvel II™ F1 Series	COT, DTL	288	3-4	1	Yes	2-3	6.2-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
MARIGOLD (AFRICAN) <i>Tagetes erecta</i> Taishan® F1 Series	COT, DTL	288	3-4	1	Yes	2-3	6.2-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Bonanza™ Series	COT, DTL	288	3-4	1	Yes	2-3	6.2-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Durango® Series	COT, DTL	288	3-4	1	Yes	2-3	6.2-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Fireball	COT, DTL	288	3-4	1	Yes	2-3	6.2-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Flamenco	COT, DTL	288	3-4	1	Yes	2-3	6.2-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Hot Pak™ Series	COT, DTL	288	3-4	1	Yes	2-3	6.2-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Janie Series	COT, DTL	288	3-4	1	Yes	2-3	6.2-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Strawberry Blonde	COT, DTL	288	3-4	1	Yes	2-3	6.2-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
NEMESIA <i>Nemesia strumosa</i> Sundrops Mixture	RAW	288	4	1	No	3-5	5.5-6.2 pH 0.75 mmhos/cm	(t) 68-70°F (20-21°C) (l) Optional	
ORNAMENTAL MILLET <i>Pennisetum glaucum</i> Copper Prince F1	RAW	128	2-3	2-3	Yes	2-3	5.5-6.3 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 72-78°F (22-26°C) (l) Optional	
ORNAMENTAL MILLET <i>Pennisetum glaucum</i> Jade Princess F1	RAW	128	2-3	2-3	Yes	2-3	5.5-6.3 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 72-78°F (22-26°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 65-72°F (18-22°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 65-70°F (18-21°C) (l) 2,500-3,000 f.c. (26,900-32,300 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 65-70°F (18-21°C) (l) 3,000 f.c. (32,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Keep soil moisture high until radicle emergence; reduce moisture levels after radicle penetrates the medium. Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity. Higher temperatures inhibit germination, shorten crop time and cause stretching. PGRs are not generally required.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-72°F (20-22°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 65-70°F (18-21°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity. Higher temperatures inhibit germination, shorten crop time and cause stretching. PGRs are not generally required.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-72°F (20-22°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 65-70°F (18-21°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity. Higher temperatures inhibit germination, shorten crop time and cause stretching. PGRs are not generally required.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity.
	(t) 65-68°F (18-20°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(t) 55-60°F (13-16°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Grow cool at up to 55°F (13°C).
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Plugs allowed to become rootbound or stressed by drought or nutrient deficiency will not perform well after transplant. Use PGRs only if necessary to tone plugs. Seed may also be direct sown to the final container, reducing total crop time by 2 weeks. See GrowerFacts for details.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Jade Princess is cold sensitive. Plugs allowed to become rootbound or stressed by drought or nutrient deficiency will not perform well after transplant. Use PGRs only if necessary to tone plugs. Seed may also be direct sown to the final container, reducing total crop time by 2 weeks. Keep Jade Princess above 60°F (16°C). See GrowerFacts for details.

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
ORNAMENTAL MILLET <i>Pennisetum glaucum</i> Jester F1	RAW	128	2-3	2-3	Yes	2-3	5.5-6.3 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 72-78°F (22-26°C) (l) Optional	
ORNAMENTAL MILLET <i>Pennisetum glaucum</i> Purple Baron F1	RAW	128	2-3	2-3	Yes	2-3	5.5-6.3 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 72-78°F (22-26°C) (l) Optional	
ORNAMENTAL MILLET <i>Pennisetum glaucum</i> Purple Majesty	RAW	128	2-3	2-3	Yes	2-3	5.5-6.3 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 72-78°F (22-26°C) (l) Optional	
ORNAMENTAL OREGANO <i>Origanum x hybrida</i> Kirigami	RAW	288	5-6	4	No	4-5	5.8-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Light	
OSTEOSPERMUM <i>Osteospermum ecklonis</i> Akila® F1 Series	RAW	288 105	4-5 5	1 1	Yes	5-6	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Optional	
PANSY <i>Viola x wittrockiana</i> Frizzle Sizzle F1 Series	PRM, RAW	288	5	1	Yes	3-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C) (l) Optional	
PANSY <i>Viola x wittrockiana</i> Matrix® F1 Series	PRM, RAW	288	5	1	Yes	3-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C)	
PANSY <i>Viola x wittrockiana</i> Panola® XP F1 Series	PRM, RAW	288	5	1	Yes	3-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C) (l) Optional	
PANSY <i>Viola x wittrockiana</i> Promise® F1 Series	PRM, RAW	288	5	1	Yes	3-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C) (l) Optional	
PANSY <i>Viola x wittrockiana</i> Spring Matrix™ F1 Series	PRM, RAW	288	5	1	Yes	3-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Plants that are rootbound or stressed due to drought or nutrient deficiency will not perform well after transplant. Seed may also be direct sown to the final container, reducing total crop time by 2 weeks. See GrowerFacts for details.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Plants that are rootbound or stressed due to drought or nutrient deficiency will not perform well after transplant. Seed may also be direct sown to the final container, reducing total crop time by 2 weeks. See GrowerFacts for details.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Plants that are rootbound or stressed due to drought or nutrient deficiency will not perform well after transplant. Seed may also be direct sown to the final container, reducing total crop time by 2 weeks. See GrowerFacts for details.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-2 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 1,000-1,500 ppm Spray	(m) Level 2 (t) 60-65°F (16-18°C) (l) 3,500-5,000 f.c. (37,700-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 1,000-1,500 ppm Spray	Do not plant plug too deep, same level as medium. Provide an active growing climate and avoid growing wet. Grow on dry side.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-3,000 ppm Spray	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Using a larger liner such as a 105 at 1 spc will promote more branching and help reduce total crop time. PGRs are generally not needed. If necessary, a daminozide 2,500 ppm spray applied 3 weeks after sowing will tone plugs.
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	(m) Level 2-4 (t) 55-60°F (13-16°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions in Stages 3 and 4.
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	(m) Level 2-4 (t) 55-60°F (13-16°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions in Stages 3 and 4. Northwestern Europe: Can use 1 to 2 applications of B-Nine/Alar (daminozide) at 1,280 ppm (1.5 g/l of 85% formulation or 2 g/l of 64% formulation).
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	(m) Level 2-4 (t) 55-60°F (13-16°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions in Stages 3 and 4.
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	(m) Level 2-4 (t) 55-60°F (13-16°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions in Stages 3 and 4.
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	(m) Level 2-4 (t) 55-60°F (13-16°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions in Stages 3 and 4.

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
PANSY (SPREADING) <i>Viola x wittrockiana</i> Cool Wave® F1 Series	PRM	288	4-5	1	Yes	2-3	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C) (l) Optional	
PANSY (SPREADING) <i>Viola x wittrockiana</i> Top Wave™ F1 Series	PRM	288	4-5	1	Yes	2-3	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-77°F (18-25°C) (l) Optional	
PENTAS <i>Pentas lanceolata</i> Butterfly™ F1 Series	PEL	288	6-8	1	No	6-9	6.5-6.8 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 75°F (24°C) (l) Light	
PENTAS <i>Pentas lanceolata</i> Glitterati™ F1 Series	PEL	288	6-7	1	No	6-9	6.5-6.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 75°F (24°C) (l) Light	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 1,500-2,500 ppm Spray or daminozide/ chlormequat chloride tank mix 1,500/250-2,500/500 ppm Spray	(m) Level 2-4 (t) 60-65°F (16-18°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 1,500-2,500 ppm Spray or daminozide/ chlormequat chloride tank mix 1,500/250-2,500/500 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions in Stages 3 and 4. Cool Wave varieties do not respond uniformly to ancymidol in plug production, so its use is not recommended. Using 105/128 plugs promotes stronger lateral growth and quicker finish. If using a 288, transplant a younger, actively growing plug that is not rootbound.
	(m) Level 3-4 (t) 64-70°F (18-21°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 1,500-2,500 ppm Spray or daminozide/ chlormequat chloride tank mix 1,500/250-2,500/500 ppm Spray	(m) Level 2-4 (t) 60-65°F (16-18°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 1,500-2,500 ppm Spray or daminozide/ chlormequat chloride tank mix 1,500/250-2,500/500 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions in Stages 3 and 4.
	(m) Level 4 (t) 75°F (24°C) (l) 1,500-2,000 f.c. (16,100-21,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) daminozide 2,500 ppm Spray or paclobutrazol 5 ppm Spray	(m) Level 2-4 (t) 60-65°F (16-18°C) (l) 3,500-5,000 f.c. (37,700-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) daminozide 2,500 ppm Spray or paclobutrazol 5 ppm Spray	Pentas have the ability to naturally lower the media pH. High iron levels or pH below 6.0 can cause marginal burn and yellowing on older or lower leaves. Raise pH by adding limestone. Extremely low pH can induce iron and manganese toxicity (brown or tan lesions on the foliage); use a base-forming fertiliser, such as 15-0-15. If symptoms do not improve, or if the pH is below 6.0, irrigate the crop with a hydrated lime solution; rinse foliage after application to avoid phytotoxicity. Calcium and magnesium deficiency: If pH falls below recommended target values, lower leaf interveinal chlorosis and foliar puckering can develop. Use fertilisers that contain magnesium during early crop development. Supplement with calcium nitrate to adjust pH. Avoid wide fluctuations in media moisture levels. PGR Note: Rates of up to 5,000 ppm daminozide or 10 ppm paclobutrazol have been found to be effective under warmer growing conditions. Temperature differential (DIF) can also be used to minimise height.
	(m) Level 4 (t) 75°F (24°C) (l) 1,500-2,000 f.c. (16,100-21,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) daminozide 2,500 ppm Spray or paclobutrazol 5 ppm Spray	(m) Level 2-4 (t) 60-65°F (16-18°C) (l) 3,500-5,000 f.c. (37,700-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) daminozide 2,500 ppm Spray or paclobutrazol 5 ppm Spray	Pentas have the ability to naturally lower the media pH. High iron levels or pH below 6.0 can cause marginal burn and yellowing on older or lower leaves. Raise pH by adding limestone. Extremely low pH can induce iron and manganese toxicity (brown or tan lesions on the foliage); use a base-forming fertiliser, such as 15-0-15. If symptoms do not improve, or if the pH is below 6.0, irrigate the crop with a hydrated lime solution; rinse foliage after application to avoid phytotoxicity. Calcium and magnesium deficiency: If pH falls below recommended target values, lower leaf interveinal chlorosis and foliar puckering can develop. Use fertilisers that contain magnesium during early crop development. Supplement with calcium nitrate to adjust pH. Avoid wide fluctuations in media moisture levels. PGR Note: Rates of up to 5,000 ppm daminozide or 10 ppm paclobutrazol have been found to be effective under warmer growing conditions. Temperature differential (DIF) can also be used to minimise height.

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
PENTAS <i>Pentas lanceolata</i> Lucky Star® F1 Series	PEL	288	6-7	1	No	5-8	6.4-6.6 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 75-82°F (24-28°C) (l) Light	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Black Pearl	RAW	288	4-5	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Calico F1	RAW	288	4-5	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Midnight Fire	RAW	288	4-5	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Purple Flash	RAW	288	4-5	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Sangria F1	RAW	288	4-5	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Sedona Sun	RAW	288	4-5	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PETCHOA <i>Petunia sp. x Calibrachoa sp.</i> Caliburst™ F1 Series	PEL	288 128	4-6 5-7	1 1	No	3-7	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 68-77°F (20-25°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 75-77°F (24-25°C) (l) 4-6 mol·m ⁻² ·d ⁻¹ , 1,500-2,000 f.c. (16,100-21,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-75°F (20-24°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ , 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) daminozide 2,500 ppm Spray or paclobutrazol 5 ppm Spray	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 10-12 mol·m ⁻² ·d ⁻¹ , 3,500-5,000 f.c. (37,700-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) daminozide 2,500 ppm Spray or paclobutrazol 5 ppm Spray	Pentas have the ability to naturally lower the media pH. High iron levels or pH below 6.0 can cause marginal burn and yellowing on older or lower leaves. Raise pH by adding limestone. Extremely low pH can induce iron and manganese toxicity (brown or tan lesions on the foliage); use a base-forming fertiliser, such as 15-0-15. If symptoms do not improve, or if the pH is below 6.0, irrigate the crop with a hydrated lime solution; rinse foliage after application to avoid phytotoxicity. Calcium and magnesium deficiency: If pH falls below recommended target values, lower leaf interveinal chlorosis and foliar puckering can develop. Use fertilisers that contain magnesium during early crop development. Supplement with calcium nitrate to adjust pH. Avoid wide fluctuations in media moisture levels. PGR Note: Rates of up to 5,000 ppm daminozide or 10 ppm paclobutrazol have been found to be effective under warmer growing conditions. Temperature differential (DIF) can also be used to minimise height. Lucky Star Dark Red can exhibit leaf necrosis (chilling injury) when exposed to temperatures below 60°F (16°C). The extent of chilling injury depends on the exposure temperature and duration. Plants do grow out of minor damage when exposure is minimal but, to avoid any chilling injury, keep above 60°F (16°C) during production and transport.
	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Performs best under high light and warm temperatures. If necessary, uniconazole (Sumagic) at rate of 2.5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Performs best under high light and warm temperatures. If necessary, uniconazole (Sumagic) at rate of 2.5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Performs best under high light and warm temperatures. If necessary, uniconazole (Sumagic) at rate of 2.5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Performs best under high light and warm temperatures. If necessary, uniconazole (Sumagic) at rate of 2.5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Performs best under high light and warm temperatures. If necessary, uniconazole (Sumagic) at rate of 2.5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Performs best under high light and warm temperatures. If necessary, uniconazole (Sumagic) at rate of 2.5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Performs best under high light and warm temperatures. If necessary, uniconazole (Sumagic) at rate of 2.5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Performs best under high light and warm temperatures. If necessary, uniconazole (Sumagic) at rate of 2.5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-77°F (20-25°C) (l) 6 mol·m ⁻² ·d ⁻¹ , 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 8-12 mol·m ⁻² ·d ⁻¹ , 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 60-65°F (16-18°C) (l) 8-15 mol·m ⁻² ·d ⁻¹ , 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	Petchoa plug culture is similar to petunias, except petchoas require 1-2 additional days to germinate (plug Stage 1) compared to petunias.

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
PETUNIA <i>Petunia x hybrida</i> Daddy® F1 Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75-1.0 mmhos/cm	(m) Level 4-5 (t) 72-77°F (22-25°C) (l) Light	
PETUNIA <i>Petunia x hybrida</i> Dreams™ F1 Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75-1.0 mmhos/cm	(m) Level 4-5 (t) 72-77°F (22-25°C) (l) Light	
PETUNIA <i>Petunia x hybrida</i> Ez Rider® F1 Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75-1.0 mmhos/cm	(m) Level 4-5 (t) 72-77°F (22-25°C) (l) Light	
PETUNIA <i>Petunia x hybrida</i> Lo Rider™ F1 Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75-1.0 mmhos/cm	(m) Level 4-5 (t) 72-76°F (22-24°C) (l) Light	
PETUNIA <i>Petunia x hybrida</i> Madness® F1 Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75-1.0 mmhos/cm	(m) Level 4-5 (t) 72-77°F (22-25°C) (l) Light	
PETUNIA <i>Petunia x hybrida</i> Mirage™ F1 Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75-1.0 mmhos/cm	(m) Level 4-5 (t) 72-77°F (22-25°C) (l) Light	
PETUNIA <i>Petunia x hybrida</i> Pretty Flora™ Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75-1.0 mmhos/cm	(m) Level 4-5 (t) 72-77°F (22-25°C) (l) Light	
PETUNIA <i>Petunia x hybrida</i> Pretty Grand™ F1 Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75-1.0 mmhos/cm	(m) Level 4-5 (t) 72-77°F (22-25°C) (l) Light	
PETUNIA <i>Petunia x hybrida</i> Sophistica® F1 Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75-1.0 mmhos/cm	(m) Level 4-5 (t) 72-77°F (22-25°C) (l) Light	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 72-77°F (22-25°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 60-65°F (16-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	
	(m) Level 3-4 (t) 72-77°F (22-25°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	
	(m) Level 3-4 (t) 72-77°F (22-25°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	Genetically compact petunia needs less to no PGR after transplant.
	(m) Level 3-4 (t) 72-77°F (22-25°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	Genetically compact petunia needs less to no PGR after transplant.
	(m) Level 3-4 (t) 72-77°F (22-25°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	
	(m) Level 3-4 (t) 72-77°F (22-25°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	
	(m) Level 3-4 (t) 72-77°F (22-25°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 60-65°F (16-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	Genetically compact petunia needs less to no PGR after transplant.
	(m) Level 3-4 (t) 72-77°F (22-25°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	Genetically compact petunia needs less to no PGR after transplant.
	(m) Level 3-4 (t) 72-77°F (22-25°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	PGR options include paclobutrazol or flurprimidol.

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
PETUNIA <i>Petunia x hybrida</i> Supercascade F1 Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75-1.0 mmhos/cm	(m) Level 4-5 (t) 72-77°F (22-25°C) (l) Light	
PETUNIA (DOUBLE) <i>Petunia x hybrida</i> Double Cascade F1 Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PETUNIA (DOUBLE) <i>Petunia x hybrida</i> Double Madness™ F1 Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 75-78°F (24-26°C) (l) Optional	
PETUNIA (DOUBLE) <i>Petunia x hybrida</i> Duo F1 Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PETUNIA (DOUBLE) <i>Petunia x hybrida</i> Glorious F1 Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PETUNIA (DOUBLE) <i>Petunia x hybrida</i> Pirouette F1 Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PETUNIA (SPREADING) <i>Petunia x hybrida</i> E3 Easy Wave® F1 Series	PEL	288 128	4-6 5-7	1 1	No	3-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 72-77°F (22-25°C) (l) Optional	
PETUNIA (SPREADING) <i>Petunia x hybrida</i> Easy Wave® F1 Series	PEL	288 128	4-6 5-7	1 1	No	3-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 72-77°F (22-25°C) (l) Optional	
PETUNIA (SPREADING) <i>Petunia x hybrida</i> Shock Wave® F1 Series	PEL	288 128	4-6 5-7	1 1	No	3-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 72-77°F (22-25°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 72-77°F (22-25°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Germination on some varieties may be improved by a 25 to 50 ppm N application of potassium nitrate after sowing.
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Germination on some varieties may be improved by a 25 to 50 ppm N application of potassium nitrate after sowing.
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Germination on some varieties may be improved by a 25 to 50 ppm N application of potassium nitrate after sowing.
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Germination on some varieties may be improved by a 25 to 50 ppm N application of potassium nitrate after sowing.
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Germination on some varieties may be improved by a 25 to 50 ppm N application of potassium nitrate after sowing.
	(m) Level 3-4 (t) 72-77°F (22-25°C) (l) 6 mol·m ⁻² ·d ⁻¹ , 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 8-12 mol·m ⁻² ·d ⁻¹ , 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 60-65°F (16-18°C) (l) 8-15 mol·m ⁻² ·d ⁻¹ , 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	
	(m) Level 3-4 (t) 72-77°F (22-25°C) (l) 6 mol·m ⁻² ·d ⁻¹ , 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 8-12 mol·m ⁻² ·d ⁻¹ , 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 60-65°F (16-18°C) (l) 8-15 mol·m ⁻² ·d ⁻¹ , 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	
	(m) Level 3-4 (t) 72-77°F (22-25°C) (l) 6 mol·m ⁻² ·d ⁻¹ , 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 8-12 mol·m ⁻² ·d ⁻¹ , 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 60-65°F (16-18°C) (l) 8-15 mol·m ⁻² ·d ⁻¹ , 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
PETUNIA (SPREADING) <i>Petunia x hybrida</i> Tidal Wave® F1 Series	PEL	288 128	4-6 5-7	1 1	No	3-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 72-77°F (22-25°C) (l) Optional	
PETUNIA (SPREADING) <i>Petunia x hybrida</i> Wave® F1 Series	PEL	288 128	4-6 5-7	1 1	No	3-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 72-77°F (22-25°C) (l) Optional	
PHLOX <i>Phlox drummondii</i> 21st Century F1 Series	PRM	288	4-5	1	Yes	3-5	5.8-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C) (l) Dark	
PLECTRANTHUS <i>Plectranthus argentatus</i> Silver Crest	RAW	288	5-6	1	No	4-5	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-72°F (18-22°C) (l) Light	
PLECTRANTHUS <i>Plectranthus argentatus</i> Silver Shield	PEL	288	5-6	1	No	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-72°F (18-22°C) (l) Light	
PORTULACA <i>Portulaca grandiflora</i> Happy Hour™ F1 Series	MPL, RAW	288	4-5	1 4-6	No	2-3	5.5-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 71-79°F (22-26°C) (l) Light	
PORTULACA <i>Portulaca grandiflora</i> Happy Trails™ F1 Series	MPL, RAW	288	4-5	1 4-6	No	2-3	5.5-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 71-79°F (22-26°C) (l) Light	
PRIMULA <i>Primula acaulis</i> Heritage Crème F1	RAW	288	5-6	1	Light cover	7-10	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 64-68°F (18-20°C) (l) Optional	
PRIMULA <i>Primula acaulis</i> Primlet® Series	RAW	288	5-6	1	Light cover	7-10	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 64-68°F (18-20°C) (l) Optional	
PURSLANE <i>Portulaca oleracea</i> Toucan Series	RAW	288	4-5	4	No	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 72-77°F (22-25°C) (l) 6 mol·m ⁻² ·d ⁻¹ , 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 8-12 mol·m ⁻² ·d ⁻¹ , 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 60-65°F (16-18°C) (l) 8-15 mol·m ⁻² ·d ⁻¹ , 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	
	(m) Level 3-4 (t) 72-77°F (22-25°C) (l) 6 mol·m ⁻² ·d ⁻¹ , 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 8-12 mol·m ⁻² ·d ⁻¹ , 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 60-65°F (16-18°C) (l) 8-15 mol·m ⁻² ·d ⁻¹ , 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	
	(m) Level 3-4 (t) 65-72°F (18-22°C) (l) 1,000 f.c. (10,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 60-65°F (16-18°C) (l) 2,500-3,000 f.c. (26,900-32,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 2,500-3,000 f.c. (26,900-32,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	Cover thoroughly with coarse vermiculite. Darkness is required for germination.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 600-1,200 ppm Spray	(m) Level 2-3 (t) 65-72°F (18-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Does not need pinching. If needed, a daminozide spray will work to tone the plugs.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	(m) Level 2-3 (t) 65-72°F (18-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Does not need pinching. One to two foliar sprays of daminozide may be needed to tone plugs. Daminozide applications at a rate of 600 to 1,500 ppm are best for Northern European conditions.
	(m) Level 3 (t) 71-73°F (22-23°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-73°F (20-23°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 65-67°F (18-19°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	To prevent plants from rosetting, sow seeds when the natural daylength is longer than 10 hours and 30 minutes. If sowing earlier than suggested, provide long day conditions (daylength extension to 12 to 13 hours) during all phases of production until critical natural daylength is achieved.
	(m) Level 3 (t) 71-73°F (22-23°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-73°F (20-23°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 65-67°F (18-19°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	To prevent plants from rosetting, sow seeds when the natural daylength is longer than 10 hours. If sowing earlier than suggested, provide long day conditions (daylength extension to 12 to 13 hours) during all phases of production until critical natural daylength is achieved.
	(m) Level 3-4 (t) 60-62°F (16-17°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 66-72°F (19-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 64-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Avoid too high light levels (>3,000 f.c.) to prevent leaf damage.
	(m) Level 3-4 (t) 60-62°F (16-17°C) (l) 500-1,500 f.c. (5,400-16,100 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-62°F (16-17°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 60-62°F (16-17°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Avoid too high light levels (>3,000 f.c.) to prevent leaf damage.
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 64-68°F (18-20°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 64-68°F (18-20°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
RUELLIA <i>Ruellia brittoniana</i> <i>(Ruellia tweediana)</i> Southern Star Series	RAW	288	5-6	1	Yes	5-6	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
SALVIA <i>Salvia canariensis</i> Lancelot	RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Optional	
SALVIA <i>Salvia splendens</i> Lighthouse Series	RAW	288	4-5	1	Yes	4-6	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional	
SALVIA <i>Salvia splendens</i> Red Hot Sally II	RAW	288	4-5	1	Yes	4-6	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional	
SALVIA <i>Salvia splendens</i> Scarlet King	RAW	288	4-5	1	Yes	4-6	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional	
SALVIA <i>Salvia splendens</i> Vista™ Series	RAW	288	4-5	1	Yes	4-6	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional	
SALVIA INTERSPECIFIC <i>Salvia longispicata x farinacea</i> Big Blue	RAW	288 128	3-4 4-5	1 1	Optional	4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-77°F (20-25°C) (l) Optional	
SNAPDRAGON <i>Antirrhinum majus</i> Rocket F1 Series	RAW	288	5-6	1	Light cover	4-8	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-75°F (18-24°C) (l) Optional	
SNAPDRAGON <i>Antirrhinum majus</i> Snapshot™ F1 Series	RAW	288	5-6	1	Light cover	4-6	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-68°F (18-20°C) (l) Optional	
STOCK <i>Matthiola incana</i> Hot Cakes Series	RAW	288	4-5	1	Yes	3-4	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 65-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 59-68°F (15-20°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 59-68°F (15-20°C) (l) 3,000 f.c. (32,300 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) daminozide 2,500 ppm Spray	(m) Level 2-4 (t) 59-68°F (15-20°C) (l) 3,000 f.c. (32,300 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Maintain level 4 moisture during Stage 1. Saturated media (level 5) can reduce germination. Daminozide 2,500 ppm spray or paclobutrazol 5 ppm spray are equally effective on <i>Salvia canariensis</i> plugs. Apply in Stage 3 and repeat if necessary to control stretch.
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-72°F (20-22°C) (l) 3,000 f.c. (32,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 3,000 f.c. (32,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	<i>Salvia</i> is very sensitive to high salt during early plug stages.
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 1,500-2,000 f.c. (16,100-21,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-72°F (20-22°C) (l) 3,000 f.c. (32,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 3,000 f.c. (32,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	<i>Salvia</i> is very sensitive to high salt during early plug stages.
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-72°F (20-22°C) (l) 3,000 f.c. (32,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 3,000 f.c. (32,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	<i>Salvia</i> is very sensitive to high salt during early plug stages.
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 1,500 f.c. (16,100 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-72°F (20-22°C) (l) 3,000 f.c. (32,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 3,000 f.c. (32,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	<i>Salvia</i> is very sensitive to high salt during early plug stages.
	(m) Level 3-4 (t) 68-77°F (20-25°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-72°F (20-22°C) (l) 3,000 f.c. (32,300 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) daminozide 2,500 ppm Spray	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 3,000 f.c. (32,300 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	<i>Salvia</i> Big Blue is responsive to daminozide 2,500 ppm spray, or ancymidol 5 ppm spray, or paclobutrazol 5 ppm spray. Recommended first application 2 weeks after sow, and repeat in 7-10 days as needed. Rates recommended are for the Midwest, and will need to be adjusted for your location and conditions. Lighting the plug when growing under low DLI and short days (with supplemental and daylength extension) will hasten flower initiation.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 62-65°F (17-18°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 450-1,500 f.c. (4,800-16,100 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 62-65°F (17-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 10 ppm Spray	(m) Level 3 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 10 ppm Spray	Plant Growth Regulators: Use DIF whenever possible. Ancymidol sprayed 3 and 4 weeks after sowing at 10 ppm is effective in controlling height.
	(m) Level 3-4 (t) 60-70°F (16-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 55-60°F (13-16°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Seedlings of double-flowering plants can be selected during plug production based on cotyledon leaf colour (double: pale green; yellow and singles: darker green). Once cotyledons have fully expanded (approximately 11 to 12 days from sowing), seedlings can be moved into a cold chamber/storage set at 40 to 45°F (4 to 7°C) for a period of approximately 3 to 4 days. Hold them in the chamber for a maximum of 4 days, after which they can be grown at cool temperatures (50 to 60°F/10 to 15°C) in a greenhouse until selection. It is possible to differentiate the seedlings starting after they come out of the cold chamber.

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
SUNFLOWER <i>Helianthus annuus</i> Always Sunny F1 Series	RAW	128 72	2-3 3-4	1 1	Heavy cover	3-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-77°F (18-25°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TORENIA <i>Torenia fournieri</i> Kauai™ Series	PEL	288	5-6	1	No	4-6	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 71-76°F (22-24°C) (l) Light	
VERBENA <i>Verbena x hybrida</i> Quartz Series	PRM, RAW	288	5-6	1	Yes	4-6	5.8-6.2 pH 0.5-0.7 mmhos/cm	(m) Level 3 (t) 72-75°F (22-24°C) (l) Optional	
VERBENA <i>Verbena x hybrida</i> Quartz XP Series	PRM, RAW	288	4-5	1	Yes	4-6	5.8-6.2 pH 0.5-0.7 mmhos/cm	(m) Level 3 (t) 72-75°F (22-24°C) (l) Optional	
VINCA <i>Catharanthus roseus</i> Mediterranean XP Series	RAW	288	5	1	Yes	3-5	5.8-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 75-78°F (24-26°C) (l) Dark	
VINCA <i>Catharanthus roseus</i> Pacifica XP Series	RAW	288	5	1	Yes	3-5	5.8-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 75-78°F (24-26°C) (l) Dark	
VINCA <i>Catharanthus roseus</i> Tattoo™ Series	RAW	288	5	1	Yes	3-5	5.8-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 75-78°F (24-26°C) (l) Dark	
VINCA <i>Catharanthus roseus</i> Titan-ium™ F1 Series	RAW	288	5	1	Yes	3-5	5.8-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 75-86°F (24-30°C) (l) Dark	
VINCA <i>Catharanthus roseus</i> Titan™ F1 Series	RAW	288	5	1	Yes	3-5	5.8-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 75-78°F (24-26°C) (l) Dark	
VINCA <i>Catharanthus roseus</i> Valiant™ F1 Series	RAW	288	5	1	Yes	3-5	5.8-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 75-78°F (24-26°C) (l) Dark	
VIOLA <i>Viola cornuta</i> Sorbet® F1 Series	PRM, RAW	288	5	1	Yes	3-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 64-72°F (18-22°C) (f) Less than 100 ppm N (Less than 0.7 EC) (p) paclobutrazol 2 ppm Srench	(m) Level 2 (t) 64-72°F (18-22°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 61-72°F (16-22°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Apply paclobutrazol 2 ppm srench at radial emergence stage to prevent stretching. When the plugs are grown under long days (14 hours or longer) or night interruption for 2 weeks, they will flower faster, regardless of subsequent daylength after transplanting.
	(m) Level 3 (t) 68-73°F (20-23°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 65-67°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 4 (t) 70-72°F (21-22°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Avoid excessive moisture in plug media during germination Stage 1. If needed, 1 to 3 applications of B-Nine/Alar (daminozide) at 1,250 ppm (1.5 g/l 85% formulation or 2 g/l 64% formulation) spray has been tested and shown to be effective. In warmer climates, it is also possible to apply A-rest (ancymidol) at 10 ppm (37.6 ml/l, 0.0264% formulation) as a foliar spray.
	(m) Level 4 (t) 70-72°F (21-22°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Avoid excessive moisture in plug media during germination Stage 1. If needed, 1 to 3 applications of B-Nine/Alar (daminozide) at 1,250 ppm (1.5 g/l 85% formulation or 2 g/l 64% formulation) spray has been tested and shown to be effective. In warmer climates, it is also possible to apply A-rest (ancymidol) at 10 ppm (37.6 ml/l, 0.0264% formulation) as a foliar spray.
	(m) Level 3-4 (t) 70-72°F (21-22°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 70-72°F (21-22°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 2-5 ppm Spray	(m) Level 2-4 (t) 70-72°F (21-22°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 2-5 ppm Spray	Bottom heat during production can increase yield potential and decrease crop time. At Stage 3 and Stage 4, preventive fungicide applications are recommended for Thielaviopsis, Pythium, Phytophthora and Rhizoctonia. Growth regulator information is provided for reference and does not apply to all growing conditions/locations. Review your crop prior to use.
	(m) Level 3-4 (t) 70-72°F (21-22°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 70-72°F (21-22°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 2-5 ppm Spray	(m) Level 2-4 (t) 70-72°F (21-22°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 2-5 ppm Spray	Bottom heat during production can increase yield potential and decrease crop time. At Stage 3 and Stage 4, preventive fungicide applications are recommended for Thielaviopsis, Pythium, Phytophthora and Rhizoctonia. Growth regulator information is provided for reference and does not apply to all growing conditions/locations. Review your crop prior to use.
	(m) Level 3-4 (t) 70-72°F (21-22°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 70-72°F (21-22°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) ancymidol 2-5 ppm Spray	(m) Level 2-4 (t) 70-72°F (21-22°C) (l) 5,000 f.c. (53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) ancymidol 2-5 ppm Spray	Bottom heat during production can increase yield potential and decrease crop time. At Stage 3 and Stage 4, preventive fungicide applications are recommended for Thielaviopsis, Pythium, Phytophthora and Rhizoctonia. Growth regulator information is provided for reference and does not apply to all growing conditions/locations. Review your crop prior to use.
	(m) Level 3-4 (t) 72-82°F (22-28°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 70-72°F (21-22°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) ancymidol 2-5 ppm Spray	(m) Level 2-4 (t) 70-72°F (21-22°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 2-5 ppm Spray	Bottom heat during production can increase yield potential and decrease crop time. At Stage 3 and Stage 4, preventive fungicide applications are recommended for Thielaviopsis, Pythium, Phytophthora and Rhizoctonia. Growth regulator information is provided for reference and does not apply to all growing conditions/locations. Review your crop prior to use.
	(m) Level 3-4 (t) 70-72°F (21-22°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 70-72°F (21-22°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 2-5 ppm Spray	(m) Level 2-4 (t) 70-72°F (21-22°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 2-5 ppm Spray	Bottom heat during production can increase yield potential and decrease crop time. At Stage 3 and Stage 4, preventive fungicide applications are recommended for Thielaviopsis, Pythium, Phytophthora and Rhizoctonia. Growth regulator information is provided for reference and does not apply to all growing conditions/locations. Review your crop prior to use.
	(m) Level 3-4 (t) 70-72°F (21-22°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 70-72°F (21-22°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) ancymidol 2-5 ppm Spray	(m) Level 2-4 (t) 70-72°F (21-22°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 2-5 ppm Spray	Bottom heat during production can increase yield potential and decrease crop time. At Stage 3 and Stage 4 preventive fungicide applications are recommended for Thielaviopsis, Pythium, Phytophthora and Rhizoctonia. Growth regulator information is provided for reference and does not apply to all growing conditions/locations. Review your crop prior to use.
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	(m) Level 2-4 (t) 55-60°F (13-16°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions in Stages 3 and 4.

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
VIOLA <i>Viola cornuta</i> Sorbet® XP F1 Series	PRM, RAW	288	5	1	Yes	3-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C) (l) Optional	
ZINNIA <i>Zinnia marylandica</i> Double Zahara™ Series	COT, RAW	288	3	1	Yes	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-73°F (20-23°C) (l) Optional	
ZINNIA <i>Zinnia elegans</i> (syn. <i>Zinnia violaceae</i>) Elegant™ Series	COT	288	3-4	1	Yes	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-73°F (20-23°C) (l) Optional	
ZINNIA <i>Zinnia marylandica</i> Zahara® Series	COT, RAW	288	3	1	Light cover	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-73°F (20-23°C) (l) Optional	
ZINNIA <i>Zinnia elegans</i> (syn. <i>Zinnia violaceae</i>) Zesty™ Series	COT	288	3-4	1	Yes	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-73°F (20-23°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 60-70°F (16-21°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	(m) Level 2-4 (t) 55-60°F (13-16°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions in Stages 3 and 4.
	(m) Level 3-4 (t) 68-76°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-76°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 1,250- 2,500 ppm Spray	(m) Level 3 (t) 65-70°F (18-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Avoid excessive moisture on plants and flowers. Monitor for Botrytis.
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	Do not hold the plugs too long, as this may cause delay in flowering.
	(m) Level 3-4 (t) 70-75°F (21-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 70-75°F (21-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 1,250- 2,500 ppm Spray	(m) Level 3 (t) 65-70°F (18-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Avoid excessive moisture on plants and flowers. Monitor for Botrytis.
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	Do not hold the plugs too long, as this may cause delay in flowering.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
ALTERNANTHERA <i>Alternanthera brasiliana</i> Purple Prince	288	(day) 65-75°F (18-24°C) (night) 62-65°F (17-18°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Obligate Short Day	
ALYSSUM <i>Lobularia maritima</i> Clear Crystal® Series	288	(day) 60-75°F (16-24°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral	
ALYSSUM <i>Lobularia maritima</i> Easter Bonnet Series	288	(day) 60-75°F (16-24°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral	
ANGELONIA <i>Angelonia angustifolia</i> Serena® F1 Series	288 128	(day) 65-76°F (18-24°C) (night) 65-67°F (18-19°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral	
ANGELONIA <i>Angelonia angustifolia</i> Serenita® F1 Series	288 128	(day) 65-76°F (18-24°C) (night) 65-67°F (18-19°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral	
ASPARAGUS <i>Asparagus densiflorus 'Sprenger'</i> FuzzyFern™ Frizz	128 72	(day) 65-70°F (18-21°C) (night) 60-65°F (16-18°C)	5.5-6.2 pH 1.5-2.0 mmhos/cm		
BACOPA Galactic Mist F1 Series	288 128	(day) 60-75°F (16-24°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral	
BACOPA <i>Sutera cordata</i> Blutopia® F1	288 128	(day) 60-75°F (16-24°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral	
BACOPA <i>Sutera cordata</i> Pinktopia F1	288 128	(day) 60-75°F (16-24°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
BACOPA <i>Sutera cordata</i> Snowtopia® F1	288 128	(day) 60-75°F (16-24°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
BACOPA <i>Sutera cordata</i> Utopia	128 288	(day) 59-76°F (15-24°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
BEGONIA <i>Begonia interspecific</i> BabyWing® F1 Series	288	(day) 65-70°F (18-21°C) (night) 60-65°F (16-18°C)	6.0-6.5 pH 1.0-1.2 mmhos/cm	Day Neutral	
BEGONIA <i>Begonia interspecific</i> Dragon Wing® F1 Series	288	(day) 65-70°F (18-21°C) (night) 60-65°F (16-18°C)	5.4-6.0 pH 1.0 mmhos/cm	Facultative Short Day Long day will delay the flower initiation up to 3 to 4 weeks.	

FINISHING PROGRAMS	KEY TIPS
306 Pack/1801 , 1 (ppp), 7-8 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 306 Pack/1801 , 1 (ppp), 7-8 (weeks), Spring, PGR paclobutrazol 15-20 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Spring, PGR paclobutrazol 15-20 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 8-9 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 8-9 (weeks), Spring, PGR paclobutrazol 15-20 ppm Spray	Alternanthera Purple Prince is grown for its burgundy foliage. Grow plants with daylength longer than 12 hours to maintain vegetative growth. Growing under high light conditions will result in deeper purple foliage. Pinching is not needed.
306 Pack/1801 , 1 (ppp), 4-6 (weeks), Late Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 7 (weeks), Late Spring	Cool-season crop can be grown with little or no heat. Grow outdoors or at cool night temperatures for best colour development.
Cell Pack , 1 (ppp), 5 (weeks), Late Spring	Drench with a fungicide at transplant. Cool-season crop can be grown with little or no heat. Grow outdoors or at cool night temperatures for best colour development.
306 Pack/1801 , 1 (ppp), 8-9 (weeks), Late Spring, PGR daminozide/chlormequat chloride tank mix 2,500/750-2,500/1,000 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Late Spring, PGR daminozide/chlormequat chloride tank mix 2,500/750-2,500/1,000 ppm Spray	Angelonia grows slowly when the temperature is below 64°F (18°C). Recommended DLI range of 12 to 24 mol·m⁻²·d⁻¹. If growing in warmer climates, a paclobutrazol drench of 5-10 ppm can be applied 2 weeks after transplant instead of the daminozide/chlormequat chloride tank mix. Do not pinch plants. Pinching will result in uneven plant habit and a delay of flowering.
306 Pack/1801 , 1 (ppp), 8-9 (weeks), Late Spring, PGR daminozide/chlormequat chloride tank mix 2,500/500-2,500/750 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Late Spring, PGR daminozide/chlormequat chloride tank mix 2,500/500-2,500/750 ppm Spray	Angelonia grows slowly when the temperature is below 64°F (18°C). Recommended DLI range of 12 to 24 mol·m⁻²·d⁻¹. Serenita requires less PGRs than Serena, as it is more compact and naturally shorter. It may not need any PGRs, especially under cool conditions. If necessary, use a tank mix of B-Nine/Alar (daminozide) 2,500 ppm mixed with Cycocel (chlormequat) 500 to 750 ppm. If growing in warmer climates, a paclobutrazol drench of 3 to 5 ppm can be applied 2 weeks after transplant instead of the daminozide/chlormequat chloride tank mix. Do not pinch plants. Pinching will result in uneven plant habit and a delay of flowering.
306 Pack/1801 , 1 (ppp), 10-12 (weeks), Spring 3"/8 cm , 1 (ppp), 13-14 (weeks), Spring 4"/4.5"/Quart/10 cm , 1-2 (ppp), 14-15 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 16-18 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 22-24 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 3-4 (ppp), 24-26 (weeks), Spring 14" Pot or HB/7 Gallon/36 cm , 3-5 (ppp), 26-28 (weeks), Spring	Plants can be finished at lower or much higher temperatures, but do keep temperature above 55°F (13°C) for the fastest growth. Plant growth regulators or physical pinching are not recommended.
4"/4.5"/Quart/10 cm , 1 (ppp), 5-7 (weeks), Spring, PGR daminozide 1,500-2,500 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 3-5 (ppp), 8-10 (weeks), Spring, PGR daminozide 1,500-2,500 ppm Spray	Do not let plants wilt, as this will result in flower and bud drop.
4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring, PGR daminozide 2,500 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 5-6 (ppp), 8-9 (weeks), Spring, PGR daminozide 2,500 ppm Spray	Use of PGRs or growing outdoors will give a much more controlled plant. Be sure to water multi-seed pellets thoroughly and give light for best germination. Avoid both excessive watering and drought. Do not let plants wilt, as this will result in flower/bud drop.
4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring, PGR daminozide 2,500 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 5-6 (ppp), 8-9 (weeks), Spring, PGR daminozide 2,500 ppm Spray	Use of PGRs or growing outdoors will give a much more controlled plant. Be sure to water multi-seed pellets thoroughly and give light for best germination. Avoid both excessive watering and drought. Do not let plants wilt, as this will result in flower/bud drop.
4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring, PGR daminozide 2,500 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 5-6 (ppp), 8-9 (weeks), Spring, PGR daminozide 2,500 ppm Spray	Use of PGRs or growing outdoors will give a much more controlled plant. Be sure to water multi-seed pellets thoroughly and give light for best germination. Avoid both excessive watering and drought. Do not let plants wilt, as this will result in flower/bud drop.
5"/6"/1 Gallon/15 cm , 1 (ppp), 6-7 (weeks), Spring, PGR daminozide 1,000-1,500 ppm Spray 8"/2 Gallon/20 cm , 3 (ppp), 6-7 (weeks), Spring, PGR daminozide 1,000-1,500 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 4 (ppp), 6-7 (weeks), Spring, PGR daminozide 1,000-1,500 ppm Spray 12" Pot or HB/5 Gallon/30 cm , 4 (ppp), 6-7 (weeks), Spring, PGR daminozide 1,000-1,500 ppm Spray	Avoid excessive watering and drought. Do not let plants wilt, as this will result in bud drop.
4"/4.5"/Quart/10 cm , 1 (ppp), 6-8 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 6-8 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 3-4 (ppp), 6-8 (weeks), Spring	After transplant, if necessary, a very light spray of a tank mix of Cycocel 300 ppm and B-Nine 2,500 ppm can be used.
5"/6"/1 Gallon/15 cm , 1 (ppp), 7-9 (weeks), Late Spring 8"/2 Gallon/20 cm , 3 (ppp), 8-10 (weeks), Late Spring	Dragon Wing will flower faster under short day conditions. After transplant, use Bonzi 3 to 5 ppm spray for height control when needed. TRANSPLANTING: Due to directional stem arching, it is very important to position Dragon Wing plugs properly when placing more than one plug into baskets and containers for finishing. Plugs must be placed with the growing shoot facing outward, toward the outside of the container. This directional growth remains consistent as the plant matures.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
BEGONIA <i>Begonia x hybrida</i> Gryphon	288	(day) 65-75°F (18-24°C) (night) 62-67°F (17-19°C)	5.4-6.0 pH 1.0 mmhos/cm	Facultative Short Day Gryphon is a foliage plant, but plant could flower when grown under a daylength of 11 hours or shorter. Under daylength longer than 11 hours, flowering will be significantly delayed or plants will never flower.	
BEGONIA <i>Begonia interspecific</i> Megawatt™ F1 Series	288	(day) 65-70°F (18-21°C) (night) 60-65°F (16-18°C)	5.4-6.0 pH 1.0-1.2 mmhos/cm	Facultative Short Day	
BEGONIA (SPREADING) <i>Begonia interspecific</i> Hula™ F1 Series	288	(day) 65-70°F (18-21°C) (night) 60-65°F (16-18°C)	6.0-6.5 pH 1.0-1.2 mmhos/cm	Day Neutral	
BEGONIA (TUBEROUS) <i>Begonia x tuberosa</i> Marquee™ Picotee F1 Series	288	(day) 70-72°F (21-22°C) (night) 62-68°F (17-20°C)	5.5-5.8 pH 1.0-1.5 mmhos/cm	Obligate Long Day Maintain minimum of 14-hour photoperiod of light for active growth. A photoperiod of less than 12 hours will result in small single flowers and an uneven crop, and plants will form tubers.	
BEGONIA (TUBEROUS) <i>Begonia x tuberosa</i> Marquee™ Ruffled F1 Series	288	(day) 70-72°F (21-22°C) (night) 62-68°F (17-20°C)	5.5-5.8 pH 1.0-1.5 mmhos/cm	Obligate Long Day Maintain a minimum of 14-hour photoperiod of light for active growth. A photoperiod of less than 12 hours will result in small single flowers and an uneven crop, and plants will form tubers.	
BEGONIA (TUBEROUS) <i>Begonia x tuberosa</i> Sun Dancer™ F1 Series	288	(day) 70-72°F (21-22°C) (night) 62-68°F (17-20°C)	5.5-5.8 pH 1.0-1.5 mmhos/cm	Obligate Long Day Maintain a minimum of 14-hour photoperiod of light for active growth. A photoperiod of less than 12 hours will result in small single flowers and an uneven crop, and plants will form tubers.	
CELOSIA <i>Celosia cristata</i> Dracula	288	(day) 65-72°F (18-22°C) (night) 59-65°F (15-18°C)	5.8-6.2 pH 1.0-1.5 mmhos/cm	Facultative intermediate response. It will flower the fastest at daylengths from 12 to 14 hours. Daylengths shorter than 11 hours or longer than 15 hours will significantly delay flowering and can affect flower uniformity and form.	
CELOSIA <i>Celosia plumosa</i> First Flame™ Series	288	(day) 65-70°F (18-21°C) (night) 59-61°F (15-16°C)	5.8-6.2 pH 1.0-1.5 mmhos/cm	Facultative Short Day	
CELOSIA <i>Celosia plumosa</i> Ice Cream Series	288	(day) 65-70°F (18-21°C) (night) 59-61°F (15-16°C)	5.8-6.2 pH 1.0-1.5 mmhos/cm	Facultative Short Day	
CELOSIA FOLIAGE, SOL™ <i>Celosia argentea</i> Gekko Green	288	(day) 65-70°F (18-21°C) (night) 59-61°F (15-16°C)	5.8-6.2 pH 1.0-1.5 mmhos/cm	Facultative Short Day	
CELOSIA FOLIAGE, SOL™ <i>Celosia argentea</i> Lizzard Leaf	288	(day) 65-70°F (18-21°C) (night) 59-61°F (15-16°C)	5.8-6.2 pH 1.0-1.5 mmhos/cm	Facultative Short Day	
COLEUS <i>Solenostemon scutellarioides</i> Black Dragon	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
COLEUS <i>Solenostemon scutellarioides</i> Wizard® Series	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	

FINISHING PROGRAMS	KEY TIPS
4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Summer 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 5-6 (weeks), Summer 8"/2 Gallon/20 cm , 3 (ppp), 7-8 (weeks), Summer 12" Pot or HB/5 Gallon/30 cm , 3-4 (ppp), 9-11 (weeks), Summer	To avoid flowering as a foliage plant, grow under daylength longer than 11 hours.
5"/6"/1 Gallon/15 cm , 1 (ppp), 7-9 (weeks), Late Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 7-10 (weeks), Summer 12" Pot or HB/5 Gallon/30 cm , 3 (ppp), 9-11 (weeks), Summer	All Megawatt varieties flower faster under daylength of 12 hours or shorter. Longer daylength could delay flowering 4 to 7 days for all Megawatt varieties. If necessary, it is effective to spray paclobutrazol at 2 to 5 ppm, depending on environmental conditions, plant growing stage, and varieties for Megawatt plant size control. Repeat as needed.
306 Pack/1801 , 1 (ppp), 6-8 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 6-8 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 6-8 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 3-4 (ppp), 8-10 (weeks), Spring	Growers can use PGRs on Begonia Hula only when necessary. Hula responds well to a tank mix of daminozide (B-Nine/Alar) and Chlormequat (CCC). Daminozide (B-Nine/Alar) 2,500 ppm. Chlormequat (CCC) 150 ppm and 300 ppm. Paclobutrazol (Bonzi) also works, but should be used with caution, as it could cause stunting in plants. Under ADT of about 68°F/20°C, Paclobutrazol 2-3 ppm spray is recommended.
5"/6"/1 Gallon/15 cm , 1 (ppp), 11-13 (weeks), Spring, PGR chlormequat chloride 300-500 ppm Spray 12" Pot or HB/5 Gallon/30 cm , 4 (ppp), 14-15 (weeks), Spring, PGR chlormequat chloride 300-500 ppm Spray	Do not overwater plants to prevent root issues. Keep humidity low (between 40 to 60%) to avoid problems with powdery mildew. For height control, a negative DIF of 2 to 3 degrees is very effective to prevent stretching of plants. When using a negative DIF, less to no PGRs are needed.
5"/6"/1 Gallon/15 cm , 1 (ppp), 11-13 (weeks), Spring, PGR chlormequat chloride 300-500 ppm Spray 12" Pot or HB/5 Gallon/30 cm , 4 (ppp), 14-15 (weeks), Spring, PGR chlormequat chloride 300-500 ppm Spray	Do not overwater plants to prevent root issues. Keep humidity low (between 40 to 60%) to avoid problems with powdery mildew. For height control, a negative DIF of 2 to 3 degrees is very effective to prevent stretching of plants. When using a negative DIF, less to no PGRs are needed.
5"/6"/1 Gallon/15 cm , 1 (ppp), 9-10 (weeks), Spring, PGR chlormequat chloride 300-500 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 12-13 (weeks), Spring, PGR chlormequat chloride 300-500 ppm Spray 12" Pot or HB/5 Gallon/30 cm , 4 (ppp), 12-13 (weeks), Spring, PGR chlormequat chloride 300-500 ppm Spray	Do not overwater plants to prevent root issues. Keep humidity low (between 40 to 60%) to avoid problems with powdery mildew. For height control, a negative DIF of 2 to 3 degrees is very effective to prevent stretching of plants. When using a negative DIF, less to no PGRs are needed.
5"/6"/1 Gallon/15 cm , 1 (ppp), 6-9 (weeks), Spring	Flowers fastest between 12 to 14-hour days.
5"/6"/1 Gallon/15 cm , 1 (ppp), 7-10 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Summer	First Flame varieties do not need PGRs. If necessary, variety is responsive to B-Nine/Alar (daminozide) spray at 2,000 to 3,000 ppm (2.4 to 3.5 g/l, 85% formulation or 3.1 to 4.7 g/l 64% formulation) depending on weather. Keep media constantly moist to prevent premature flowering. First Flame Purple is around one week faster to flower compared to the rest of the series.
306 Pack/1801 , 1 (ppp), 6-8 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 7-9 (weeks), Spring 306 Pack/1801 , 1 (ppp), 5-7 (weeks), Summer 4"/4.5"/Quart/10 cm , 1 (ppp), 5-7 (weeks), Summer	Keep medium constantly moist and do not allow to dry out. No PGRs are needed. If needed, Celosia Ice Cream is responsive to B-Nine/Alar (daminozide) spray at 2,000 to 3,000 ppm (2.4 to 3.5 g/l, 85% formulation or 3.1 to 4.7 g/l 64% formulation) depending on weather.
5"/6"/1 Gallon/15 cm , 1 (ppp), 7-10 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Summer	Celosia Foliage do not need PGRs. Keep media constantly moist to prevent premature flowering. Foliage colour tends to be green when kept indoors, but more intense and turning more burgundy when the plant is left outdoors under higher light levels.
5"/6"/1 Gallon/15 cm , 1 (ppp), 7-10 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Summer	Celosia Foliage do not need PGRs. Keep media constantly moist to prevent premature flowering. Foliage colour tends to be green when kept indoors, but more intense and more burgundy-red when the plant is left outdoors under higher light levels.
Cell Pack , 1 (ppp), 5-6 (weeks), Spring	Ethephon can be applied to increase branching and control height.
306 Pack/1801 , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring	Ethephon can be applied to increase branching and control height.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
COLEUS, PREMIUM SHADE <i>Solenostemon scutellarioides</i> Kong Jr.™ Series	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
COLEUS, PREMIUM SHADE <i>Solenostemon scutellarioides</i> Kong® Series	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Chocolate Covered Cherry	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Chocolate Mint	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Coral Candy	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Crimson Gold	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Dark Chocolate	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Lime Delight	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Mighty Mosaic	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	

FINISHING PROGRAMS	KEY TIPS
306 Pack/1801 , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring	Do not pinch, as it will result in smaller leaves and delay crop time. Ethephon can be applied to increase branching and control height. Growth Regulators: Kong and Kong Jr. are well branched and have short internodes, but because of the large leaves, the plants tend to get too wide and need more space before they get too tall. Growth regulators are generally not needed. But if necessary, B-Nine/Alar (daminozide) 2,500 to 5,000 ppm (3.0 to 6.0 g/l 85% formulation or 4.0 to 8.0 g/l of 64% formulation) can be applied at 2 to 3 weeks after transplanting. Repeat if necessary.
306 Pack/1801 , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring	Ethephon can be applied to increase branching and control height. Do not pinch, as it will result in smaller leaves and delay crop time. Note: Kong Salmon Pink might appear dark bronze under some very low light conditions. Later in the season, and in Summer landscape, colour will appear Salmon Pink. Growth Regulators: Kong and Kong Jr. are well branched and have short internodes, but because of the large leaves, the plants tend to get too wide and need more space before they get too tall. Growth regulators are generally not needed. But if necessary, B-Nine/Alar (daminozide) 2,500 to 5,000 ppm (3.0 to 6.0 g/l 85% formulation or 4.0 to 8.0 g/l of 64% formulation) can be applied at 2 to 3 weeks after transplanting. Repeat if necessary.
306 Pack/1801 , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring	Excessive internode elongation under low light or crowding. Florel (ethephon) can be applied for promoting increased branching and height control if necessary. A rate of 300 ppm (7.69 ml/l 3.9% formulation or 0.63 ml/l of 48% formulation) at 2 to 3 weeks after transplanting is effective. Florel also delays flowering. Optional PGR: B-Nine/Alar (daminozide) 2,500 to 5,000 ppm (3.0 to 6.0 g/l 85% formulation or 4.0 to 8.0 g/l of 64% formulation) can be applied for height control at 2 to 3 weeks after transplanting. Repeat if necessary.
306 Pack/1801 , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring	Excessive internode elongation under low light or crowding. Florel (ethephon) can be applied for promoting increased branching and height control if necessary. A rate of 300 ppm (7.69 ml/l 3.9% formulation or 0.63 ml/l of 48% formulation) at 2 to 3 weeks after transplanting is effective. Florel also delays flowering. Optional PGR: B-Nine/Alar (daminozide) 2,500 to 5,000 ppm (3.0 to 6.0 g/l 85% formulation or 4.0 to 8.0 g/l of 64% formulation) can be applied for height control at 2 to 3 weeks after transplanting. Repeat if necessary.
306 Pack/1801 , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring	Excessive internode elongation under low light or crowding. Florel (ethephon) can be applied for promoting increased branching and height control if necessary. A rate of 300 ppm (7.69 ml/l 3.9% formulation or 0.63 ml/l of 48% formulation) at 2 to 3 weeks after transplanting is effective. Florel also delays flowering. Optional PGR: B-Nine/Alar (daminozide) 2,500 to 5,000 ppm (3.0 to 6.0 g/l 85% formulation or 4.0 to 8.0 g/l of 64% formulation) can be applied for height control at 2 to 3 weeks after transplanting. Repeat if necessary.
306 Pack/1801 , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring	Excessive internode elongation under low light or crowding. Florel (ethephon) can be applied for promoting increased branching and height control if necessary. A rate of 300 ppm (7.69 ml/l 3.9% formulation or 0.63 ml/l of 48% formulation) at 2 to 3 weeks after transplanting is effective. Florel also delays flowering. Optional PGR: B-Nine/Alar (daminozide) 2,500 to 5,000 ppm (3.0 to 6.0 g/l 85% formulation or 4.0 to 8.0 g/l of 64% formulation) can be applied for height control at 2 to 3 weeks after transplanting. Repeat if necessary.
306 Pack/1801 , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring	Excessive internode elongation under low light or crowding. Florel (ethephon) can be applied for promoting increased branching and height control if necessary. A rate of 300 ppm (7.69 ml/l 3.9% formulation or 0.63 ml/l of 48% formulation) at 2 to 3 weeks after transplanting is effective. Florel also delays flowering. Optional PGR: B-Nine/Alar (daminozide) 2,500 to 5,000 ppm (3.0 to 6.0 g/l 85% formulation or 4.0 to 8.0 g/l of 64% formulation) can be applied for height control at 2 to 3 weeks after transplanting. Repeat if necessary.
306 Pack/1801 , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring	Excessive internode elongation under low light or crowding. Florel (ethephon) can be applied for promoting increased branching and height control if necessary. A rate of 300 ppm (7.69 ml/l 3.9% formulation or 0.63 ml/l of 48% formulation) at 2 to 3 weeks after transplanting is effective. Florel also delays flowering. Optional PGR: B-Nine/Alar (daminozide) 2,500 to 5,000 ppm (3.0 to 6.0 g/l 85% formulation or 4.0 to 8.0 g/l of 64% formulation) can be applied for height control at 2 to 3 weeks after transplanting. Repeat if necessary.
306 Pack/1801 , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring	Excessive internode elongation under low light or crowding. Florel (ethephon) can be applied for promoting increased branching and height control if necessary. A rate of 300 ppm (7.69 ml/l 3.9% formulation or 0.63 ml/l of 48% formulation) at 2 to 3 weeks after transplanting is effective. Florel also delays flowering. Optional PGR: B-Nine/Alar (daminozide) 2,500 to 5,000 ppm (3.0 to 6.0 g/l 85% formulation or 4.0 to 8.0 g/l of 64% formulation) can be applied for height control at 2 to 3 weeks after transplanting. Repeat if necessary.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Pineapple Surprise	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Ruby Heart	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Sweet Paprika™	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Watermelon	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
COLORGRASS® ANEMANTHELE <i>Anemanthele lesssoniana</i> Sirocco	288	(day) 62-74°F (17-23°C) (night) 59-64°F (15-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
COLORGRASS® CAREX <i>Carex comans</i> Amazon Mist	288	(day) 66-74°F (19-23°C) (night) 64-66°F (18-19°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
COLORGRASS® CAREX <i>Carex comans</i> Phoenix Green	288	(day) 66-74°F (19-23°C) (night) 64-66°F (18-19°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
COLORGRASS® CAREX <i>Carex buchananii</i> Red Rooster	288	(day) 66-74°F (19-23°C) (night) 64-66°F (18-19°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
COLORGRASS® FESTUCA <i>Festuca cinerea/Festuca glauca</i> Festina	288	(day) 66-74°F (19-23°C) (night) 64-66°F (18-19°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
COLORGRASS® ISOLEPIS <i>Isolepis cernua</i> Live Wire	288	(day) 66-74°F (19-23°C) (night) 64-66°F (18-19°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
COLORGRASS® JUNCUS <i>Juncus inflexus</i> Blue Arrows	288	(day) 66-74°F (19-23°C) (night) 64-66°F (18-19°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
COLORGRASS® JUNCUS <i>Juncus tenuis</i> Blue Dart	288	(day) 62-74°F (17-23°C) (night) 59-64°F (15-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
COLORGRASS® JUNCUS <i>Juncus pallidus</i> Javelin	288	(day) 62-74°F (17-23°C) (night) 59-64°F (15-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
COLORGRASS® JUNCUS <i>Juncus effusus spiralis</i> Twister	288	(day) 66-74°F (19-23°C) (night) 59-64°F (15-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm		
COLORGRASS® LUZULA <i>Luzula nivea</i> Lucius	288	(day) 66-74°F (19-23°C) (night) 64-66°F (18-19°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	

FINISHING PROGRAMS	KEY TIPS
306 Pack/1801 , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring	Excessive internode elongation under low light or crowding. Florel (ethephon) can be applied for promoting increased branching and height control if necessary. A rate of 300 ppm (7.69 ml/l 3.9% formulation or 0.63 ml/l of 48% formulation) at 2 to 3 weeks after transplanting is effective. Florel also delays flowering. Optional PGR: B-Nine/Alar (daminozide) 2,500 to 5,000 ppm (3.0 to 6.0 g/l 85% formulation or 4.0 to 8.0 g/l of 64% formulation) can be applied for height control at 2 to 3 weeks after transplanting. Repeat if necessary.
306 Pack/1801 , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring	Excessive internode elongation under low light or crowding. Florel (ethephon) can be applied for promoting increased branching and height control if necessary. A rate of 300 ppm (7.69 ml/l 3.9% formulation or 0.63 ml/l of 48% formulation) at 2 to 3 weeks after transplanting is effective. Florel also delays flowering. Optional PGR: B-Nine/Alar (daminozide) 2,500 to 5,000 ppm (3.0 to 6.0 g/l 85% formulation or 4.0 to 8.0 g/l of 64% formulation) can be applied for height control at 2 to 3 weeks after transplanting. Repeat if necessary.
306 Pack/1801 , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-5 (weeks), Spring	Excessive internode elongation under low light or crowding. Florel (ethephon) can be applied for promoting increased branching and height control if necessary. A rate of 300 ppm (7.69 ml/l 3.9% formulation or 0.63 ml/l of 48% formulation) at 2 to 3 weeks after transplanting is effective. Florel also delays flowering. Optional PGR: B-Nine/Alar (daminozide) 2,500 to 5,000 ppm (3.0 to 6.0 g/l 85% formulation or 4.0 to 8.0 g/l of 64% formulation) can be applied for height control at 2 to 3 weeks after transplanting. Repeat if necessary.
Cell Pack , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring	Excessive internode elongation under low light or crowding. Florel (ethephon) can be applied for promoting increased branching and height control if necessary. A rate of 300 ppm (7.69 ml/l 3.9% formulation or 0.63 ml/l of 48% formulation) at 2 to 3 weeks after transplanting is effective. Florel also delays flowering. Optional PGR: B-Nine/Alar (daminozide) 2,500 to 5,000 ppm (3.0 to 6.0 g/l 85% formulation or 4.0 to 8.0 g/l of 64% formulation) can be applied for height control at 2 to 3 weeks after transplanting. Repeat if necessary.
306 Pack/1801 , 1 (ppp), 6-8 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 6-8 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 6-8 (weeks), Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 6-8 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 8-10 (weeks), Spring	Colour is better under cool and high light conditions. If temperature permits, it is best to produce Sirocco in outdoor conditions.
306 Pack/1801 , 1 (ppp), 9-10 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 10-11 (weeks), Spring	
306 Pack/1801 , 1 (ppp), 6-7 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 7-8 (weeks), Spring	
306 Pack/1801 , 1 (ppp), 8-9 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 8-9 (weeks), Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 9-10 (weeks), Spring	
306 Pack/1801 , 1 (ppp), 6-7 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 7-8 (weeks), Spring	
306 Pack/1801 , 1 (ppp), 6-7 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 6-7 (weeks), Spring	Sow uncovered at 65°F (18°C) for fastest and most uniform germination; prefers moist soil.
306 Pack/1801 , 1 (ppp), 6-7 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-8 (weeks), Spring	
306 Pack/1801 , 1 (ppp), 6-7 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-8 (weeks), Spring	Excellent substitute for Draecena Spike.
306 Pack/1801 , 1 (ppp), 5-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 6-7 (weeks), Spring	To prevent leaf bending, Bonzi 30 ppm spray can be used.
306 Pack/1801 , 1 (ppp), 6-7 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 7-8 (weeks), Spring	Do not bury plugs too deeply when transplanting.
306 Pack/1801 , 1 (ppp), 8-9 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 8-9 (weeks), Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 9-10 (weeks), Spring	Make sure plants don't get too wet.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
COLORGRASS® STIPA <i>Stipa tenuissima</i> Pony Tails	288	(day) 62-74°F (17-23°C) (night) 59-64°F (15-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
COSMOS <i>Cosmos bipinnatus</i> Antiquity	288	(day) 65-75°F (18-24°C) (night) 61-65°F (16-18°C)	5.8-6.2 pH 1.0-1.5 mmhos/cm	Facultative Short Day Cosmos flowers faster under short days. Daylength extension in the plug stage to more than 12 hours daylength may be used to prevent premature flowering.	
COSMOS <i>Cosmos sulphureus</i> Mandarin	288	(day) 60-64°F (16-18°C) (night) 57-60°F (14-16°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Facultative Short Day	
COSMOS <i>Cosmos bipinnatus</i> Sonata™ Series	288	(day) 64-68°F (18-20°C) (night) 60-64°F (16-18°C)	5.8-6.2 pH 1.0-1.5 mmhos/cm	Facultative Short Day Cosmos flowers faster under short days. Daylength extension in the plug stage to more than 12 hours daylength may be used to prevent premature flowering.	
CROSSANDRA <i>Crossandra infundibuliformis</i> Tropic Series	288	(day) 75-80°F (24-27°C) (night) 68-75°F (20-24°C)	5.8-6.5 pH 1.2-1.5 mmhos/cm	Day Neutral	
CUPHEA <i>Cuphea ramosissima</i> Pink Shimmer	288	(day) 70-75°F (21-24°C) (night) 65-68°F (18-20°C)	5.8-6.5 pH 1.2-1.5 mmhos/cm	Day Neutral	
CUPHEA <i>Cuphea procumbens</i> Sweet Talk™ F1 Series	288	(day) 70-78°F (21-26°C) (night) 60-70°F (16-21°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
DAHLIA <i>Dahlia x hybrida</i> Figaro™ Series	288	(day) 52-60°F (11-16°C) (night) 52-60°F (11-16°C)	5.8-6.2 pH 0.75-1.0 mmhos/cm	Obligate Long Day Ideal daylength for Figaro Dahlia is in between 12 and 14 hours. Short days will cause tuber formation. Too long days (16 hours) will keep the plants more vegetative and delay flower initiation.	
DIANTHUS <i>Dianthus chinensis</i> Coronet™ F1 Series	288	(day) 60-72°F (16-22°C) (night) 50-60°F (10-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
DIANTHUS <i>Dianthus barbatus</i> Dart™ F1 Series	288	(day) 65-75°F (18-24°C) (night) 43-60°F (6-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day Dart is lightly sensitive to daylength. Temperature and light intensity have higher impact on flowering timing/crop time than daylength.	
DIANTHUS <i>Dianthus barbatus</i> Dash™ F1 Series	288	(day) 65-75°F (18-24°C) (night) 40°F (4°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	

FINISHING PROGRAMS	KEY TIPS
306 Pack/1801 , 1 (ppp), 6-7 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 6-7 (weeks), Spring	Grow relatively dry and with low to moderate fertilisation, to have optimal upright growth.
4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring	
5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 6-7 (weeks), Summer	Don't grow too wet. This can cause root rot and black foliage. Stretching of plants can be avoided by using damonizide and chlormequat.
4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 7-8 (weeks), Spring	
4"/4.5"/Quart/10 cm , 1 (ppp), 10-11 (weeks), Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 10-11 (weeks), Spring	Best in tropical and semi-tropical climates. For cooler (Northern) growing areas, add 3 weeks to crop time or grow for Summer sales.
Cell Pack , 1 (ppp), 5-7 (weeks), Spring, PGR paclobutrazol 2 ppm Spray 306 Pack/1801 , 1 (ppp), 5-7 (weeks), Spring, PGR paclobutrazol 2 ppm Spray 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 6-8 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm , 3-4 (ppp), 9-10 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 4-5 (ppp), 10-11 (weeks), Spring	Drench with a fungicide at transplant. Use growing media with excellent aeration. It does not perform well in dense soils. Do not overwater the plants. Provide high light to avoid stretch. Low light levels will reduce branching.
4"/4.5"/Quart/10 cm , 1 (ppp), 8-9 (weeks), Spring, PGR paclobutrazol 1 ppm Drench 8"/2 Gallon/20 cm , 3 (ppp), 8-9 (weeks), Spring, PGR paclobutrazol 1 ppm Drench 4"/4.5"/Quart/10 cm , 1 (ppp), 8-9 (weeks), Summer, PGR paclobutrazol 2 ppm Drench 8"/2 Gallon/20 cm , 3 (ppp), 8-9 (weeks), Summer, PGR paclobutrazol 2 ppm Drench	Cuphea is very vigorous and temperature sensitive. Growing cool can reduce PGR needs. Conversely, growing above 73°F (23°C) may need higher PGR rates or additional applications. Adjust based on your conditions. No pinch needed; if you choose to pinch in young plant stage, follow with 2 to 3 treatments of paclobutrazol spray at 20 ppm. Flowering is delayed by ~3-10 days under LDs, depending on the variety and growing environment. Cuphea is sensitive to ethylene, so take proper precautions when shipping.
306 Pack/1801 , 1 (ppp), 5-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Spring	Very responsive to daminozide. Also responsive to day/night temperature differential (DIF), and plants are shorter with a negative DIF.
Cell Pack , 1 (ppp), 8-11 (weeks), Late Spring, PGR paclobutrazol 10 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 9-11 (weeks), Late Spring, PGR paclobutrazol 10 ppm Spray	Grows best under high light intensity ($DLI \geq 10 \text{ mol} \cdot \text{m}^{-2} \cdot \text{d}^{-1}$) and cool nights. Under low DLI and shorter daylength, crop time will be delayed by 2-3 weeks. Dianthus Coronet timing is also influenced by temperature. An increase in ADT from 60°F to 67°F decreased flowering time by 3 weeks. Strawberry and White Purple Eye are more compact and can use half the rate or no PGR.
4"/4.5"/Quart/10 cm , 1 (ppp), 8-11 (weeks), Spring, PGR paclobutrazol 0-5 ppm Spray 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 8-11 (weeks), Spring, PGR paclobutrazol 0-5 ppm Spray 8"/2 Gallon/20 cm , 3 (ppp), 9-12 (weeks), Spring, PGR paclobutrazol 0-5 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 6-9 (weeks), Autumn, PGR paclobutrazol 0-5 ppm Spray 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 6-9 (weeks), Autumn, PGR paclobutrazol 0-5 ppm Spray 8"/2 Gallon/20 cm , 3 (ppp), 7-10 (weeks), Autumn, PGR paclobutrazol 0-5 ppm Spray	Dart is a naturally compact plant. Responds well to paclobutrazol (bonzi) when necessary. Dart will benefit from being grown under high light levels for promoting plant branching and flower colour and quality. Plants grow bigger and fill pots easier under higher DLI. Providing high light will also keep plants compact and will reduce the need for PGRs. Plants will develop faster and will be earlier to flower when temperatures increase. Total crop time will be around 2 weeks faster when average day temperatures change from 62°F/16°C to 68°F/20°C. Dart can be grown cool in outdoor containers, field or in cool tunnels after transplant at 40°F/5°C night temperatures. Greenhouse production is possible as well. Avoid Summer finishing. Plants will develop very fast due to high temperatures and stay much more compact. Example: To fill a 5"/6"/Gallon/15 cm, 1-2 ppp are necessary. Autumn finishing is possible as well. Plants will finish faster because of higher average day temperatures. For southern areas with mild winters, Winter and early Spring production can be done as well. Lower average day temperatures increase flower shelf life. Pinching is not required or needed.
5"/6"/1 Gallon/15 cm , 1-3 (ppp), 9-10 (weeks), Summer, PGR paclobutrazol 20 ppm Spray 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 11-12 (weeks), Autumn, PGR paclobutrazol 20 ppm Spray	Dash dianthus has a naturally compact plant habit and good basal branching when compared to other barbatus-type dianthus, making it more suitable for container production. Provide 65 to 75°F (18 to 24°C) day temperatures and 60°F (15°C) night temperatures for the first 2 weeks of greenhouse production to establish the plants. Finish at 60 to 70°F (15 to 21°C) days, with nights in the low 50°Fs (11 to 12°C). Lower temperatures can be tolerated as plants mature.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
DIANTHUS <i>Dianthus barbatus interspecific</i> Dynasty F1 Series	288	(day) 60-72°F (16-22°C) (night) 50-60°F (10-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
DIANTHUS <i>Dianthus chinensis x barbatus</i> Floral Lace™ F1 Series	288	(day) 60-72°F (16-22°C) (night) 50-60°F (10-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
DIANTHUS <i>Dianthus chinensis x barbatus</i> Ideal Select™ F1 Series	288	(day) 60-72°F (16-22°C) (night) 50-60°F (10-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
DIANTHUS (INTERSPECIFIC) <i>Dianthus barbatus interspecific</i> Jolt™ F1 Series	288	(day) 65-75°F (18-24°C) (night) 60°F (16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day Will flower under all photoperiods but ~1 week earlier at 15 hours (LD) than 10 hours (SD). At a given photoperiod, plants flower up to 1.5 weeks faster under high daily light integral than low.	
DICHONDRA <i>Dichondra repens</i> Emerald Falls	288	(day) 65-75°F (18-24°C) (night) 62-65°F (17-18°C)	5.5-6.5 pH 1.2-1.5 mmhos/cm		
DICHONDRA <i>Dichondra argentea</i> Silver Falls	288	(day) 65-75°F (18-24°C) (night) 62-65°F (17-18°C)	5.5-6.5 pH 1.2-1.5 mmhos/cm		
DUSTY MILLER MARITIMA <i>Cineraria maritima/Senecio cineraria</i> Silverdust	288	(day) 60-65°F (16-18°C) (night) 55-58°F (13-14°C)	5.5-5.8 pH 1.2-1.5 mmhos/cm		
EUPHORBIA <i>Euphorbia graminea</i> Glamour F1	288 128	(day) 65-77°F (18-25°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral	
EUPHORBIA <i>Euphorbia graminea</i> Glitz F1	288 128	(day) 65-77°F (18-25°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral	
GAZANIA <i>Gazania rigens</i> New Day® F1 Series	288	(day) 65-70°F (18-21°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
GOMPHRENA <i>Gomphrena pulchella</i> Fireworks	406	(day) 65-75°F (18-24°C) (night) 63-66°F (17-19°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral	
HELICHRYSUM <i>Helichrysum microphyllum</i> (<i>Plectostachys serpyllifolia</i>) Silver Mist	288	(day) 65-75°F (18-24°C) (night) 62-65°F (17-18°C)	5.5-6.5 pH 1.5-2.0 mmhos/cm		

FINISHING PROGRAMS	KEY TIPS
306 Pack/1801 , 1 (ppp), 8-9 (weeks), Late Spring, PGR paclobutrazol 15-20 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 8-9 (weeks), Late Spring, PGR paclobutrazol 15-20 ppm Spray 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 8-9 (weeks), Late Spring, PGR paclobutrazol 15-20 ppm Spray	
Cell Pack , 1 (ppp), 8-10 (weeks), Late Spring, PGR paclobutrazol 15-20 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 8-10 (weeks), Late Spring, PGR paclobutrazol 15-20 ppm Spray	Height can be controlled by withholding fertiliser, especially phosphorus and ammonium-form nitrogen. Dianthus are responsive to day/night temperature differential (DIF), and are shorter with a negative DIF.
Cell Pack , 1 (ppp), 8-10 (weeks), Late Spring, PGR paclobutrazol 15-20 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 8-10 (weeks), Late Spring, PGR paclobutrazol 15-20 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 8-10 (weeks), Late Spring, PGR paclobutrazol 15-20 ppm Spray	
4"/4.5"/Quart/10 cm , 1 (ppp), 14-18 (weeks), Spring, PGR paclobutrazol 20 ppm Spray 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 14-18 (weeks), Spring, PGR paclobutrazol 20 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 11-13 (weeks), Summer, PGR paclobutrazol 20 ppm Spray 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 11-13 (weeks), Summer, PGR paclobutrazol 20 ppm Spray	Temperature and light intensity have greater impact on flowering, especially during Winter and early Spring. Jolt will benefit from being grown under high light levels and is a facultative/quantitative long-day plant. It can flower under different daylengths, but will take slightly longer to flower under short days than long days. A small percentage (up to 3%) of early off-types can be observed with Jolt dianthus at 4 to 5 weeks from sowing. These plants should be removed/discarded at transplant. Jolt Purple is more sensitive to paclobutrazol than others and the rate should be reduced to half of others.
4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Spring, PGR daminozide/chlormequat chloride tank mix 5,000/1,000 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 7-8 (weeks), Spring, PGR daminozide/chlormequat chloride tank mix 5,000/1,000 ppm Spray 12" Pot or HB/5 Gallon/30 cm , 5 (ppp), 7-9 (weeks), Spring, PGR daminozide/chlormequat chloride tank mix 5,000/1,000 ppm Spray	Grows best in warm and dry conditions. Use light feed. Rinse foliage after feeding to avoid salt burn.
4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring, PGR daminozide/chlormequat chloride tank mix 5,000/1,000 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 7-8 (weeks), Spring, PGR daminozide/chlormequat chloride tank mix 5,000/1,000 ppm Spray 12" Pot or HB/5 Gallon/30 cm , 5 (ppp), 7-9 (weeks), Spring, PGR daminozide/chlormequat chloride tank mix 5,000/1,000 ppm Spray	Grows best in warm and dry conditions. Use light feed. Rinse foliage after feeding to avoid salt burn. Higher light levels result in foliage that is more silver in colour and shorter internodes.
4"/4.5"/Quart/10 cm , 1 (ppp), 6-8 (weeks), Spring, PGR daminozide 5,000 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 6-8 (weeks), Spring, PGR daminozide 5,000 ppm Spray	Pinching not recommended. For height control, use daminozide as needed.
5"/6"/1 Gallon/15 cm , 1-2 (ppp), 5-8 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 8"/2 Gallon/20 cm , 2 (ppp), 6-8 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray	Do not grow plants at temperatures below 62°F (16°C). Stretched plugs can be planted deep for better habit management. Pinching is not necessary. Daminozide may delay full flowering, but it is helpful early on in developing good branching. If starting with a daminozide spray for habit management, consider a paclobutrazol spray (10 ppm) or a low rate drench (1-2 ppm) to finish. Warmer temperatures and higher light levels can significantly reduce crop times.
4"/4.5"/Quart/10 cm , 1 (ppp), 5-8 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 5-8 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 6-8 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray	Do not grow plant at temperature below 62°F (16°C). Stretched plugs can be planted deep for better habit management. Pinching is not necessary. If starting with a daminozide spray for habit control, consider a paclobutrazol spray or low rate drench to finish. Daminozide may delay full flowering, but is helpful early on in developing good branching. Warmer temperatures and higher light will significantly reduce crop times.
306 Pack/1801 , 1 (ppp), 8-9 (weeks), Late Spring, PGR daminozide 3,000 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 8-9 (weeks), Late Spring, PGR daminozide 3,500 ppm Spray 306 Pack/1801 , 1 (ppp), 7-8 (weeks), Summer, PGR daminozide 3,000 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 7-8 (weeks), Summer, PGR daminozide 3,500 ppm Spray	Crop time can be influenced by light levels; i.e., when grown in areas with low light levels or during period of low light intensity, crop time could be approx. 3 weeks longer. Plant Growth Regulators: If needed, use B-Nine/Alar (daminozide) at 3,500 ppm (4.2 g/l of 85% formulation or 5.6 g/l of 64% formulation) to tone the crop. One application at 2 to 3 weeks after transplant will be sufficient.
5"/6"/1 Gallon/15 cm , 1 (ppp), 8-9 (weeks), Spring, PGR paclobutrazol 4-10 ppm Drench 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 8-9 (weeks), Spring, PGR paclobutrazol 4-10 ppm Drench	May be grown cooler (50°F/10°C minimum) with additional 2 to 3 weeks crop time. High light, spacing and cooler temperatures will reduce stretching. A paclobutrazol drench at 4 to 10 ppm, 2 to 3 weeks after transplant, is commonly effective in controlling stretch. Paclobutrazol sprays may follow the drench to maintain plant structure.
306 Pack/1801 , 1 (ppp), 8-9 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 8-9 (weeks), Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 9-10 (weeks), Spring	Do not overwater and avoid watering plants late in the day, as constant wet foliage may make the plants susceptible to Botrytis. Does not require pinching.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
HEUCHERA <i>Heuchera sanguinea</i> Heucherette™ Series	128 72	(day) 50-65°F (10-18°C) (night) 50-55°F (10-13°C)	6.0-6.8 pH 1.4-1.8 mmhos/cm	Day Neutral	
HIBISCUS <i>Hibiscus acetosella</i> Mahogany Splendor	288	(day) 65-70°F (18-21°C) (night) 62-67°F (17-19°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Flower initiation occurs with daylength of 12 hours or shorter.	
IMPATIENS <i>Impatiens walleriana</i> Beacon® F1 Series	288	(day) 70-75°F (21-24°C) (night) 62-68°F (17-20°C)	6.2-6.5 pH 0.75-1.0 mmhos/cm	Day Neutral	
IMPATIENS (INTERSPECIFIC) <i>Impatiens hybrida</i> Solarscape® F1 Series	288 128	(day) 68-75°F (20-24°C) (night) 60-68°F (16-20°C)	5.8-6.2 pH 0.5-0.75 mmhos/cm	Day Neutral Light Recommendations: Recommended DLI of 10 or greater moles. In areas of low DLI, less than 10 moles, supplemental lighting is beneficial to increase quantity and speed of flowering. In areas of low relative humidity, less than 30%, shading is recommended.	
IMPATIENS (INTERSPECIFIC) <i>Impatiens hybrida</i> Solarscape® XL F1 Series	288 128	(day) 68-75°F (20-24°C) (night) 60-68°F (16-20°C)	5.8-6.2 pH 0.5-0.75 mmhos/cm	Day Neutral Light Recommendations: Recommended DLI of 10 or greater moles. In areas of low DLI, less than 10 moles, supplemental lighting is beneficial to increase quantity and speed of flowering. In areas of low relative humidity, less than 30%, shading is recommended.	
ISOTOMA <i>Isotoma hybrida</i> Gemini F1 Series	288	(day) 60-66°F (16-19°C) (night) 54-57°F (12-14°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
LOBELIA <i>Lobelia erinus</i> Crystal Palace	288	(day) 66-72°F (19-22°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
LOBELIA <i>Lobelia erinus</i> Regatta Series	288	(day) 66-72°F (19-22°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
LOBELIA <i>Lobelia erinus</i> Riviera Series	288	(day) 66-72°F (19-22°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
MARIGOLD (AFRICAN) <i>Tagetes erecta</i> Lanna Lace F1	288	(day) 65-68°F (18-20°C) (night) 60-62°F (16-17°C)	6.2-6.8 pH 1.0-1.5 mmhos/cm	Facultative Short Day Will flower more quickly when the daylength is 12 hours or shorter. When grown at daylength longer than 12 hours, it will take an additional 10 to 14 days to flower.	

FINISHING PROGRAMS	KEY TIPS
4"/4.5"/Quart/10 cm , 1 (ppp), 12-16 (weeks), Late Spring 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 12-16 (weeks), Late Spring 8"/2 Gallon/20 cm , 3-4 (ppp), 12-16 (weeks), Late Spring	TEMPERATURE: Growing under temperatures below 60°F/15°C for the first 6 weeks after transplanting is essential for uniformity of flowering. Warmer temperatures could significantly delay flowering and cause flowers to not be uniform. MOISTURE: Heuchera prefer average moisture levels. They do not tolerate overly wet or overly dry conditions. Do not allow the plants to dry out between waterings. Under high light intensities, marginal leaf burn may occur if the plants are grown too dry, with too low of fertilisation. PGRs are not needed. Grow cool and ensure an active climate.
4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Spring, PGR daminozide/chlormequat chloride tank mix 2,500/300 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Spring, PGR paclobutrazol 5-10 ppm Spray 5"/6"/1 Gallon/15 cm , 1 (ppp), 6-8 (weeks), Spring, PGR daminozide/chlormequat chloride tank mix 2,500/300 ppm Spray 5"/6"/1 Gallon/15 cm , 1 (ppp), 6-8 (weeks), Spring, PGR paclobutrazol 5-10 ppm Spray 8"/2 Gallon/20 cm , 1 (ppp), 6-8 (weeks), Spring, PGR daminozide/chlormequat chloride tank mix 2,500/300 ppm Spray 8"/2 Gallon/20 cm , 1 (ppp), 6-8 (weeks), Spring, PGR paclobutrazol 5-10 ppm Spray	A soft pinch will promote branching. Pinch about 2 weeks after transplant, leaving 4-5 nodes. Do not pinch too hard, as it may result in an undesirable habit.
Cell Pack , 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm , 3-5 (ppp), 8-10 (weeks), Spring	Impatiens will respond to daminozide, paclobutrazol and uniconazol. Monitoring of water and fertilisation can help with controlling plant growth and vigour.
306 Pack/1801 , 1 (ppp), 7-8 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 8-9 (weeks), Spring 8"/2 Gallon/20 cm , 1-3 (ppp), 9-10 (weeks), Spring	Temperature Recommendations: Minimum: 60°F/16°C • Maximum: 85°F/29°C Lowering ADT by 2°F/1°C will delay flowering by 2 to 4 days, with an even longer delay at cooler ADTs. Moisture Recommendations: Plants are well controlled with water and fertilisation management; growing dry with less to no PGRs results in plants that are faster to establish in the garden. PGR Recommendations: 10 to 14 days after transplant to finish container, repeating as needed. Avoid over-application of PGRs, as this may result in plant stunting or slow growing-on. If growing in dry conditions, the lowest rates of PGRs are recommended. Solarscape Magenta Bliss, Orange Burst, Salmon Punch, White Shimmer and White Pearl: paclobutrazol 0.25 ppm drench OR paclobutrazol 5-10 ppm spray.
306 Pack/1801 , 1 (ppp), 7-8 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 8-9 (weeks), Spring 8"/2 Gallon/20 cm , 1-3 (ppp), 9-10 (weeks), Spring	Temperature Recommendations: Minimum: 60°F/16°C • Maximum: 85°F/29°C Lowering ADT by 2°F/1°C will delay flowering by 2 to 4 days, with an even longer delay at cooler ADTs. Moisture Recommendations: Plants are well controlled with water and fertilisation management; growing dry with less to no PGRs results in plants that are faster to establish in the garden. PGR Recommendations: 10 to 14 days after transplant to finish container, repeating as needed. Avoid over-application of PGRs, as this may result in plant stunting or slow growing-on. If growing in dry conditions, the lowest rates of PGRs are recommended. Salmon Glow recommendations: paclobutrazol 0.5 ppm drench OR paclobutrazol 10 ppm spray.
306 Pack/1801 , 1 (ppp), 9-10 (weeks), Spring, PGR daminozide 2,500-3,500 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 9-12 (weeks), Spring, PGR daminozide 2,500-3,500 ppm Spray 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 12-14 (weeks), Spring, PGR daminozide 2,500-3,500 ppm Spray	Prefers to grow in cooler conditions. Warmer temperatures above 70°F (21°C) could delay or inhibit flowering.
Cell Pack , 1 (ppp), 8-9 (weeks), Spring	Lighting plants when days are shorter than 12 hours speeds flowering. Light shading helps to produce a better crop when plants are growing under hot weather and long days in late Spring.
10" Pot or HB/3 Gallon/25 cm , 5-7 (ppp), 8-10 (weeks), Spring, PGR daminozide 3,000-5,000 ppm Spray	Lobelias flower more freely when daylength is longer than 12 hours. Lighting plants when days are shorter than 12 hours speeds flowering. Light shading helps to produce a better crop when plants are growing under hot weather and long days in late Spring.
Cell Pack , 1 (ppp), 5-6 (weeks), Spring, PGR daminozide 3,000-5,000 ppm Spray	Lobelias flower more freely when daylength is longer than 12 hours. Lighting plants when days are shorter than 12 hours speeds flowering. Light shading helps to produce a better crop when plants are growing under hot weather and long days in late Spring.
306 Pack/1801 , 1 (ppp), 5-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Spring 306 Pack/1801 , 1 (ppp), 7-8 (weeks), Summer 4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Summer	Maintain soil pH of 6.2 to 6.8 to avoid iron toxicity. Plant Growth Regulators: PGRs are not required when grown under short days, since plants will finish naturally shorter. Treat with PGRs when grown under long days. Daminozide at 5,000 ppm applied twice as a foliar spray can control the plant growth. In northwestern Europe, use daminozide at 1,300 to 2,000 ppm.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
MARIGOLD (AFRICAN) <i>Tagetes erecta</i> Marvel II™ F1 Series	288	(day) 65-68°F (18-20°C) (night) 60-62°F (16-17°C)	6.2-6.5 pH 1.2-1.5 mmhos/cm	Facultative Short Day Will flower more quickly when the daylength is 12 hours or shorter. When grown at daylength longer than 12 hours, it will take an additional 10 to 14 days to flower.	
MARIGOLD (AFRICAN) <i>Tagetes erecta</i> Taishan® F1 Series	288	(day) 65-68°F (18-20°C) (night) 60-62°F (16-17°C)	6.2-6.5 pH 1.2-1.5 mmhos/cm	Facultative Short Day Will flower more quickly when the daylength is 12 hours or shorter. When grown at daylength longer than 12 hours, it will take an additional 10 to 14 days to flower.	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Bonanza™ Series	288	(day) 65-68°F (18-20°C) (night) 60-62°F (16-17°C)	6.2-6.5 pH 1.0-1.5 mmhos/cm	Facultative Short Day	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Durango® Series	288	(day) 65-68°F (18-20°C) (night) 60-62°F (16-17°C)	6.2-6.5 pH 1.0-1.5 mmhos/cm	Facultative Short Day	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Fireball	288	(day) 65-68°F (18-20°C) (night) 60-62°F (16-17°C)	6.2-6.5 pH 1.0-1.5 mmhos/cm	Facultative Short Day	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Flamenco	288	(day) 65-68°F (18-20°C) (night) 60-62°F (16-17°C)	6.2-6.5 pH 1.0-1.5 mmhos/cm	Facultative Short Day	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Hot Pak™ Series	288	(day) 68-85°F (20-29°C) (night) 64-70°F (18-21°C)	6.2-6.5 pH 1.0-1.5 mmhos/cm	Facultative Short Day	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Janie Series	288	(day) 65-68°F (18-20°C) (night) 60-62°F (16-17°C)	6.2-6.5 pH 1.0-1.5 mmhos/cm	Facultative Short Day	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Strawberry Blonde	288	(day) 65-68°F (18-20°C) (night) 60-62°F (16-17°C)	6.2-6.5 pH 1.0-1.5 mmhos/cm	Facultative Short Day	
NEMESIA <i>Nemesis strumosa</i> Sundrops Mixture	288	(day) 60-65°F (16-18°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
ORNAMENTAL MILLET <i>Pennisetum glaucum</i> Copper Prince F1	128	(day) 68-85°F (20-29°C) (night) 64-66°F (18-19°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm		
ORNAMENTAL MILLET <i>Pennisetum glaucum</i> Jade Princess F1	128	(day) 68-85°F (20-29°C) (night) 64-66°F (18-19°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm		
ORNAMENTAL MILLET <i>Pennisetum glaucum</i> Jester F1	128	(day) 68-85°F (20-29°C) (night) 64-66°F (18-19°C)	5.5-6.5 pH 1.5-2.0 mmhos/cm		

FINISHING PROGRAMS	KEY TIPS
4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Summer	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity. Plant Growth Regulators: PGRs are not required when grown under short days, since plants will finish naturally shorter. Treat with PGRs when grown under long days. Daminozide at 5,000 ppm applied twice as a foliar spray can control the plant growth. In northwestern Europe, use daminozide at 1,300 to 2,000 ppm.
306 Pack/1801 , 1 (ppp), 5-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Spring 306 Pack/1801 , 1 (ppp), 7-8 (weeks), Summer 4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Summer	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity. Plant Growth Regulators: PGRs are not required when grown under short days, since plants will finish naturally shorter. Treat with PGRs when grown under long days. Daminozide at 5,000 ppm applied twice as a foliar spray can control the plant growth. In northwestern Europe, use daminozide at 1,300 to 2,000 ppm.
Cell Pack , 1 (ppp), 3-4 (weeks), Spring	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity.
Cell Pack , 1 (ppp), 4 (weeks), Spring	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity.
306 Pack/1801 , 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm , 5-6 (ppp), 4-6 (weeks), Spring	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity. Quarts and multi-planted containers with several flowers open provide maximum contrast as blooms mature from red to orange to bronze.
306 Pack/1801 , 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm , 5-6 (ppp), 4-6 (weeks), Spring	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity.
Cell Pack , 1 (ppp), 3-4 (weeks), Spring	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity. Hot Pak is bred to grow and flower under higher temperatures and humidity than other French Marigolds; thus, a wider range of finishing conditions is possible.
Cell Pack , 1 (ppp), 3-4 (weeks), Spring	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity.
306 Pack/1801 , 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm , 5-6 (ppp), 4-6 (weeks), Spring	Maintain soil pH of 6.2 to 6.4 to avoid iron toxicity. Quarts and multi-planted containers with several blooms open provide maximum contrast as blooms mature from rose to orange to straw colour.
4"/4.5"/Quart/10 cm , 1 (ppp), 8-9 (weeks), Spring	Grow cool, at an optimum temperature of 55°F (13°C).
5"/6"/1 Gallon/15 cm , 1-2 (ppp), 12-14 (weeks), Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 9-10 (weeks), Autumn	Plants that are rootbound or stressed due to drought or nutrient deficiency will not perform well. Do not grow below 60°F (16°C). Low temperatures can cause foliage colour to become chlorotic or cause necrosis and flower spike bending. High light results in better basal tillering and stronger stems. When seeds are sown directly to final pot, apply a paclobutrazol drench 6 to 8 ppm at 4 weeks after sow, and repeat if needed 10 days later. When transplanting plugs, use a 3 to 5 ppm paclobutrazol drench at 1 week after transplant. Small pot crop times are based on 68°F (20°C) daily average temperature and saleable foliage plants without flower spikes.
4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 12-14 (weeks), Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 9-10 (weeks), Autumn	Plants that are rootbound or stressed due to drought or nutrient deficiency will not perform well. Do not grow below 60°F (16°C). Low temperatures can cause foliage colour to become chlorotic or cause necrosis and flower spike bending. Jade Princess is especially cold sensitive. High light results in better basal tillering and stronger stems. When seeds are sown directly to final pot, apply a paclobutrazol drench 6 to 8 ppm at 4 weeks after sow, and repeat if needed 10 days later. When transplanting plugs, use a 3 to 5 ppm paclobutrazol drench at 1 week after transplant. Small pot crop times are based on 68°F (20°C) daily average temperature and saleable foliage plants without flower spikes.
5"/6"/1 Gallon/15 cm , 3 (ppp), 11-13 (weeks), Spring, PGR paclobutrazol 3-5 ppm Drench 5"/6"/1 Gallon/15 cm , 3 (ppp), 9-10 (weeks), Autumn	Plants that are rootbound or stressed due to drought or nutrient deficiency will not perform well. Do not grow below 60°F (16°C). Low temperatures can cause foliage colour to become chlorotic or cause necrosis and flower spike bending. High light results in better basal tillering and stronger stems. When seeds are sown directly to final pot, apply a paclobutrazol drench 6 to 8 ppm at 4 weeks after sow, and repeat if needed 10 days later. When transplanting plugs, use a 3 to 5 ppm paclobutrazol drench at 1 week after transplant. Small pot crop times are based on 68°F (20°C) daily average temperature and saleable foliage plants without flower spikes.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
ORNAMENTAL MILLET <i>Pennisetum glaucum</i> Purple Baron F1	128	(day) 68-85°F (20-29°C) (night) 64-66°F (18-19°C)	5.5-6.5 pH 1.5-2.0 mmhos/cm		
ORNAMENTAL MILLET <i>Pennisetum glaucum</i> Purple Majesty	128	(day) 68-85°F (20-29°C) (night) 64-66°F (18-19°C)	5.5-6.5 pH 1.5-2.0 mmhos/cm		
ORNAMENTAL OREGANO <i>Origanum x hybrida</i> Kirigami	288	(day) 65-68°F (18-20°C) (night) 60-65°F (16-18°C)	5.8-6.5 pH 1.2-1.5 mmhos/cm	Obligate Long Day Long day required, critical daylength 14 hours.	
OSTEOSPERMUM <i>Osteospermum ecklonis</i> Akila® F1 Series	288 105	(day) 60-70°F (16-21°C) (night) 50-55°F (10-13°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral	
PANSY <i>Viola x wittrockiana</i> Frizzle Sizzle F1 Series	288	(day) 60-70°F (16-21°C) (night) 50-55°F (10-13°C)	5.5-5.8 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
PANSY <i>Viola x wittrockiana</i> Matrix® F1 Series	288	(day) 60-70°F (16-21°C) (night) 50-55°F (10-13°C)	5.5-5.8 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
PANSY <i>Viola x wittrockiana</i> Panola® XP F1 Series	288	(day) 60-70°F (16-21°C) (night) 50-55°F (10-13°C)	5.5-5.8 pH 1.5-2.0 mmhos/cm	Facultative Long Day	

FINISHING PROGRAMS	KEY TIPS
5"/6"/1 Gallon/15 cm, 3 (ppp), 11-13 (weeks), Spring, PGR paclobutrazol 3-5 ppm Drench 5"/6"/1 Gallon/15 cm, 3 (ppp), 9-10 (weeks), Autumn	Plants that are rootbound or stressed due to drought or nutrient deficiency will not perform well. Do not grow below 60°F (16°C). Low temperatures can cause foliage colour to become chlorotic or cause necrosis and flower spike bending. High light results in better basal tillering and stronger stems. When seeds are sown directly to final pot, apply a paclobutrazol drench 6 to 8 ppm at 4 weeks after sow, and repeat if needed 10 days later. When transplanting plugs, use a 3 to 5 ppm paclobutrazol drench at 1 week after transplant. Small pot crop times are based on 68°F (20°C) daily average temperature and saleable foliage plants without flower spikes.
5"/6"/1 Gallon/15 cm, 3 (ppp), 11-13 (weeks), Spring, PGR paclobutrazol 3-5 ppm Drench 5"/6"/1 Gallon/15 cm, 3 (ppp), 9-10 (weeks), Autumn	Plants that are rootbound or stressed due to drought or nutrient deficiency will not perform well. Do not grow below 60°F (16°C). Low temperatures can cause foliage colour to become chlorotic or cause necrosis and flower spike bending. High light results in better basal tillering and stronger stems. When seeds are sown directly to final pot, apply a paclobutrazol drench 6 to 8 ppm at 4 weeks after sow, and repeat if needed 10 days later. When transplanting plugs, use a 3 to 5 ppm paclobutrazol drench at 1 week after transplant. Small pot crop times are based on 68°F (20°C) daily average temperature and saleable foliage plants without flower spikes.
4"/4.5"/Quart/10 cm, 1 (ppp), 10-12 (weeks), Late Spring, PGR daminozide 1,500-2,000 ppm Spray 5"/6"/1 Gallon/15 cm, 1 (ppp), 11-13 (weeks), Late Spring, PGR daminozide 1,500-2,000 ppm Spray 10" Pot or HB/3 Gallon/25 cm, 3-5 (ppp), 12-13 (weeks), Late Spring, PGR daminozide 1,500-2,000 ppm Spray 4"/4.5"/Quart/10 cm, 1 (ppp), 9-10 (weeks), Summer, PGR daminozide 1,500-2,000 ppm Spray 5"/6"/1 Gallon/15 cm, 1 (ppp), 9-11 (weeks), Summer, PGR daminozide 1,500-2,500 ppm Spray 10" Pot or HB/3 Gallon/25 cm, 3-5 (ppp), 10-12 (weeks), Summer, PGR daminozide 2,000-2,500 ppm Spray	Needs an active growing climate, grow on dry side, with higher light levels. Best to grow indoors, if you have frequent rain. Apply low to moderate fertilisation and moderate irrigation. Let well-drained media dry between watering. Cannot stand wet conditions; will result in stem and root rot. The bracts will develop much deeper purple colour when plants are exposed to high light (12 to 15 mol·m⁻²·d⁻¹) and cool night conditions (lower than 50°F/10°C). If you have dry climate, grow outside for deepest purple bract colour. Kirigami reacts well to daminozide, and it should be used at lower concentrations with multiple applications to avoid stunting. Avoid using daminozide once colour is starting on the bracts, to prevent bleaching. With its versatile use, there is no specific number of PGR applications. It is easy to mold to your desired look or container size.
306 Pack/1801, 1 (ppp), 10-12 (weeks), Spring, PGR daminozide/chlormequat chloride tank mix 2,500/500 ppm Spray 4"/4.5"/Quart/10 cm, 1 (ppp), 10-12 (weeks), Spring, PGR daminozide/chlormequat chloride tank mix 2,500/500 ppm Spray 5"/6"/1 Gallon/15 cm, 1-3 (ppp), 12-14 (weeks), Spring, PGR daminozide/chlormequat chloride tank mix 2,500/500 ppm Spray 306 Pack/1801, 1 (ppp), 7-9 (weeks), Autumn, PGR daminozide/chlormequat chloride tank mix 2,500/500 ppm Spray 4"/4.5"/Quart/10 cm, 1 (ppp), 7-9 (weeks), Autumn, PGR daminozide/chlormequat chloride tank mix 2,500/500 ppm Spray 5"/6"/1 Gallon/15 cm, 1-3 (ppp), 9-11 (weeks), Autumn, PGR daminozide/chlormequat chloride tank mix 2,500/500 ppm Spray	Supplemental lighting will reduce days to flower. Plants grown under high light and cool conditions may not require PGRs. If needed, apply daminozide/chlormequat chloride 2,500/500 ppm tank mix 2 weeks after transplant. Alternatively, flurprimidol at 10 to 15 ppm spray applied once after transplant will give adequate control.
5"/6"/1 Gallon/15 cm, 3 (ppp), 6-8 (weeks), Early Spring, PGR daminozide/chlormequat chloride tank mix 1,500/150-2,500/250 ppm Spray 10" Pot or HB/3 Gallon/25 cm, 7-9 (ppp), 6-8 (weeks), Early Spring, PGR daminozide/chlormequat chloride tank mix 1,500/150-2,500/250 ppm Spray 5"/6"/1 Gallon/15 cm, 3 (ppp), 4-6 (weeks), Autumn, PGR daminozide/chlormequat chloride tank mix 2,500/250-5,000/500 ppm Spray 10" Pot or HB/3 Gallon/25 cm, 7-9 (ppp), 4-6 (weeks), Autumn, PGR daminozide/chlormequat chloride tank mix 2,500/250-5,000/500 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions. If growing frost-free (northern overwinter culture from Autumn transplant), plan for crop times of 16 to 18 weeks from transplant to finish. For maximum ruffled edge, schedule for late Autumn, Winter and Spring programs. Heat reduces the ruffled edge and colour contrast.
Cell Pack, 1 (ppp), 4-5 (weeks), Autumn, PGR daminozide/chlormequat chloride tank mix 2,500/250-5,000/500 ppm Spray Cell Pack, 1 (ppp), 4-5 (weeks), Autumn, PGR paclobutrazol 0.125 ppm Drench 4"/4.5"/Quart/10 cm, 1 (ppp), 5-6 (weeks), Autumn, PGR daminozide/chlormequat chloride tank mix 2,500/250-5,000/500 ppm Spray 4"/4.5"/Quart/10 cm, 1 (ppp), 5-6 (weeks), Autumn, PGR paclobutrazol 0.125 ppm Drench 10" Pot or HB/3 Gallon/25 cm, 7-9 (ppp), 4-5 (weeks), Autumn, PGR daminozide/chlormequat chloride tank mix 2,500/250-5,000/500 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions.
Cell Pack, 1 (ppp), 5-6 (weeks), Early Spring, PGR daminozide/chlormequat chloride tank mix 1,500/150-2,500/250 ppm Spray 4"/4.5"/Quart/10 cm, 1 (ppp), 5-6 (weeks), Early Spring, PGR daminozide/chlormequat chloride tank mix 1,500/150-2,500/250 ppm Spray Cell Pack, 1 (ppp), 3-4 (weeks), Autumn, PGR daminozide/chlormequat chloride tank mix 2,500/500-5,000/500 ppm Spray Cell Pack, 1 (ppp), 3-4 (weeks), Autumn, PGR paclobutrazol 0.1-0.125 ppm Drench 4"/4.5"/Quart/10 cm, 1 (ppp), 4-5 (weeks), Autumn, PGR daminozide/chlormequat chloride tank mix 2,500/500-5,000/500 ppm Spray 4"/4.5"/Quart/10 cm, 1 (ppp), 3-4 (weeks), Autumn, PGR paclobutrazol 0.1-0.125 ppm Drench	Adjust PGR rates and frequency of application depending on local conditions. If growing frost-free (northern overwinter culture from Autumn transplant), plan for crop times of 16 to 18 weeks from transplant to finish.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
PANSY <i>Viola x wittrockiana</i> Promise® F1 Series	288	(day) 60-70°F (16-21°C) (night) 50-55°F (10-13°C)	5.5-5.8 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
PANSY <i>Viola x wittrockiana</i> Spring Matrix™ F1 Series	288	(day) 60-70°F (16-21°C) (night) 50-55°F (10-13°C)	5.5-5.8 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
PANSY (SPREADING) <i>Viola x wittrockiana</i> Cool Wave® F1 Series	288	(day) 62-70°F (17-21°C) (night) 55-60°F (13-16°C)	5.5-5.8 pH 1.2-1.5 mmhos/cm	Facultative Long Day	
PANSY (SPREADING) <i>Viola x wittrockiana</i> Top Wave™ F1 Series	288	(day) 62-70°F (17-21°C) (night) 55-60°F (13-16°C)	5.5-5.8 pH 1.2-1.5 mmhos/cm	Facultative Long Day	
PENTAS <i>Pentas lanceolata</i> Butterfly™ F1 Series	288	(day) 72-80°F (22-27°C) (night) 65-68°F (18-20°C)	6.5-6.8 pH 1.2-1.5 mmhos/cm	Day Neutral	
PENTAS <i>Pentas lanceolata</i> Glitterati™ F1 Series	288	(day) 72-80°F (22-27°C) (night) 65-68°F (18-20°C)	6.5-6.8 pH 1.2-1.5 mmhos/cm	Day Neutral	
PENTAS <i>Pentas lanceolata</i> Lucky Star® F1 Series	288	(day) 72-80°F (22-27°C) (night) 62-65°F (17-18°C)	6.5-6.8 pH 1.2-1.5 mmhos/cm	Day Neutral	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Black Pearl	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm		
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Calico F1	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm		
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Midnight Fire	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm		
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Purple Flash	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm		

FINISHING PROGRAMS	KEY TIPS
Cell Pack , 1 (ppp), 6-7 (weeks), Early Spring, PGR daminozide/chlormequat chloride tank mix 1,500/500 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Early Spring, PGR daminozide/chlormequat chloride tank mix 1,500/500 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 7-9 (ppp), 6-7 (weeks), Early Spring, PGR daminozide/chlormequat chloride tank mix 1,500/500 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions. If growing frost-free (northern overwinter culture from Autumn transplant), plan for crop times of 17 to 18 weeks from transplant to finish.
Cell Pack , 1 (ppp), 6-7 (weeks), Early Spring, PGR daminozide/chlormequat chloride tank mix 1,500/500 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Early Spring, PGR daminozide/chlormequat chloride tank mix 1,500/500 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 7-9 (ppp), 6-7 (weeks), Early Spring, PGR daminozide/chlormequat chloride tank mix 1,500/500 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions. If growing frost-free (northern overwinter culture from Autumn transplant), plan for crop times of 17 to 18 weeks from transplant to finish.
5"/6"/1 Gallon/15 cm , 1-3 (ppp), 6-7 (weeks), Early Spring, PGR daminozide/chlormequat chloride tank mix 2,500/250 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 4 (ppp), 9-10 (weeks), Early Spring, PGR daminozide/chlormequat chloride tank mix 2,500/250 ppm Spray 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 5-6 (weeks), Autumn, PGR daminozide/chlormequat chloride tank mix 5,000/500 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 4 (ppp), 7-8 (weeks), Autumn, PGR daminozide/chlormequat chloride tank mix 5,000/500 ppm Spray	In the heat of Autumn production, a paclobutrazol drench of 0.1 to 0.125 ppm can be used once foliage is covering soil. Consult Cool Wave Production Handbook for more detailed information on scheduling for Autumn and Spring programs and variety-specific PGR information.
5"/6"/1 Gallon/15 cm , 1-2 (ppp), 7-8 (weeks), Early Spring, PGR daminozide/chlormequat chloride tank mix 2,500/250 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 3-4 (ppp), 9-10 (weeks), Early Spring, PGR daminozide/chlormequat chloride tank mix 2,500/250 ppm Spray 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 5-6 (weeks), Autumn, PGR daminozide/chlormequat chloride tank mix 5,000/500 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 3-4 (ppp), 7-8 (weeks), Autumn, PGR daminozide/chlormequat chloride tank mix 5,000/500 ppm Spray	In the heat of Autumn production, a paclobutrazol drench of 0.1 to 0.125 ppm can be used once foliage is covering soil.
Cell Pack , 1 (ppp), 8-10 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 8-10 (weeks), Spring 5"/6"/1 Gallon/15 cm , 2 (ppp), 8-10 (weeks), Spring	High light levels and temperatures will reduce crop time. Pentas will naturally decrease pH levels in the soil and regular monitoring is necessary. Plants that have pH below 6.4 will slow growth, delay flowering, exhibit signs of iron toxicity (foliar necrosis) and calcium/magnesium deficiency (foliar puckering). When needed, a tank mix of daminozide 2,500 to 5,000 ppm and chlormequat 500 to 750 ppm can be used. Paclobutrazol sprays of 5 to 10 ppm are also effective.
Cell Pack , 1 (ppp), 7-8 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Spring 5"/6"/1 Gallon/15 cm , 2 (ppp), 7-8 (weeks), Spring	High light levels and temperatures will reduce crop time. Pentas will naturally decrease pH levels in the soil and regular monitoring is necessary. Plants that have pH below 6.4 will slow growth, delay flowering, exhibit signs of iron toxicity (foliar necrosis) and calcium/magnesium deficiency (foliar puckering). When needed, a tank mix of daminozide 2,500 to 5,000 ppm and chlormequat 500 to 750 ppm can be used. Paclobutrazol sprays of 5 to 10 ppm are also effective.
Cell Pack , 1 (ppp), 7-8 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Spring 5"/6"/1 Gallon/15 cm , 2 (ppp), 7-8 (weeks), Spring	High light levels and temperatures will reduce crop time. Pentas will naturally decrease pH levels in the soil and regular monitoring is necessary. Plants that have pH below 6.4 will slow growth, delay flowering, exhibit signs of iron toxicity (foliar necrosis) and calcium/magnesium deficiency (foliar puckering). Growth Regulators: The Lucky Star series has been bred and selected for natural compactness. When needed, a tank mix of daminozide 2,500 to 5,000 ppm and chlormequat 500 to 750 ppm can be used. Paclobutrazol sprays of 5 to 10 ppm are also effective. Lucky Star Dark Red can exhibit leaf necrosis (chilling injury) when exposed to temperatures below 60°F (16°C). The extent of chilling injury depends on the exposure temperature and duration. Plants do grow out of minor damage when exposure is minimal but to avoid any chilling injury, keep above 60°F (16°C) during production and transport.
4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Summer 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 6-7 (weeks), Summer 4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Autumn 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 6-7 (weeks), Autumn	As Black Pearl is used especially for its foliage, crop times reflect finish for foliage, not fruit. Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times.
4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Summer 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 6-7 (weeks), Summer 4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Autumn 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 6-7 (weeks), Autumn	As Calico is used especially for its foliage, crop times reflect finish for foliage, not fruit. Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times.
4"/4.5"/Quart/10 cm , 1 (ppp), 7-13 (weeks), Summer 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-13 (weeks), Summer 4"/4.5"/Quart/10 cm , 1 (ppp), 7-13 (weeks), Autumn 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-13 (weeks), Autumn	Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times.
4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Summer 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 6-7 (weeks), Summer 4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Autumn 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 6-7 (weeks), Autumn	As Purple Flash is used especially for its foliage, crop times reflect finish for foliage, not fruit. Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Sangria F1	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm		
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Sedona Sun	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm		
PETCHOA <i>Petunia sp. x Calibrachoa sp.</i> Caliburst™ F1 Series	288 128	(day) 61-75°F (16-24°C) (night) 57-65°F (14-18°C)	5.5-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day 9-hour critical daylength.	
PETUNIA <i>Petunia x hybrida</i> Daddy® F1 Series	288	(day) 62-70°F (17-21°C) (night) 55-65°F (13-18°C)	5.5-6.3 pH 1.0-1.5 mmhos/cm	Facultative Long Day	
PETUNIA <i>Petunia x hybrida</i> Dreams™ F1 Series	288	(day) 62-70°F (17-21°C) (night) 55-65°F (13-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Facultative Long Day	
PETUNIA <i>Petunia x hybrida</i> Ez Rider® F1 Series	288	(day) 62-70°F (17-21°C) (night) 55-65°F (13-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Facultative Long Day Similar to Dreams petunia, all Ez Rider varieties can flower successfully at 10-hour daylengths.	
PETUNIA <i>Petunia x hybrida</i> Lo Rider™ F1 Series	288	(day) 62-70°F (17-21°C) (night) 55-65°F (13-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Facultative Long Day All Lo Rider varieties can flower successfully at 10-hour daylengths.	
PETUNIA <i>Petunia x hybrida</i> Madness® F1 Series	288	(day) 62-70°F (17-21°C) (night) 55-65°F (13-18°C)	5.5-6.2 pH 1.0-1.5 mmhos/cm	Facultative Long Day	
PETUNIA <i>Petunia x hybrida</i> Mirage™ F1 Series	288	(day) 62-70°F (17-21°C) (night) 55-65°F (13-18°C)	5.5-6.2 pH 1.0-1.5 mmhos/cm	Facultative Long Day	
PETUNIA <i>Petunia x hybrida</i> Pretty Flora™ Series	288	(day) 62-70°F (17-21°C) (night) 55-65°F (13-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Facultative Long Day All varieties can flower successfully at 10-hour daylengths.	
PETUNIA <i>Petunia x hybrida</i> Pretty Grand™ F1 Series	288	(day) 62-70°F (17-21°C) (night) 55-65°F (13-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Facultative Long Day Similar to Dreams petunia, all Pretty Grand varieties can flower successfully at 10-hour daylengths.	
PETUNIA <i>Petunia x hybrida</i> Sophistica® F1 Series	288	(day) 62-70°F (17-21°C) (night) 55-65°F (13-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Facultative Long Day Can flower successfully at 10-hour daylengths. Crop time is 3 to 6 days faster under longer days.	
PETUNIA <i>Petunia x hybrida</i> Supercascade F1 Series	288	(day) 62-70°F (17-21°C) (night) 55-65°F (13-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Facultative Long Day	
PETUNIA (DOUBLE) <i>Petunia x hybrida</i> Double Cascade F1 Series	288	(day) 65-72°F (18-22°C) (night) 60-62°F (16-17°C)	5.8-6.3 pH 1.5-2.0 mmhos/cm	Facultative Long Day	

FINISHING PROGRAMS	KEY TIPS
5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-13 (weeks), Summer 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-13 (weeks), Autumn	Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times.
5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-13 (weeks), Summer 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-13 (weeks), Autumn	Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times.
4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring, PGR paclobutrazol 2-3 ppm Drench 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 8-9 (weeks), Spring, PGR paclobutrazol 2-3 ppm Drench 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Summer, PGR paclobutrazol 2-3 ppm Drench 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 6-7 (weeks), Summer, PGR paclobutrazol 2-3 ppm Drench	Apply a paclobutrazol drench at 2-3 ppm at 7-10 days after transplant, with additional applications as needed or weekly spray applications of 10-15 ppm paclobutrazol. Avoid using daminozide spray at visible bud stage or later, as it can reduce the intensity of the yellow flower colour.
Cell Pack , 1 (ppp), 5-6 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 6-7 (weeks), Spring, PGR daminozide 2,500-3,500 ppm Spray	
Cell Pack , 1 (ppp), 5-6 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 5-7 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray	
Cell Pack , 1 (ppp), 5-6 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 6-7 (weeks), Spring, PGR daminozide 2,500-3,500 ppm Spray	Genetically compact and needs less to no PGRs after transplant.
Cell Pack , 1 (ppp), 5-6 (weeks), Spring, PGR daminozide 2,500-3,500 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 6-7 (weeks), Spring, PGR daminozide 2,500-3,500 ppm Spray	Genetically compact and may need less to no PGRs after transplant.
Cell Pack , 1 (ppp), 5-6 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 5-7 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray	
Cell Pack , 1 (ppp), 5-6 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 5-7 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray	
Cell Pack , 1 (ppp), 5-6 (weeks), Spring, PGR daminozide 2,500-3,500 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 6-7 (weeks), Spring, PGR daminozide 2,500-3,500 ppm Spray	Genetically compact and needs less to no PGRs after transplant.
Cell Pack , 1 (ppp), 5-6 (weeks), Spring, PGR daminozide 2,500-3,500 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 6-7 (weeks), Spring, PGR daminozide 2,500-3,500 ppm Spray	Genetically compact and needs less to no PGRs after transplant.
4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Spring, PGR paclobutrazol 2-3 ppm Drench 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 6-7 (weeks), Spring, PGR paclobutrazol 2-3 ppm Drench 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Summer, PGR paclobutrazol 2-3 ppm Drench 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 5-6 (weeks), Summer, PGR paclobutrazol 2-3 ppm Drench	Avoid using daminozide on Lime Bicolor and Blackberry, as this may impact flower colour. Options include paclobutrazol or flurprimidol.
Cell Pack , 1 (ppp), 5-6 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 6-7 (weeks), Spring, PGR daminozide 2,500-3,500 ppm Spray	
4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 8-9 (weeks), Spring	Drench with a fungicide at transplant. Maintain light levels as high as possible (4,000 to 7,000 f.c.). Sensitive to overwatering; allow media to dry slightly before watering. Controlling Height: Once plants are rooted to the sides of the containers, they can be allowed to wilt prior to irrigation to provide some height control. Height can also be controlled by withholding fertiliser, especially phosphorus and ammonium-based nitrogen. Petunias are responsive to day/night temperature differential (DIF), and are shorter with a negative DIF. Florel will promote lateral branching when applied once plants are established. Petunias respond to both B-Nine and Bonzi. A one-time Bonzi drench is effective. Varieties may respond differently to growth regulators.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
PETUNIA (DOUBLE) <i>Petunia x hybrida</i> Double Madness™ F1 Series	288	(day) 65-72°F (18-22°C) (night) 60-62°F (16-17°C)	5.5-6.3 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
PETUNIA (DOUBLE) <i>Petunia x hybrida</i> Duo F1 Series	288	(day) 65-72°F (18-22°C) (night) 60-62°F (16-17°C)	5.5-6.3 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
PETUNIA (DOUBLE) <i>Petunia x hybrida</i> Glorious F1 Series	288	(day) 65-72°F (18-22°C) (night) 60-62°F (16-17°C)	5.5-6.3 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
PETUNIA (DOUBLE) <i>Petunia x hybrida</i> Pirouette F1 Series	288	(day) 65-72°F (18-22°C) (night) 60-62°F (16-17°C)	5.5-6.3 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
PETUNIA (SPREADING) <i>Petunia x hybrida</i> E3 Easy Wave® F1 Series	288 128	(day) 61-75°F (16-24°C) (night) 57-65°F (14-18°C)	5.5-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day Minimum Daylength Requirement by Variety: 9 hours: White, Midnight Marble 9.5 hours: Coral, Pink, Red, Rose Morn, Sky Blue 10 hours: Blue, Pink Cosmo, Yellow	
PETUNIA (SPREADING) <i>Petunia x hybrida</i> Easy Wave® F1 Series	288 128	(day) 61-75°F (16-24°C) (night) 57-65°F (14-18°C)	5.5-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day Minimum Daylength Requirement by Variety: 9 hours: Rose Fusion 9.5 hours: Blue, Lavender Sky Blue, Navy Velour, Pink Pearl, Rose 10 hours: Berry Velour, Pink Passion, Burgundy Star, Coral Reef, Neon Rose, Rosy Dawn, Silver, Violet, White 10.5 hours: Burgundy Velour 11 hours: Pink, Plum Vein, Red, Red Velour	

FINISHING PROGRAMS	KEY TIPS
4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 7-8 (weeks), Spring	Drench with a fungicide at transplant. Maintain light levels as high as possible (4,000 to 7,000 f.c.). Sensitive to overwatering; allow media to dry slightly before watering. Controlling Height: Once plants are rooted to the sides of the containers, they can be allowed to wilt prior to irrigation to provide some height control. Height can also be controlled by withholding fertiliser, especially phosphorus and ammonium-based nitrogen. Petunias are responsive to day/night temperature differential (DIF), and are shorter with a negative DIF. Florel will promote lateral branching when applied once plants are established. Petunias respond to both B-Nine and Bonzi. A one-time Bonzi drench is effective. Varieties may respond differently to growth regulators.
4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 7-8 (weeks), Spring	Drench with a fungicide at transplant. Maintain light levels as high as possible (4,000 to 7,000 f.c.). Sensitive to overwatering; allow media to dry slightly before watering. Controlling Height: Once plants are rooted to the sides of the containers, they can be allowed to wilt prior to irrigation to provide some height control. Height can also be controlled by withholding fertiliser, especially phosphorus and ammonium-based nitrogen. Petunias are responsive to day/night temperature differential (DIF), and are shorter with a negative DIF. Florel will promote lateral branching when applied once plants are established. Petunias respond to both B-Nine and Bonzi. A one-time Bonzi drench is effective. Varieties may respond differently to growth regulators.
4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 7-8 (weeks), Spring	Maintain light levels as high as possible (4,000 to 7,000 f.c.). Sensitive to overwatering; allow media to dry slightly before watering. Controlling Height: Once plants are rooted to the sides of the containers, they can be allowed to wilt prior to irrigation to provide some height control. Height can also be controlled by withholding fertiliser, especially phosphorus and ammonium-based nitrogen. Petunias are responsive to day/night temperature differential (DIF), and are shorter with a negative DIF. Florel will promote lateral branching when applied once plants are established. Petunias respond to both B-Nine and Bonzi. A one-time Bonzi drench is effective. Varieties may respond differently to growth regulators.
4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 7-8 (weeks), Spring	Drench with a fungicide at transplant. Maintain light levels as high as possible (4,000 to 7,000 f.c.). Sensitive to overwatering; allow media to dry slightly before watering. Controlling Height: Once plants are rooted to the sides of the containers, they can be allowed to wilt prior to irrigation to provide some height control. Height can also be controlled by withholding fertiliser, especially phosphorus and ammonium-based nitrogen. Petunias are responsive to day/night temperature differential (DIF), and are shorter with a negative DIF. Florel will promote lateral branching when applied once plants are established. Petunias respond to both B-Nine and Bonzi. A one-time Bonzi drench is effective. Varieties may respond differently to growth regulators.
306 Pack/1801 , 1 (ppp), 6-7 (weeks), Spring, PGR paclobutrazol 2-3 ppm Drench 4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring, PGR paclobutrazol 2-3 ppm Drench 10" Pot or HB/3 Gallon/25 cm , 3-4 (ppp), 8-9 (weeks), Spring, PGR paclobutrazol 2-3 ppm Drench 306 Pack/1801 , 1 (ppp), 4-5 (weeks), Summer, PGR paclobutrazol 2-3 ppm Drench 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Summer, PGR paclobutrazol 2-3 ppm Drench 10" Pot or HB/3 Gallon/25 cm , 3-4 (ppp), 6-7 (weeks), Summer, PGR paclobutrazol 2-3 ppm Drench	Post transplant, E3 Easy Wave varieties (see exceptions) can be controlled with less or half the rate of Easy Wave. Sensitive to overwatering; allow media to dry slightly before watering. North American recommendations: 1. Daminozide spray of 2,500-3,000 ppm 7 to 10 days after transplant promotes branching and controls early stretch. Then 2. Paclobutrazol 2-3 ppm drench 7 to 10 days later, additional drenches as needed. Exception: E3 Easy Wave Blue, with paclobutrazol rates similar to Easy Wave at 5 ppm drench. Northern Europe recommendations: Paclobutrazol 3-4 ml/l (12-16 ppm) spray weekly or as needed OR Daminozide 3 g/l (2,000 ppm) spray weekly or as needed Exception: E3 Easy Wave Blue, with paclobutrazol rates similar to Easy Wave at 5 ml/l (20 ppm) spray. All E3 Easy Wave varieties are cold durable. Can be grown as low as 50°F (10°C). Crop timing is related to average temperature when grown under proper daylength. Plants will take longer to flower when grown in cooler conditions. Recommended DLI range of 12 to 20 mol·m ⁻² ·d ⁻¹ .
306 Pack/1801 , 1 (ppp), 6-7 (weeks), Spring, PGR paclobutrazol 3-5 ppm Drench 4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring, PGR paclobutrazol 3-5 ppm Drench 10" Pot or HB/3 Gallon/25 cm , 3-4 (ppp), 8-9 (weeks), Spring, PGR paclobutrazol 3-5 ppm Drench 306 Pack/1801 , 1 (ppp), 4-5 (weeks), Summer, PGR paclobutrazol 3-5 ppm Drench 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Summer, PGR paclobutrazol 3-5 ppm Drench 10" Pot or HB/3 Gallon/25 cm , 3-4 (ppp), 6-7 (weeks), Summer, PGR paclobutrazol 3-5 ppm Drench	Daminozide spray of 3,500 to 5,000 ppm 7 to 10 days after transplant promotes branching and controls early stretch. As an optional treatment, flurprimidol (Topflor) can be used in place of paclobutrazol at 2/3 the rate of paclobutrazol. Can be grown as low as 50°F (10°C). Crop timing is related to average temperature when grown under proper daylength. Plants will take longer to flower when grown in cooler conditions. Recommended DLI range of 12 to 20 mol·m ⁻² ·d ⁻¹ . Burgundy Velour, Navy Velour, Plum Vein and Red Velour are more vigorous within the Easy Wave group. They can take higher rates of paclobutrazol, 1 to 2 ppm more. All Easy Wave varieties are cold durable with the exception of Rosy Dawn.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
PETUNIA (SPREADING) <i>Petunia x hybrida</i> Shock Wave® F1 Series	288 128	(day) 61-75°F (16-24°C) (night) 57-65°F (14-18°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day Minimum Daylength Requirements by Variety: 9 hours: Deep Purple 10 hours: Coral Crush, Denim, Pink Shades, Red, Rose Vein, Violet 10.5 hours: Pink Vein, Purple Tie Dye, Rose, White	
PETUNIA (SPREADING) <i>Petunia x hybrida</i> Tidal Wave® F1 Series	288 128	(day) 61-75°F (16-24°C) (night) 57-65°F (14-18°C)	5.5-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day Minimum Daylength Requirement by Variety: 12 hours: Cherry, Hot Pink, Purple, Red Velour, Silver	
PETUNIA (SPREADING) <i>Petunia x hybrida</i> Wave® F1 Series	288 128	(day) 61-75°F (16-24°C) (night) 57-65°F (14-18°C)	5.5-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day Minimum Daylength Requirement by Variety: 11.5 hours: Purple 12 hours: Lavender, Misty Lilac, Pink, Purple Classic 13 hours: Carmine Velour	
PHLOX <i>Phlox drummondii</i> 21st Century F1 Series	288	(day) 60-70°F (16-21°C) (night) 50-62°F (10-17°C)	5.5-6.2 pH 1.0-1.5 mmhos/cm	Day Neutral	
PLECTRANTHUS <i>Plectranthus argentatus</i> Silver Crest	288	(day) 64-80°F (18-27°C) (night) 61-68°F (16-20°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Under short days, plants will initiate flowers.	
PLECTRANTHUS <i>Plectranthus argentatus</i> Silver Shield	288	(day) 64-80°F (18-27°C) (night) 61-68°F (16-20°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Under short days, plants will initiate flowers.	
PORTULACA <i>Portulaca grandiflora</i> Happy Hour™ F1 Series	288	(day) 68-76°F (20-24°C) (night) 65-67°F (18-19°C)	5.5-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral If transplanting plugs when daylength is shorter than 10 hours and 30 minutes, provide long day conditions.	
PORTULACA <i>Portulaca grandiflora</i> Happy Trails™ F1 Series	288	(day) 68-76°F (20-24°C) (night) 65-67°F (18-19°C)	5.5-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral If transplanting plugs when daylength is shorter than 10 hours, provide long day conditions.	
PRIMULA <i>Primula acaulis</i> Heritage Crème F1	288	(day) 55-60°F (13-16°C) (night) 50-55°F (10-13°C)	5.5-6.2 pH 1.0-1.2 mmhos/cm	Facultative Long Day	
PRIMULA <i>Primula acaulis</i> Primlet® Series	288	(day) 55-60°F (13-16°C) (night) 50-55°F (10-13°C)	5.5-6.2 pH 1.0-1.2 mmhos/cm	Facultative Long Day	
PURSLANE <i>Portulaca oleracea</i> Toucan Series	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	6.0-6.5 pH 1.5-2.0 mmhos/cm	Day Neutral	

FINISHING PROGRAMS	KEY TIPS
306 Pack/1801, 1 (ppp), 5-6 (weeks), Spring, PGR paclobutrazol 3-5 ppm Drench 4"/4.5"/Quart/10 cm, 1 (ppp), 5-6 (weeks), Spring, PGR paclobutrazol 3-5 ppm Drench 10" Pot or HB/3 Gallon/25 cm, 3-4 (ppp), 6-8 (weeks), Spring, PGR paclobutrazol 3-5 ppm Drench 306 Pack/1801, 1 (ppp), 4-5 (weeks), Summer, PGR paclobutrazol 3-5 ppm Drench 4"/4.5"/Quart/10 cm, 1 (ppp), 4-5 (weeks), Summer, PGR paclobutrazol 3-5 ppm Drench 10" Pot or HB/3 Gallon/25 cm, 3-4 (ppp), 5-6 (weeks), Summer, PGR paclobutrazol 3-5 ppm Drench	Daminozide spray of 2,500 to 5,000 ppm 7 to 10 days after transplant promotes branching and controls early stretch. As an optional treatment, flurprimidol (Topflor) can be used in place of paclobutrazol at 2/3 the rate of paclobutrazol. Can be grown as low as 50°F (10°C). Crop timing is related to average temperature when grown under proper daylength. Plants will take longer to flower when grown in cooler conditions. Recommended DLI range of 12 to 20 mol·m⁻²·d⁻¹. Cold-Durable Varieties: Deep Purple, Denim, Pink Shades, Pink Vein, Purple Tie Dye, Red, Rose Vein, Violet, White Cold-Sensitive Varieties: Coral Crush, Rose
5"/6"/1 Gallon/15 cm, 1-3 (ppp), 6-8 (weeks), Spring, PGR paclobutrazol 5-8 ppm Drench 8"/2 Gallon/20 cm, 1-3 (ppp), 6-8 (weeks), Spring, PGR paclobutrazol 5-8 ppm Drench 5"/6"/1 Gallon/15 cm, 1-3 (ppp), 4-7 (weeks), Summer, PGR paclobutrazol 5-8 ppm Drench 8"/2 Gallon/20 cm, 1-3 (ppp), 4-7 (weeks), Summer, PGR paclobutrazol 5-8 ppm Drench	Daminozide spray of 3,500 to 5,000 ppm 7 to 10 days after transplant promotes branching and controls early stretch. An alternative to paclobutrazol drench, flurprimidol (Topflor) can be used at 2/3 the rate of paclobutrazol. Can be grown as low as 50°F (10°C). Crop timing is related to average temperature when grown under proper daylength. Plants will take longer to flower when grown in cooler conditions. Recommended DLI range of 12 to 20 mol·m⁻²·d⁻¹. Cold-Durable Varieties: Red Velour, Silver
5"/6"/1 Gallon/15 cm, 1 (ppp), 7-9 (weeks), Spring, PGR paclobutrazol 5-8 ppm Drench 10" Pot or HB/3 Gallon/25 cm, 3-4 (ppp), 8-10 (weeks), Spring, PGR paclobutrazol 5-8 ppm Drench 5"/6"/1 Gallon/15 cm, 1 (ppp), 5-7 (weeks), Summer, PGR paclobutrazol 5-8 ppm Drench 10" Pot or HB/3 Gallon/25 cm, 3-4 (ppp), 6-8 (weeks), Summer, PGR paclobutrazol 5-8 ppm Drench	Daminozide spray of 3,500 to 5,000 ppm 7 to 10 days after transplant promotes branching and controls early stretch. Carmine Velour and Purple Wave are more vigorous than other Wave varieties and can use a paclobutrazol 8 to 10 ppm drench. As an optional treatment, flurprimidol (Topflor) can be used in place of paclobutrazol at 2/3 the rate of paclobutrazol. Can be grown as low as 50°F (10°C). Crop timing is related to average temperature when grown under proper daylength. Plants will take longer to flower when grown in cooler conditions. Recommended DLI range of 12 to 20 mol·m⁻²·d⁻¹. Cold-Durable Varieties: Carmine Velour, Lavender, Pink, Purple, Purple Classic
306 Pack/1801, 1 (ppp), 6 (weeks), Spring 4"/4.5"/Quart/10 cm, 1 (ppp), 6 (weeks), Spring 5"/6"/1 Gallon/15 cm, 3 (ppp), 7-8 (weeks), Spring	If necessary, paclobutrazol 7.5 to 20 ppm Spray can be applied. Application rate and frequency of applications depends upon growth rate. Daminozide 2,500 ppm Spray is also effective.
4"/4.5"/Quart/10 cm, 1 (ppp), 4-6 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 10" Pot or HB/3 Gallon/25 cm, 3 (ppp), 6-7 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray	Does not require a pinch. Due to directional stem arching, it is advisable to position plugs with growing shoot facing outward, toward the outside of the container. Repeat PGR application if needed. Higher concentrations of PGR used for small pot and/or low light production.
4"/4.5"/Quart/10 cm, 1 (ppp), 8-9 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 5"/6"/1 Gallon/15 cm, 1-2 (ppp), 9-10 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray	Does not require a pinch. Repeat PGR application if needed. Higher concentration of PGR is used for small pot and/or low light production.
Cell Pack, 36 (ppp), 5 (weeks), Spring 4"/4.5"/Quart/10 cm, 1 (ppp), 5-6 (weeks), Spring	PGRs are generally not needed unless grown under very warm conditions. Height can be controlled by allowing the soil to dry thoroughly between watering. Plants can be allowed to wilt slightly after the roots reach the side of the container. Height can also be controlled by withholding fertiliser, especially phosphorus and ammonium-based nitrogen.
Cell Pack, 36 (ppp), 5 (weeks), Spring 4"/4.5"/Quart/10 cm, 1 (ppp), 5-6 (weeks), Spring	PGRs are generally not needed unless grown under very warm conditions. Height can be controlled by allowing the soil to dry thoroughly between watering. Plants can be allowed to wilt slightly after the roots reach the side of the container. Height can also be controlled by withholding fertiliser, especially phosphorus and ammonium-based nitrogen.
5"/6"/1 Gallon/15 cm, 1 (ppp), 15-17 (weeks), Autumn, PGR daminozide 2,500-5,000 ppm Spray	Drop temperature after Week 5 (when plant has 10 established leaves) to 45 to 48°F (7 to 9°C) day and 35 to 45°F (2 to 7°C) night for bud initiation. After Week 11, go back up to growing temperatures for flower development and forcing. Plants can be held at 40 to 45°F (5 to 7°C) for later forcing. Growing-on time in weeks depends on how large a plant is required. A large plant requires a longer time at 60 to 65°F (16 to 18°C) nights. From bud visibility to first opening of flower is approximately 4 to 5 weeks, depending on temperature.
5"/6"/1 Gallon/15 cm, 1 (ppp), 15-17 (weeks), Autumn, PGR daminozide 2,500-5,000 ppm Spray	Drop temperature after Week 5 (when plant has 10 established leaves) to 45 to 48°F (7 to 9°C) day and 35 to 45°F (2 to 7°C) night for bud initiation. After Week 11, go back up to growing temperatures for flower development and forcing. Plants can be held at 40 to 45°F (5 to 7°C) for later forcing. Growing-on time in weeks depends on how large a plant is required. A large plant requires a longer time at 60 to 65°F (16 to 18°C) nights. From bud visibility to first opening of flower is approximately 4 to 5 weeks, depending on temperature.
Cell Pack, 1 (ppp), 8-10 (weeks), Spring 4"/4.5"/Quart/10 cm, 1 (ppp), 8-10 (weeks), Spring 5"/6"/1 Gallon/15 cm, 2-3 (ppp), 8-10 (weeks), Spring	PGR treatment not needed if produced under low feed, dry watering and high-light conditions. If necessary, Topflor (flurprimidol) 30 ppm (7.9 ml/l, 0.38% formulation) spray can be used at 1 week after transplant. Repeat the spray 2 weeks later. Or Bonzi (paclobutrazol) 5 ppm (1.3 ml/l, 0.4% formulation) drench can be used at 1 week after transplant.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
RUELLIA <i>Ruellia brittoniana</i> (<i>Ruellia tweediana</i>) Southern Star Series	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	6.0-6.5 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
SALVIA <i>Salvia canariensis</i> Lancelot	288	(day) 65-72°F (18-22°C) (night) 62-65°F (17-18°C)	5.5-5.8 pH 1.5-2.0 mmhos/cm	Facultative Long Day with critical daylength 13 hours	
SALVIA <i>Salvia splendens</i> Lighthouse Series	288	(day) 68-74°F (20-23°C) (night) 64-68°F (18-20°C)	5.5-5.8 pH 1.2-1.5 mmhos/cm	Facultative Long Day	
SALVIA <i>Salvia splendens</i> Red Hot Sally II	288	(day) 68-74°F (20-23°C) (night) 64-68°F (18-20°C)	5.5-5.8 pH 1.2-1.5 mmhos/cm	Facultative Long Day	
SALVIA <i>Salvia splendens</i> Scarlet King	288	(day) 68-74°F (20-23°C) (night) 64-68°F (18-20°C)	5.5-5.8 pH 1.2-1.5 mmhos/cm	Facultative Long Day	
SALVIA <i>Salvia splendens</i> Vista™ Series	288	(day) 68-74°F (20-23°C) (night) 64-68°F (18-20°C)	5.5-5.8 pH 1.2-1.5 mmhos/cm	Facultative Long Day	
SALVIA INTERSPECIFIC <i>Salvia longispicata x farinacea</i> Big Blue	288 128	(day) 68-78°F (20-26°C) (night) 64-68°F (18-20°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Facultative intermediate-day flowering response with fastest flowering at 14 and 15 hours. At ≤13 hours, flowering delayed by ~3 weeks than at 14 and 15 hours. At ≥16 hours and night interruption, flowering delayed by ~1 week than at 14 and 15 hours.	
SNAPDRAGON <i>Antirrhinum majus</i> Rocket F1 Series	288	(day) 65-80°F (18-27°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
SNAPDRAGON <i>Antirrhinum majus</i> Snapshot™ F1 Series	288	(day) 55-70°F (13-21°C) (night) 45-55°F (7-13°C)	5.5-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
STOCK <i>Matthiola incana</i> Hot Cakes Series	288	(day) 60-70°F (16-21°C) (night) 50-55°F (10-13°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
SUNFLOWER <i>Helianthus annuus</i> Always Sunny F1 Series	128 72	(day) 64-72°F (18-22°C) (night) 61-64°F (16-18°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day Facultative long day plant has a critical daylength of about 13 hours, but will flower at the same time under any daylength if plugs are given a 2-week long day (14 hours or longer) or night interruption treatment. In other words, a long day treated plug will flower faster by about 2 weeks during Spring production.	
TORENIA <i>Torenia fournieri</i> Kauai™ Series	288	(day) 65-70°F (18-21°C) (night) 62-64°F (17-18°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral	

FINISHING PROGRAMS	KEY TIPS
Cell Pack , 1 (ppp), 10 (weeks), Late Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 10 (weeks), Late Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 10 (weeks), Late Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 8 (weeks), Summer	
306 Pack/1801 , 1 (ppp), 4-5 (weeks), Spring, PGR daminozide 2,500 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Spring, PGR daminozide 2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 2 (ppp), 7-8 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray	PGR applications can be made two weeks after transplant and repeated in 7 to 10 days if needed. Paclobutrazol 0.5 to 1.0 ppm drench can be used alternatively to daminozide. Paclobutrazol is not recommended for early applications in gallons, as this can result in stunting. All timing recommendations are for a finished plant with silver foliage, no flower. Add 4 to 5 weeks for flowering under long days. Finish with flowers in gallons only, not small pots.
Cell Pack , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring	Salvia is very sensitive to high salt during early plug stages.
Cell Pack , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring	Salvia is very sensitive to high salt during early plug stages.
Cell Pack , 1 (ppp), 4-5 (weeks), Spring	Salvia is very sensitive to high salt during early plug stages.
Cell Pack , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring	Salvia is very sensitive to high salt during early plug stages.
5"/6"/1 Gallon/15 cm , 1 (ppp), 13-14 (weeks), Late Spring, PGR daminozide 2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 1 (ppp), 12-13 (weeks), Summer, PGR daminozide 2,500 ppm Spray	Production of Salvia Big Blue needs to be pinched at 14-21 days after transplant, leaving 4 nodes. Finishing in gallons preferred for late Spring and Summer for easiest finish in the best daylength for flowering in season. May be finished in smaller pot sizes without flowers in 9 weeks for fast landscape input use. Lighting is still recommended for this finish, to set buds before sale. Repeat PGR treatments in finish as needed. Paclobutrazol may be used instead of daminozide in final stages, starting 3 weeks after transplant, at rates of 3-5 ppm drench (northern U.S.).
Field grown , 3 (ppp), 13-16 (weeks), Spring	Drench with a fungicide at transplant. Also see Cut Flower section for more details.
Cell Pack , 1 (ppp), 6 (weeks), Early Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 6 (weeks), Early Spring	Drench with a fungicide at transplant. Controlling Height: Once plants are rooted to the sides of the containers, they can be allowed to dry slightly prior to irrigation. Withhold fertiliser, especially phosphorus and ammonium-based nitrogen. Snapdragons are responsive to day/night temperature differential (DIF) and are shorter with a negative DIF. When grown as recommended under cool temperatures and high light, no growth regulators should be needed. B-Nine, Bonzi and Sumagic are effective in controlling height in snapdragons, but may delay flowering and will lead to less uniform flowering time.
4"/4.5"/Quart/10 cm , 1 (ppp), 5-7 (weeks), Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 5-7 (weeks), Spring	Best produced under cooler temperatures for uniformity/quality of flowering and plant habit. In general, PGRs are not required, but can apply daminozide 2,500 to 3,500 ppm foliar spray about 2 weeks after transplant. Note: If unselected plugs are used, expect to see both single and double flowering plants in the crop.
5"/6"/1 Gallon/15 cm , 1 (ppp), 6-9 (weeks), Late Spring, PGR paclobutrazol 3 ppm Drench 8"/2 Gallon/20 cm , 1 (ppp), 6-9 (weeks), Late Spring, PGR paclobutrazol 3 ppm Drench 12" Pot or HB/5 Gallon/30 cm , 1-3 (ppp), 7-9 (weeks), Late Spring, PGR paclobutrazol 3 ppm Drench 5"/6"/1 Gallon/15 cm , 1 (ppp), 6-8 (weeks), Summer, PGR paclobutrazol 3 ppm Drench 8"/2 Gallon/20 cm , 1 (ppp), 6-8 (weeks), Summer, PGR paclobutrazol 3 ppm Drench 12" Pot or HB/5 Gallon/30 cm , 1-3 (ppp), 7-8 (weeks), Summer, PGR paclobutrazol 3 ppm Drench	Option to give a hard pinch at the 6 to 7 internode stage, leaving 4 internodes on the plant. This adds 10 to 14 days to flower timing. Can repeat a paclobutrazol 3 ppm drench in 2-week intervals as needed.
Cell Pack , 1 (ppp), 5-6 (weeks), Spring, PGR chlormequat chloride 500-700 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring, PGR chlormequat chloride 500-750 ppm Spray	No pinch needed. Growth Regulators: Chlormequat chloride can be used at rate of 500 to 750 ppm (4.2 to 6.4 ml/l 11.8% formulation or 0.7 to 1.0 g/l of 75% formulation) at two weeks after transplant; repeat as necessary. Paclobutrazol 20 to 30 ppm (5.0 to 7.5 ml/l, 0.4% formulation) spray also works but is slightly less effective than chlormequat chloride. Avoid using daminozide or tank mix of daminozide/chlormequat chloride as daminozide will bleach flower colour to become less intense. Daminozide will also delay flower timing.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
VERBENA <i>Verbena x hybrida</i> Quartz Series	288	(day) 65-70°F (18-21°C) (night) 60°F (16°C)	5.5-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
VERBENA <i>Verbena x hybrida</i> Quartz XP Series	288	(day) 65-70°F (18-21°C) (night) 60°F (16°C)	5.5-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
VINCA <i>Catharanthus roseus</i> Mediterranean XP Series	288	(day) 75°F (24°C) (night) 65-68°F (18-20°C)	5.5-6.0 pH 1.5-2.0 mmhos/cm	Day Neutral	
VINCA <i>Catharanthus roseus</i> Pacifica XP Series	288	(day) 75°F (24°C) (night) 65-68°F (18-20°C)	5.5-6.0 pH 1.5-2.0 mmhos/cm	Day Neutral	
VINCA <i>Catharanthus roseus</i> Tattoo™ Series	288	(day) 75°F (24°C) (night) 65-68°F (18-20°C)	5.5-6.0 pH 1.5-2.0 mmhos/cm	Day Neutral	
VINCA <i>Catharanthus roseus</i> Titan-ium™ F1 Series	288	(day) 75°F (24°C) (night) 65-68°F (18-20°C)	5.5-6.0 pH 1.5-2.0 mmhos/cm	Day Neutral	
VINCA <i>Catharanthus roseus</i> Titan™ F1 Series	288	(day) 75°F (24°C) (night) 65-68°F (18-20°C)	5.5-6.0 pH 1.5-2.0 mmhos/cm	Day Neutral	
VINCA <i>Catharanthus roseus</i> Valiant™ F1 Series	288	(day) 75°F (24°C) (night) 65-68°F (18-20°C)	5.5-6.0 pH 1.5-2.0 mmhos/cm	Day Neutral	
VIOLA <i>Viola cornuta</i> Sorbet® F1 Series	288	(day) 60°F (16°C) (night) 50-55°F (10-13°C)	5.5-5.8 pH 1.5 mmhos/cm	Facultative Long Day	
VIOLA <i>Viola cornuta</i> Sorbet® XP F1 Series	288	(day) 60°F (16°C) (night) 50-55°F (10-13°C)	5.5-5.8 pH 1.5 mmhos/cm	Facultative Long Day	

FINISHING PROGRAMS	KEY TIPS
Cell Pack , 1 (ppp), 6-8 (weeks), Spring Cell Pack , 1 (ppp), 5-7 (weeks), Summer	Growth Regulators: For warm climates daminozide at 3,500 ppm applied as foliar spray or 2 applications of ancymidol at 20 ppm as a foliar spray. For Northern European conditions 2 to 3 applications plus 3,200 daminozide at 3,200 ppm plus chormequat chloride at 375 ppm is recommended.
Cell Pack , 1 (ppp), 6-8 (weeks), Spring Cell Pack , 1 (ppp), 5-7 (weeks), Summer	Growth Regulators: For warm climates daminozide at 3,500 ppm applied as foliar spray or 2 applications of ancymidol at 20 ppm as a foliar spray. For Northern European conditions 2 to 3 applications plus 3,200 daminozide at 3,200 ppm plus chormequat chloride at 375 ppm is recommended.
4"/4.5"/Quart/10 cm , 1 (ppp), 8-9 (weeks), Spring, PGR daminozide 2,500 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 7 (ppp), 12-14 (weeks), Spring, PGR daminozide 2,500 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Summer, PGR daminozide 2,500 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 7 (ppp), 8-10 (weeks), Summer, PGR daminozide 2,500 ppm Spray	Drench with a fungicide at transplant. Keep light as high as possible ($DLI = 12 \text{ moles-m}^{-2}\text{-d}^{-1}$) while maintaining optimal production temperatures. Maintain even moisture, avoid excessive media and foliage wetness, as these conditions are favourable for disease incidence. Plant growth regulators may not be necessary for this series. Negative DIF can be used to control height. Daminozide and ancymidol can be used for height control if needed.
Cell Pack , 1 (ppp), 5-6 (weeks), Spring, PGR daminozide 2,500 ppm Spray 4"/4.5"/Quart/10 cm , 1-3 (ppp), 5-7 (weeks), Spring, PGR daminozide 2,500 ppm Spray	Drench with a fungicide at transplant. Keep light as high as possible ($DLI = 12 \text{ moles-m}^{-2}\text{-d}^{-1}$) while maintaining optimal production temperatures. Maintain even moisture, avoid excessive media and foliage wetness, as these conditions are favourable for disease incidence. Plant growth regulators may not be necessary for this series. Negative DIF can be used to control height. Daminozide and ancymidol can be used for height control if needed.
Cell Pack , 1 (ppp), 5-6 (weeks), Spring, PGR daminozide 2,500 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring, PGR daminozide 2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 6-8 (weeks), Spring, PGR daminozide 2,500 ppm Spray	Drench with a fungicide at transplant. Keep light as high as possible ($DLI = 12 \text{ moles-m}^{-2}\text{-d}^{-1}$) while maintaining optimal production temperatures. Maintain even moisture and avoid excessive media and foliage wetness, as these conditions are favourable for disease incidence. The Tattoo series displays the best colour contrast under warm conditions with higher light levels. When grown under cooler conditions and lower light levels, the colours will appear to be darker overall with less contrast; colours will brighten with increases in temperature and light. Daminozide and ancymidol can be used for height control if needed.
Cell Pack , 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 4-6 (weeks), Spring	Drench with a fungicide at transplant. Keep light as high as possible ($DLI = 12 \text{ moles-m}^{-2}\text{-d}^{-1}$) while maintaining optimal production temperatures. Maintain even moisture, avoid excessive media and foliage wetness, as these conditions are favourable for disease incidence. Plant growth regulators may not be necessary for this series. Negative DIF can be used to control height. Daminozide and ancymidol can be used for height control if needed.
Cell Pack , 1 (ppp), 3-4 (weeks), Spring, PGR daminozide 2,500 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring, PGR daminozide 2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 4-6 (weeks), Spring, PGR daminozide 2,500 ppm Spray	Drench with a fungicide at transplant. Keep light as high as possible ($DLI = 12 \text{ moles-m}^{-2}\text{-d}^{-1}$) while maintaining optimal production temperatures. Maintain even moisture, avoid excessive media and foliage wetness, as these conditions are favourable for disease incidence. Plant growth regulators may not be necessary for this series. Negative DIF can be used to control height. Daminozide and ancymidol can be used for height control if needed.
Cell Pack , 1 (ppp), 3-4 (weeks), Spring, PGR daminozide 2,500 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring, PGR daminozide 2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 4-6 (weeks), Spring, PGR daminozide 2,500 ppm Spray	Drench with a fungicide at transplant. Keep light as high as possible ($DLI = 12 \text{ moles-m}^{-2}\text{-d}^{-1}$) while maintaining optimal production temperatures. Maintain even moisture and avoid excessive media and foliage wetness, as these conditions are favourable for disease incidence. Plant growth regulators may not be necessary for this series. Negative DIF can be used to control height. Daminozide and ancymidol can be used for height control if needed.
Cell Pack , 1 (ppp), 5-7 (weeks), Early Spring, PGR daminozide 1,500-2,500 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 5-7 (weeks), Early Spring, PGR daminozide 1,500-2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 5-7 (weeks), Early Spring, PGR daminozide 1,500-2,500 ppm Spray Cell Pack , 1 (ppp), 3 (weeks), Autumn, PGR daminozide 2,500-5,000 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Autumn, PGR daminozide 2,500-5,000 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 3-4 (weeks), Autumn, PGR daminozide 2,500-5,000 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions.
Cell Pack , 1 (ppp), 5-7 (weeks), Early Spring, PGR daminozide 1,500-2,500 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 5-7 (weeks), Early Spring, PGR daminozide 1,500-2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 5-7 (weeks), Early Spring, PGR daminozide 1,500-2,500 ppm Spray Cell Pack , 1 (ppp), 3 (weeks), Autumn, PGR daminozide 2,500-5,000 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Autumn, PGR daminozide 2,500-5,000 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 3-4 (weeks), Autumn, PGR daminozide 2,500-5,000 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
ZINNIA <i>Zinnia marylandica</i> Double Zahara™ Series	288	(day) 65-70°F (18-21°C) (night) 59-64°F (15-18°C)	5.5-6.0 pH 1.2-1.5 mmhos/cm	Facultative Short Day	
ZINNIA <i>Zinnia elegans</i> (syn. <i>Zinnia violaceae</i>) Elegant™ Series	288	(day) 70-85°F (21-29°C) (night) 60-68°F (16-20°C)	5.5-6.0 pH 0.75 mmhos/cm	Facultative Short Day	
ZINNIA <i>Zinnia marylandica</i> Zahara® Series	288	(day) 65-70°F (18-21°C) (night) 60-65°F (16-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Facultative Short Day	
ZINNIA <i>Zinnia elegans</i> (syn. <i>Zinnia violaceae</i>) Zesty™ Series	288	(day) 70-85°F (21-29°C) (night) 60-68°F (16-20°C)	5.5-6.0 pH 0.75 mmhos/cm	Facultative Short Day	

FINISHING PROGRAMS	KEY TIPS
4"/4.5"/Quart/10 cm, 1 (ppp), 8-9 (weeks), Spring, PGR daminozide 3,500-5,000 ppm Spray 5"/6"/1 Gallon/15 cm, 3 (ppp), 8-9 (weeks), Spring, PGR daminozide 3,500-5,000 ppm Spray 4"/4.5"/Quart/10 cm, 1 (ppp), 5-6 (weeks), Summer, PGR daminozide 3,500-5,000 ppm Spray 5"/6"/1 Gallon/15 cm, 3 (ppp), 5-6 (weeks), Summer, PGR daminozide 3,500-5,000 ppm Spray	Flowers will be more double, with more intense colour, when grown under high light levels. Avoid excessive moisture on plants and flowers. Monitor for Botrytis.
4"/4.5"/Quart/10 cm, 1 (ppp), 6-7 (weeks), Spring, PGR daminozide 1,500-3,500 ppm Spray 5"/6"/1 Gallon/15 cm, 1 (ppp), 6-7 (weeks), Spring, PGR daminozide 1,500-3,500 ppm Spray 4"/4.5"/Quart/10 cm, 1 (ppp), 6-7 (weeks), Late Spring, PGR paclobutrazol 5 ppm Drench 5"/6"/1 Gallon/15 cm, 1 (ppp), 6-7 (weeks), Late Spring, PGR paclobutrazol 5 ppm Drench	Growth regulators are recommended for pack and container production. Foliar sprays of daminozide at 1,500-3,500 ppm (rate dependent on temperature) applied 2 to 3 times are beneficial for Elegant zinnia. First application can be done 1 week after transplant, followed by a second application 1 week later. If necessary, a third application can be done 3 to 4 weeks after transplant. Adjust PGR rates and frequency of application depending on local conditions. Keep light as high as possible. A DLI below 8 mol·m⁻²·d⁻¹ reduces flower doubleness on this crop.
4"/4.5"/Quart/10 cm, 1 (ppp), 8-9 (weeks), Spring, PGR daminozide 3,500 ppm Spray 5"/6"/1 Gallon/15 cm, 3 (ppp), 8-9 (weeks), Spring, PGR daminozide 3,500 ppm Spray 4"/4.5"/Quart/10 cm, 1 (ppp), 5-6 (weeks), Summer, PGR daminozide 3,500 ppm Spray 5"/6"/1 Gallon/15 cm, 3 (ppp), 5-6 (weeks), Summer, PGR daminozide 3,500 ppm Spray	Avoid excessive moisture on plants and flowers. Monitor for Botrytis.
4"/4.5"/Quart/10 cm, 1 (ppp), 6-7 (weeks), Spring, PGR daminozide 1,500-3,500 ppm Spray 5"/6"/1 Gallon/15 cm, 1 (ppp), 6-7 (weeks), Spring, PGR daminozide 1,500-3,500 ppm Spray 4"/4.5"/Quart/10 cm, 1 (ppp), 6-7 (weeks), Late Spring, PGR paclobutrazol 5 ppm Drench 5"/6"/1 Gallon/15 cm, 1 (ppp), 6-7 (weeks), Late Spring, PGR paclobutrazol 5 ppm Drench	Growth regulators are recommended for pack and container production. Foliar sprays of daminozide at 1,500-3,500 ppm (rate dependent on temperature) applied 2 to 3 times are beneficial for Zesty zinnia. First application can be done 1 week after transplant, followed by a second application 1 week later. If necessary, a third application can be done 3 to 4 weeks after transplant. Adjust PGR rates and frequency of application depending on local conditions. Keep light as high as possible. A DLI below 8 mol·m⁻²·d⁻¹ reduces flower doubleness on this crop.



PERENNIALS



WAVE	PHOTOPERIODIC LIGHTING CHART P. 4
ANNUALS	PROPAGATION GUIDE P. 8 / FINISHING GUIDE P. 44
POTTED PLANTS	PROPAGATION GUIDE P. 114 / FINISHING GUIDE P. 120
CUT FLOWERS	PROPAGATION GUIDE P. 126 / FINISHING GUIDE P. 132
VEGETABLES & HERBS	PROPAGATION GUIDE P. 140 / FINISHING GUIDE P. 154
KITCHEN MINIS	PROPAGATION GUIDE P. 164 / FINISHING GUIDE P. 168

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
AQUILEGIA <i>Aquilegia x hybrida</i> Earlybird™ F1 Series	RAW	288	6-7	1	Optional	7-17	5.8-6.4 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-77°F (22-25°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
AQUILEGIA <i>Aquilegia vulgaris</i> Winky Double Series	RAW	288	7-8	2-3	Light cover	7-12	5.8-6.4 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Optional	
BELLIS <i>Bellis perennis</i> Bellissima™ Series	PEL	512	5-6	1-2	Yes	3-5	5.5-6.2 pH 0.5-0.75 mmhos/cm	(m) Level 4 (t) 65-72°F (18-22°C) (l) Optional	
CAMPANULA <i>Campanula carpatica</i> Rapido F1 Series	PEL	288 128	7-10 12-13	4 4	No	7-9	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 65-72°F (18-22°C) (l) Optional	
COREOPSIS <i>Coreopsis grandiflora</i> Double the Sun	PRM	288 128	5-7 7-8	1-2 2-4	Light cover	3-5	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Optional	
COREOPSIS <i>Coreopsis grandiflora</i> Early Sunrise	PRM	288 128	5-7 7-8	1-2 2-4	Light cover	3-5	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Optional	
COREOPSIS <i>Coreopsis grandiflora</i> Sunfire	PRM	288 128	5-7 7-8	1-2 2-4	Light cover	3-5	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Optional	
COREOPSIS <i>Coreopsis grandiflora</i> SunKiss	PRM	288 128	5-7 7-8	1-2 2-4	Light cover	3-5	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Optional	
DELPHINIUM <i>Delphinium x belladonna</i> Blue Donna	RAW	288	6-8	1	Yes	7-10	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Optional	
DELPHINIUM <i>Delphinium elatum</i> Dasante Blue F1	RAW	288	6-7	1	Yes	7-8	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C) (l) Optional	
DELPHINIUM <i>Delphinium grandiflorum</i> Diamonds Blue F1	RAW	288	6-7	1	Yes	5-7	5.8-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	VERNALISATION REQUIRED	KEY TIPS
	(m) Level 4 (t) 68-73°F (20-23°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) ancymidol 2 ppm Spray	(m) Level 3 (t) 65-70°F (18-21°C) (l) 6-8 mol-m ⁻² -d ⁻¹ , 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 2 ppm Spray	(m) Level 2 (t) 60-65°F (16-18°C) (l) 6-8 mol-m ⁻² -d ⁻¹ , 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 2 ppm Spray	Yes - Low vernalisation requirement, only 4 weeks at 50-55°F (10-13°C) from 5 to 6 true leaves onwards.	Maintaining moisture above level 3 in Stage 1 and 2 is critical for germination and seedling development. Responsive to weekly ancymidol 2 ppm spray or ancymidol 2 ppm/daminozide 2,500 ppm tank mix beginning 3 weeks from sowing.
	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Yes - duration of 8 to 10 weeks; juvenility min. 10 to 12 true leaves	
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 6-8 mol-m ⁻² -d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 6-8 mol-m ⁻² -d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 6-8 mol-m ⁻² -d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	Use a medium covering of coarse-grade vermiculite to improve seedling uniformity.
	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 6-8 mol-m ⁻² -d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 60-65°F (16-18°C) (l) 6-8 mol-m ⁻² -d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 6-8 mol-m ⁻² -d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	Avoid high EC in early plug stage - maximum 0.5 in Stages 1 and 2. Grow at less than 13 hours to keep vegetative. Spray damp-off fungicide. For forcing info: See Perennials Forcing Guide
	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 6-8 mol-m ⁻² -d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 8-10 mol-m ⁻² -d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 1-2 (t) 60-65°F (16-18°C) (l) 8-10 mol-m ⁻² -d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	No	Critical Daylength: 11 hours for 100% flowering but up to 3 weeks faster flowering at ≥13 hours than shorter photoperiods. For forcing info: See Perennials Forcing Guide. 1 to 2 seeds for 288/3 to 4 for 84. Plug PGRs: For Spring production, no PGRs needed. For Summer production under long day conditions, can use daminozide (1,500 to 2,500 ppm spray). Short day bulk not needed for Autumn sales.
	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 6-8 mol-m ⁻² -d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 8-10 mol-m ⁻² -d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 1-2 (t) 60-65°F (16-18°C) (l) 8-10 mol-m ⁻² -d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	No	Critical Daylength: 14 hours. For forcing info: See Perennials Forcing Guide. 1 to 2 seeds for 288/4 to 6 seeds for 84. Plug PGRs: For Spring production, no PGRs needed. For Summer production under long day conditions, can use daminozide (1,500 to 2,500 ppm spray). Short day bulk not needed for Autumn sales.
	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 6-8 mol-m ⁻² -d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 8-10 mol-m ⁻² -d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 1-2 (t) 60-65°F (16-18°C) (l) 8-10 mol-m ⁻² -d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	No	Critical Daylength: 13 hours. Short day (10 hours) bulk needed for forcing. For forcing info: See Perennials Forcing Guide. 1 to 2 seeds for 288/3 to 4 seeds for 84. Plug PGRs: For Spring production, no PGRs needed. For Summer production under long day conditions, can use daminozide (1,500 to 2,500 ppm spray).
	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 6-8 mol-m ⁻² -d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 8-10 mol-m ⁻² -d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 1-2 (t) 60-65°F (16-18°C) (l) 8-10 mol-m ⁻² -d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	No	Critical Daylength: 12.5 hours. Short day (at 10 hours) bulk needed for forcing. For forcing info: See Perennials Forcing Guide. 1 seed for 288/3 to 4 seeds for 84. Plug PGRs: For Spring production, no PGRs needed. For Summer production under long day conditions, can use daminozide (1,500 to 2,500 ppm spray). Short day bulk not needed for Autumn sales.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 6-8 mol-m ⁻² -d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 6-8 mol-m ⁻² -d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 6-8 mol-m ⁻² -d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	For forcing info: See Perennials Forcing Guide. Spray damp-off fungicide.
	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	For forcing info: See Perennials Forcing Guide. Avoid low light conditions.

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
DELPHINIUM <i>Delphinium elatum</i> Guardian F1 Series	RAW	288	6-7	1	Yes	7-8	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C) (l) Optional	
DIANTHUS <i>Dianthus x barbatus interspecific</i> Rockin'™ F1 Series	PEL	288	4-6	1	Yes	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-68°F (18-20°C) (l) Optional	
DIGITALIS <i>Digitalis purpurea</i> Dalmatian F1 Series	PEL	288 128	5-6 6-7	1 3	No	5-6	5.8-6.2 pH 0.7-1.0 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Light	
ECHINACEA <i>Echinacea x hybrida</i> Artisan™ Collection F1	AMP	128 72	5-6 11-13	1 1	Yes	4-10	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 71-77°F (22-25°C) (l) Optional	
ECHINACEA <i>Echinacea x hybrida</i> Cheyenne Spirit	RAW	128 72	5-6 11-13	1 1	Yes	4-14	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 71-76°F (22-24°C) (l) Optional	
ECHINACEA <i>Echinacea purpurea</i> PowWow® Series	RAW	128 72	5-6 11-13	1 1	Yes	4-14	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 71-76°F (22-24°C) (l) Optional	
GAILLARDIA <i>Gaillardia x grandiflora</i> , <i>Gaillardia aristata x</i> <i>Gaillardia pulchella</i> Mesa Series	RAW	128 288	6-7 5-6	1 1	Yes	4-5	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 68-73°F (20-23°C) (l) Optional	
GAURA <i>Gaura lindheimeri</i> Sparkle White	RAW	288	5-6	1	Yes	5-6	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Optional	
HEUCHERA <i>Heuchera sanguinea</i> Heucherette™ Series	PEL	128 72	8-10 9-12	3 4	No	12-14	5.8-6.4 pH 1.0-1.2 mmhos/cm	(m) Level 3-4 (t) 68-71°F (20-22°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	

	STAGE 2	STAGE 3	STAGE 4	VERNALISATION REQUIRED	KEY TIPS
	(m) Level 3 (t) 65-70°F (18-21°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	For forcing info: See Perennials Forcing Guide. Best germinated in germ chamber with 95 to 97% RH in Stage 1. Maximum EC in propagation: 1.0.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 5-8 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 8-10 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) paclobutrazol 4-6 ppm Spray	(m) Level 2-3 (t) 55-60°F (13-16°C) (l) 10 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	No	Paclobutrazol spray at 3-5 ppm at sowing will help control hypocotyl stretch.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) daminozide 2,000 ppm Spray or paclobutrazol 5 ppm Spray or uniconazole 3 ppm Spray	(m) Level 3 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,000 ppm Spray or paclobutrazol 5 ppm Spray or uniconazole 3 ppm Spray	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,000 ppm Spray or paclobutrazol 5 ppm Spray or uniconazole 3 ppm Spray	No	Critical Daylength: 14 hours. Short day (10 hours) bulk needed for forcing. For forcing info: See Perennials Forcing Guide. Spray damp-off fungicide.
	(m) Level 3-4 (t) 71-73°F (22-23°C) (l) 5-8 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 10 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 65-67°F (18-19°C) (l) 10-15 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	No	Forcing Protocol: Produce plug or liner to the 2 fully mature leaf stage. At the 2 fully mature leaf stage, begin short day conditions. Continue short day conditions until plant reaches 7 fully mature leaves. The 128 is the minimum size for SD grown plugs to 7 fully mature leaves. For more forcing info: See Perennials Forcing Guide and GrowerFacts Extra Spring and Fall forcing.
	(m) Level 3-4 (t) 71-73°F (22-23°C) (l) 5-8 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 10 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 65-67°F (18-19°C) (l) 10-15 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	No	Forcing Protocol: Produce plug or liner to the 2 fully mature leaf stage. At the 2 fully mature leaf stage, begin short day conditions. Continue short day conditions until plant reaches 7 fully mature leaves. The 128 is the minimum size for SD grown plugs to 7 fully mature leaves. For more forcing info: See Perennials Forcing Guide and GrowerFacts Extra Spring and Fall forcing.
	(m) Level 3-4 (t) 71-73°F (22-23°C) (l) 5-8 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 10 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 65-67°F (18-19°C) (l) 10-15 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	No	Forcing Protocol: Produce plug or liner to the 2 fully mature leaf stage. At the 2 fully mature leaf stage, begin short day conditions. Continue short day conditions until plant reaches 7 fully mature leaves. The 128 is the minimum size for SD grown plugs to 7 fully mature leaves. For more forcing info: See Perennials Forcing Guide and GrowerFacts Extra Spring and Fall forcing.
	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-67°F (18-19°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	(m) Level 2-4 (t) 59-64°F (15-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	No	For forcing info: See Perennials Forcing Guide.
	(m) Level 3-4 (t) 66-70°F (19-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2 (t) 65-67°F (18-19°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 59-64°F (15-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	For forcing info: See Perennials Forcing Guide. Gaura seed is a nutlet with 2 to 3 seeds, so plug cells may have greater than one seedling.
	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 4-5 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 63-66°F (17-19°C) (l) 4-8 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 61-65°F (16-18°C) (l) 6-10 mol·m ⁻² ·d ⁻¹ (f) 150 to 175 ppm N (1.0 to 1.2 EC)	No	1. High humidity surrounding the pelleted seed will improve the germination rate at the early germination and seedling production stage. 2. The germination and usability rate is significantly improved by covering with Reemay, or growing under a tent, or growing on a mist bench, from OGC* to 2 true leaf stage (about 3 weeks). 3. Do not overwater the plug tray, as it could suffocate the tiny seed. Use the mist nozzle and keep the soil moisture level between 3 to 4. *OGC: out of germination chamber

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
HEUCHERA <i>Heuchera x hybrida</i> Melting Fire	PEL	288 128	9-11 10-11	4-5 6-8	No	9-21	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Light	
HEUCHERA <i>Heuchera micrantha</i> Palace Purple	PEL	288 128	6-8 8-9	4 6	No	7-10	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 68-72°F (20-22°C) (l) Light	
HIBISCUS <i>Hibiscus moscheutos</i> Luna™ F1 Series	RAW	288 128	3-4 4	1 1	Yes	3-5	5.5-6.3 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-75°F (20-24°C) (l) Dark	
IBERIS <i>Iberis sempervirens</i> Whiteout F1	RAW	288	7-8	3-4	Yes	4-7	5.5-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 61-65°F (16-18°C) (l) Optional	
LAVANDULA <i>Lavandula angustifolia</i> Avignon Early Blue	PRM	288 128	6-8 8-9	4 6	Yes	4-5	5.8-6.5 pH 0.7-1.2 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Light	
LAVANDULA <i>Lavandula stoechas</i> Bandera Series	RAW	288 128	6-7 7-8	1 1	Yes	3-5	5.5-6.2 pH 1.0-1.2 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Light	
LAVANDULA <i>Lavandula angustifolia</i> Blue Spear	PRM	288 128	6-8 8-9	3-4 5-6	Yes	4-5	5.8-6.5 pH 0.7-1.2 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Light	

	STAGE 2	STAGE 3	STAGE 4	VERNALISATION REQUIRED	KEY TIPS
	(m) Level 4-3 (t) 65-68°F (18-20°C) (l) 4-5 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 4-3 (t) 65-68°F (18-20°C) (l) 4-8 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-2 (t) 65-68°F (18-20°C) (l) 6-10 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No - vernalisation not needed when sold for foliage	During Stage 1, maintain media moisture at level 4 and RH at 80%. Saturated level 5 media moisture and reduced or fluctuating humidity in Stage 1 can decrease germination and uniformity. Upon removal from germination chamber, place in propagation house with bottom heat at 65-68°F/18-20°C media temperature. Use light mist to maintain humidity, allowing media to dry to moisture level 3.5 and mist at level 3. Maintain under mist for up to 3 weeks as this variety germinates slowly in 2 to 3 flushes. Spray fungicide to prevent damping off. For forcing info: See Perennials Forcing Guide.
	(m) Level 4-3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,500-3,500 f.c. (26,900-37,700 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	No - vernalisation not needed when sold for foliage	During Stage 1, maintain media moisture at level 4 and RH at 80%. Saturated level 5 media moisture and reduced or fluctuating humidity in Stage 1 can decrease germination and uniformity. Upon removal from germination chamber, place in propagation house with bottom heat at 65-68°F/18-20°C media temperature. Use light mist to maintain humidity, allowing media to dry to moisture level 3.5 and mist at level 3. Maintain under mist for 7 to 10 days. This is a non-erratic germinator. Spray fungicide to prevent damping off. For forcing info: See Perennials Forcing Guide.
	(m) Level 3 (t) 68-71°F (20-22°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 68-71°F (20-22°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) chlormequat chloride 300 ppm Spray	(m) Level 2 (t) 68-71°F (20-22°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) chlormequat chloride 300 ppm Spray	No - damage to plugs results below 41°F (5°C)	For forcing info: See Perennials Forcing Guide. Cover seed with plug media. Grow plants under daily average temperature above 68°F (20°C) and keep media moist to wet. Use PGRs in warmer conditions from true leaf stage onwards: tank mix of chlormequat chloride 300 ppm and daminozide 2,500 ppm.
	(m) Level 3 (t) 61-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux)	(m) Level 2 (t) 61-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux)	(m) Level 2 (t) 61-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux)	Yes - minimum 8 to 10 weeks. Plants should be bulked for about 8 to 10 weeks before being receptive to cold treatment.	No pinching needed.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 2,500-3,500 f.c. (26,900-37,700 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) daminozide 1,000- 2,000 ppm Spray	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) daminozide 1,000- 2,000 ppm Spray	No	For forcing info: see Perennials Forcing Guide. For scheduling info: see Lavender scheduling tool. Spray damp-off fungicide. Provide good ventilation and active respiration in plug production. Grow on the dry side, with watering in early morning, to allow plugs to dry up during the day. If respiration and fertilisation are too low, Lavandula angustifolia can show "black spots" on cotyledons due to root pressure damage. This is reversible with improved ventilation and higher fertilisation.
	(m) Level 3 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	At sowing, do not cover the seeds too heavily, as it will significantly decrease germination. At Stage 1 germination, pull from the germination chamber at 10 to 15% visible radicle emergence and grow at 60 to 65°F (16 to 18°C) to avoid stretch. L. stoechas may stretch easily at higher temperatures in the early plug phase. Keep active growing environment. Spray damp-off fungicide. Genetically compact plants should not need PGRs in plug production. If needed, use daminozide spray 2,500 ppm. High pH (> 6.8) causes chlorosis. For forcing info: See Perennials Forcing Guide. See Lavender Scheduling Tool at panamseed.com for finishing schedules by region.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 2,500-3,500 f.c. (26,900-37,700 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) daminozide 1,000- 2,000 ppm Spray	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) daminozide 1,000- 2,000 ppm Spray	No	For forcing info: see Perennials Forcing Guide. For scheduling info: see Lavender scheduling tool. Spray damp-off fungicide. Provide good ventilation and active respiration in plug production. Grow on the dry side, watering in the early morning to allow the plugs to dry up during the day. If respiration and fertilisation are too low, Lavandula angustifolia can show "black spots" on cotyledons due to root pressure damage. This is reversible with improved ventilation and higher fertilisation.

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
LAVANDULA <i>Lavandula angustifolia</i> Ellagance Series	PRM	288 128	6-8 8-9	4 6	Yes	4-5	5.8-6.5 pH 0.7-1.2 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Light	
LAVANDULA <i>Lavandula angustifolia</i> Lavance Deep Purple	PRM	288 128	6-8 8-9	4 6	Yes	4-5	5.8-6.5 pH 0.7-1.2 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C)	
LAVANDULA <i>Lavandula multifida</i> Spanish Eyes	RAW	288	5-6	2-4	Light cover	4-5	5.8-6.2 pH 0.7-1.2 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Light	
LEUCANTHEMUM <i>Leucanthemum x superbum</i> Madonna F1	RAW	288 72	6-7 7-8	1 4	Optional	4-10	5.5-6.2 pH 0.2-0.5 mmhos/cm	(m) Level 4 (t) 68-77°F (20-25°C) (l) Optional	
LEUCANTHEMUM <i>Leucanthemum x superbum</i> White Lion F1	RAW	288 72	6-7 7-8	1 4	Optional	4-10	5.5-6.2 pH 0.2-0.5 mmhos/cm	(m) Level 4 (t) 68-77°F (20-25°C) (l) Optional	
LOBELIA <i>Lobelia x speciosa</i> Starship™ F1 Series	PEL	288 105	8-10 9-11	1 4-5	Light cover	8-14	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-77°F (22-25°C) (l) Light	
MYOSOTIS <i>Myosotis sylvatica</i> Mon Amie Series	RAW	288	4-5	1	No	3-5	5.6-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Optional	
PAPAVER <i>Papaver nudicaule</i> Champagne Bubbles F1 Series	PRM	288	4-5	1	Light cover	7-12	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-68°F (18-20°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	VERNALISATION REQUIRED	KEY TIPS
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 2,500-3,500 f.c. (26,900-37,700 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) daminozide 1,000- 2,000 ppm Spray	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) daminozide 1,000- 2,000 ppm Spray	No	For forcing info: see Perennials Forcing Guide. For scheduling info: see Lavender scheduling tool. Spray damp-off fungicide. Provide good ventilation and active respiration in plug production. Grow on the dry side, with watering in early morning, to allow plugs to dry up during the day. If respiration and fertilisation are too low, <i>Lavandula angustifolia</i> can show "black spots" on cotyledons due to root pressure damage. This is reversible with improved ventilation and higher fertilisation.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 2,500-3,500 f.c. (26,900-37,700 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	No	For forcing info: see Perennials Forcing Guide. For scheduling info: see Lavender scheduling tool. Spray damp-off fungicide. Provide good ventilation and active respiration in plug production. Grow on the dry side, with watering in early morning, to allow plugs to dry up during the day. If respiration and fertilisation are too low, <i>Lavandula angustifolia</i> can show "black spots" on cotyledons due to root pressure damage. This is reversible with improved ventilation and higher fertilisation.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (p) daminozide 1,500- 2,500 ppm Spray	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (p) daminozide 1,500- 2,500 ppm Spray	No	Spray preventive fungicide against damping off. Grow in an active growing climate.
	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 3,000-5,000 f.c. (32,300-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 5,000-7,000 f.c. (53,800-75,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 5,000-7,000 f.c. (53,800-75,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	Avoid high soluble salts. Provide an active climate, including air movement and relatively high light levels. Do not grow too long, as old plugs show irregular growing after transplant.
	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 3,000-5,000 f.c. (32,300-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 5,000-7,000 f.c. (53,800-75,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 5,000-7,000 f.c. (53,800-75,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	Avoid high soluble salts. Provide an active climate, including air movement and relatively high light levels. Do not grow too long, as old plugs show irregular growing after transplant.
	(m) Level 4-3 (t) 68-73°F (20-23°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 1,500- 2,500 ppm Spray	(m) Level 3-2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 1,500- 2,500 ppm Spray	No	Critical Daylength: 13 hours. Short day (10 hours) bulk needed for forcing. Spring forcing for Week 19 sales: Use 72 plug. Fall forcing for Week 36 sales: Use 288 plug. For more forcing info: See Perennials Forcing Guide. Needs light for germination, but avoid drying out (light vermiculite cover advised). Grow plugs at 10 hours or less for at least the first 8 weeks from sowing to keep vegetative. Keep medium moisture level 4 and RH 80% on Stage 1; not too wet! Upon removal from germ chamber, place in prop house with bottom heat (70°F/21°C). Use very light mist to maintain high humidity (70%+). When media reaches level 3, trays need to be mist watered again. Trays would stay in propagation under mist up to 3 weeks. Starship Deep Rose has 7 to 10 days longer plug lead time, due to a slower start.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 3,000-4,000 f.c. (32,300-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	Maintain low pH to avoid chlorosis.
	(m) Level 3 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	Spray damp-off fungicide. Avoid high pH (>6.1) that causes chlorosis from iron deficiency.

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
PENSTEMON <i>Penstemon heterophyllus</i> Electric Blue	RAW	288	4-5	1	No	8-10	5.8-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-74°F (18-23°C) (l) Optional	
PEROVSKIA <i>Perovskia atriplicifolia</i> Blue Steel	RAW	288 72	5-9 7-10	1 3-4	Light cover	2-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 65-72°F (18-22°C) (l) Optional	
PEROVSKIA <i>Perovskia atriplicifolia</i> Bluesette	RAW	288 72	5-6 7-8	1 3-4	Light cover	2-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-77°F (20-25°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
RUDBECKIA <i>Rudbeckia fulgida</i> var. <i>sullivantii</i> Goldblitz	PRM	288 72	6-8 12-14	1 2-3	Light cover	2-4	5.8-6.5 pH 0.75 mmhos/cm	(m) Level 5-4 (t) 72-77°F (22-25°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
RUDBECKIA <i>Rudbeckia fulgida</i> var. <i>sullivantii</i> Goldsturm	PRM	288 72	6-8 14	2 3-4	Yes	3-5	5.8-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-77°F (22-25°C) (l) Optional	
SALVIA <i>Salvia nemorosa</i> New Dimension™ Series	TRN	288 128	5-6 7	2-4 4-6	Light cover	3-4	5.5-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Optional	
SALVIA <i>Salvia patens</i> Patio Series	RAW	288 128	5-6 7	1 2-3	No	4-7	5.8-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Light	
SALVIA <i>Salvia nemorosa</i> Salvatore Blue	TRN	288 128	5-6 5-6	1 2-3	Light cover	3-4	5.5-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Optional	
SCABIOSA <i>Scabiosa columbaria</i> Blue Note	RAW	288 128	6-8 8-9	2-3 4-5	Yes	8-10	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Dark	

	STAGE 2	STAGE 3	STAGE 4	VERNALISATION REQUIRED	KEY TIPS
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 3,000-4,000 f.c. (32,300-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No - but beneficial; cooled plants flower more uniformly and faster than non-cooled plants; duration of 10 weeks at 41°F (5°C)	Needs active growing climate.
	(m) Level 4 (t) 65-72°F (18-22°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	(m) Level 3 (t) 64-68°F (18-20°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) daminozide 2,500 ppm Spray	(m) Level 2 (t) 60-65°F (16-18°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) daminozide 2,500 ppm Spray	No	Light Accumulator, Daylength Neutral. For forcing info: See Perennials Forcing Guide. 2 to 3 seeds per cell for larger plugs (128 and up): see GrowerFacts. For plug size 180 and larger, pinch* plugs at 3 to 4 node pairs. 288 plugs are difficult to pinch, so pinch at 2 to 3 weeks after transplant. Plug lead time varies with season and plug size: see GrowerFacts. Spray fungicide against damping off, directly after sowing. *For larger (2 gallon and up) containers, plugs do not need to be pinched during plug production or after transplant. Instead, use a stronger PGR, daminozide at 5,000 ppm 1 or 2 applications at 2 to 3 weeks after transplant.
	(m) Level 4-3 (t) 68-73°F (20-23°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(t) 64-68°F (18-20°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	(t) 60-65°F (16-18°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	No	For forcing info: See Perennials Forcing Guide. Genetically compact variety requires an active climate. No PGRs needed, except in unfavourable climate conditions, the daminozide 1x spray at 1,500 ppm could be used. Pinching not really needed, optional for smaller containers; pinch at 3 to 4 nodes, approximately 2 to 3 weeks after transplant. Difficult to pinch in plug stage. Spray fungicide directly after sowing to prevent damping off.
	(m) Level 4 (t) 68-74°F (20-23°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	(m) Level 3 (t) 60-65°F (16-18°C) (l) 2,500-3,500 f.c. (26,900-37,700 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	No	Goldblitz does NOT require SD plug treatment, NOR vernalisation for your Summer Sales program. For forcing info: See Perennials Forcing Guide.
	(m) Level 3-4 (t) 68-74°F (20-23°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	Annual program for late Summer flowering: provide 10-hour short days. Bulk from 2 true leaves (approximately 4 weeks after sowing) until 10 true leaves for more uniform flowering. Step up 288 plugs into 72 or 50 cell, maintaining 10-hour short days. For forcing info: See Perennials Forcing Guide.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	Critical Daylength: 14 hours. Short day (10 hours) bulk needed for forcing. For forcing info: See Perennials Forcing Guide. Spray damp-off fungicide.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 1,000- 2,000 ppm Spray	(m) Level 1-2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 1,500- 2,000 ppm Spray	No	Short day (10 hours) bulk needed for forcing. For forcing info: See Perennials Forcing Guide.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 1,000- 1,500 ppm Spray	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) daminozide 1,500- 2,000 ppm Spray	No	Grow in an active climate. Avoid moist and high relative humidity.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	Short day (10 hours) bulk needed for forcing and minimum temperature of 62 to 65°F (17 to 18°C) for 6 weeks. For forcing info: See Perennials Forcing Guide. Spray damp-off fungicide.

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
SEDUM <i>Hylotelephium</i> (<i>Sedum</i>) <i>spectabile</i> Spectacular	MPL	128 72	7-8 8-9	1 1	No	3-7	5.8-6.2 pH 0.8-1.0 mmhos/cm	(m) Level 4 (t) 64-77°F (18-25°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
VERBASCUM <i>Verbascum x hybrida</i> Southern Charm	RAW	288	4-5	1	Yes	3-7	5.8-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Dark	
VERBENA <i>Verbena bonariensis</i> Buenos Aires	PRM	288 128	6-7 8	4 4	Yes	7-10	5.5-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-72°F (20-22°C) (l) Dark	
VERBENA <i>Verbena rigida</i> Santos Purple	PRM	288 128	6-7 8	4 4	Yes	7-10	5.5-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Dark	

	STAGE 2	STAGE 3	STAGE 4	VERNALISATION REQUIRED	KEY TIPS
	(m) Level 4-3 (t) 63-73°F (17-23°C) (l) 5-8 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 63-71°F (17-22°C) (l) 9-11 mol·m ⁻² ·d ⁻¹ (f) 150 to 175 ppm N (1.0 to 1.2 EC) (p) daminozide 2,000-2,500 ppm Spray	(m) Level 2 (t) 61-68°F (16-20°C) (l) 10-15 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	No	Maintain active airflow and avoid growing wet. Avoid flower initiation by growing plugs at <13 hrs. daylength and NOT using night interruption. PGRs are optional; only use daminozide spray at 2,500 ppm one time approximately 5 weeks after sowing. Plug forcing is possible. Use 84 or 72 trays and grow in short days at <13 hrs. for approximately 8 weeks until 8 leaves, and then 4 weeks at 16 hrs. daylength or night interruption. Plug sizes matter, subject to pot size. For smaller pot sizes up to 5 in./13 cm, use 1 plug per pot with a 128 or 180 plug size. For larger pot sizes of 6 in./15 cm or 1 gal., use 1 plug per pot with a larger plug size of 72 or 84 for optimal fill. For larger pot sizes, we advise 2 to 3 plugs per pot with a minimum plug size of 180.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	
	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide/ chlormequat chloride tank mix 1,500/200- 2,500/300 ppm Spray	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide/ chlormequat chloride tank mix 2,500/300- 3,750/500 ppm Spray	No	For forcing info: See Perennials Forcing Guide. Spray damp-off fungicide. Grow relatively dry after Stage 1.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide/ chlormequat chloride tank mix 1,500/200- 2,500/300 ppm Spray	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide/ chlormequat chloride tank mix 2,500/300- 3,750/500 ppm Spray	No	For forcing info: see Perennials Forcing Guide. Spray damp-off fungicide.

CLASS/SERIES	HARDINESS ZONE	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
AQUILEGIA <i>Aquilegia x hybrida</i> Earlybird™ F1 Series	3-9	288	(day) 65-68°F (18-20°C) (night) 50-54°F (10-12°C)	5.8-6.2 pH 1.3-1.8 mmhos/cm	Day Neutral	
AQUILEGIA <i>Aquilegia vulgaris</i> Winky Double Series	3-8	288	(day) 60-72°F (16-22°C) (night) 50-59°F (10-15°C)	5.8-6.2 pH 1.0-1.5 mmhos/cm	Day Neutral Aquilegia is a day-neutral plant after vernalisation. Long days of 14 hours or longer could stimulate stem elongation and slightly hasten flowering after the vernalisation period.	
BELLIS <i>Bellis perennis</i> Bellissima™ Series	4-7	512	(day) 60-65°F (16-18°C) (night) 40-45°F (4-7°C)	5.5-6.4 pH 1.1-1.3 mmhos/cm	Day Neutral	
CAMPANULA <i>Campanula carpatica</i> Rapido F1 Series	3-9	288 128	(day) 65-68°F (18-20°C) (night) 55-60°F (13-16°C)	5.6-6.2 pH 1.0-1.3 mmhos/cm	Obligate Long Day Long day required (14 hours or 4-hour NI) until buds are visible.	
COREOPSIS <i>Coreopsis grandiflora</i> Double the Sun	4-9	288 128	(day) 60-70°F (16-21°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Obligate Long Day Long Day required; minimum 11 hours for 100% flowering but up to 3 weeks faster flowering at ≥13 hours.	
COREOPSIS <i>Coreopsis grandiflora</i> Early Sunrise	4-9	288 128	(day) 60-70°F (16-21°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Obligate Long Day Long day required - minimum 14 hours.	
COREOPSIS <i>Coreopsis grandiflora</i> Sunfire	4-9	288 128	(day) 60-70°F (16-21°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Obligate Long Day Long day required - minimum 13 hours.	

	VERNALISATION REQUIRED	FINISHING PROGRAMS FOR ANNUAL AND OVERWINTER PRODUCTION	KEY TIPS
	Yes - Low vernalisation requirement, only 4 weeks at 50-55°F (10-13°C) from 5 to 6 true leaves onwards.	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 12-16 (weeks), Spring, ADT 55°F (13°C) PGR daminozide/ancymidol tank mix 2,500-10 ppm Spray Overwinter, 4"/4.5"/Quart/10 cm , 1 (ppp), 20-30 (weeks), Early Spring, ADT 50°F (10°C) PGR daminozide/ancymidol tank mix 2,500-10 ppm Spray Overwinter, 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 20-30 (weeks), Early Spring, ADT 50°F (10°C) PGR daminozide/ancymidol tank mix 2,500-10 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 13-16 (weeks), Spring, ADT 55°F (13°C) PGR daminozide/ancymidol tank mix 2,500-10 ppm Spray	Avoid flowering beneath the foliage in very short natural daylength period. When producing under natural daylength shorter than 11 hours, 15 minutes during flower development stage (about 4 weeks from your target sales date), flowers could hide beneath foliage. Supplemental long day lighting (night interruption from 10 p.m. to 2 a.m. or 16-hour daylength extension) will achieve flower stem elongation.
	Yes - duration of 8 to 10 weeks; juvenility min. 10 to 12 true leaves	Overwinter, 4"/4.5"/Quart/10 cm , 1-2 (ppp), 32-40 (weeks), Spring PGR daminozide 1,250-2,500 ppm Spray Overwinter, 5"/6"/1 Gallon/15 cm , 2-4 (ppp), 32-40 (weeks), Spring PGR daminozide 1,250-2,500 ppm Spray	Keep RH at optimum 65%. Outside crops can be forced indoors at 54 to 59°F (12 to 15°C).
	No	Annual, 306 Pack/1801 , 1 (ppp), 6-8 (weeks), Autumn PGR daminozide 1,000-2,000 ppm Spray Annual, 306 Pack/1801 , 1 (ppp), 6-8 (weeks), Winter PGR daminozide 1,000-2,000 ppm Spray Overwinter, 5"/6"/1 Gallon/15 cm , 1 (ppp), 16-24 (weeks), Early Spring PGR daminozide 1,000-2,000 ppm Spray	Grow as cool as possible but avoid freezing temperatures. For forcing the crop when grown at these temperatures, grow at 55 to 58°F (10 to 12°C) for 4 weeks before sale. PGR for EU is Tilt (propiconazole) at 200 to 300 ppm.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 12-14 (weeks), Late Spring PGR chlormequat chloride 750 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 12-14 (weeks), Late Spring PGR daminozide 2,000-2,500 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-12 (weeks), Summer PGR chlormequat chloride 750 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-12 (weeks), Summer PGR daminozide 2,000-2,500 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 3-5 (ppp), 12-14 (weeks), Late Spring PGR chlormequat chloride 750 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 3-5 (ppp), 12-14 (weeks), Late Spring PGR daminozide 2,000-2,500 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 3-5 (ppp), 9-12 (weeks), Summer PGR chlormequat chloride 750 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 3-5 (ppp), 9-12 (weeks), Summer PGR daminozide 2,000-2,500 ppm Spray	Moist, well-drained medium. Growing too cool delays both plug and finished plant. Long day Summer decreases plant bulk. Use more plugs per container compared to Spring.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Summer, ADT 72°F (22°C) PGR daminozide 2,500-3,000 ppm Spray Forcing, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Late Spring, ADT 72°F (22°C) PGR daminozide 2,500-3,000 ppm Spray Forcing, 4"/4.5"/Quart/10 cm , 1 (ppp), 10-11 (weeks), Autumn, ADT 72°F (22°C) PGR daminozide 2,500-3,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 9-11 (weeks), Summer, ADT 72°F (22°C) PGR daminozide 2,500-3,000 ppm Spray Forcing, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-11 (weeks), Late Spring, ADT 72°F (22°C) PGR daminozide 2,500-3,000 ppm Spray Forcing, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-11 (weeks), Autumn, ADT 72°F (22°C) PGR daminozide 2,500-3,000 ppm Spray	Apply PGRs when buds are visible.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 11-13 (weeks), Summer PGR daminozide 5,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 12-13 (weeks), Summer PGR daminozide 5,000 ppm Spray Forcing, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 12-13 (weeks), Late Spring, ADT 68°F (20°C) PGR daminozide 2,500-5,000 ppm Spray Forcing, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 11-12 (weeks), Autumn, ADT 72°F (22°C) PGR daminozide 2,500-5,000 ppm Spray	Apply PGRs when buds are visible.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 10 (weeks), Summer PGR daminozide 5,000 ppm Spray Forcing, 4"/4.5"/Quart/10 cm , 1 (ppp), 11 (weeks), Late Spring, ADT 68°F (20°C) PGR daminozide 2,500-5,000 ppm Spray Forcing, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 11-12 (weeks), Late Spring, ADT 68°F (20°C) PGR daminozide 2,500-5,000 ppm Spray Forcing, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 11-12 (weeks), Autumn, ADT 72°F (22°C) PGR daminozide 2,500-5,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-11 (weeks), Summer PGR daminozide 5,000 ppm Spray	Apply PGRs when buds are visible.

CLASS/SERIES	HARDINESS ZONE	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
COREOPSIS <i>Coreopsis grandiflora</i> SunKiss	4-9	288 128	(day) 60-70°F (16-21°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Obligate Long Day Long day required - minimum 12.5 hours.	
DELPHINIUM <i>Delphinium x belladonna</i> Blue Donna	5-9	288	(day) 65-70°F (18-21°C) (night) 57-60°F (14-16°C)	5.8-6.2 pH 1.3-1.6 mmhos/cm	Day Neutral	
DELPHINIUM <i>Delphinium elatum</i> Dasante Blue F1	4-7	288	(day) 65-70°F (18-21°C) (night) 55-63°F (13-17°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral	
DELPHINIUM <i>Delphinium grandiflorum</i> Diamonds Blue F1	4-9	288	(day) 65-70°F (18-21°C) (night) 55-63°F (13-17°C)	5.6-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
DELPHINIUM <i>Delphinium elatum</i> Guardian F1 Series	4-7	288	(day) 65-70°F (18-21°C) (night) 60°F (16°C)	5.8-6.2 pH 1.4-1.5 mmhos/cm	Facultative Long Day	
DIANTHUS <i>Dianthus x barbatus interspecific</i> Rockin'™ F1 Series	5-8	288	(day) 60-72°F (16-22°C) (night) 50-60°F (10-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day Long day beneficial	

	VERNALISATION REQUIRED	FINISHING PROGRAMS FOR ANNUAL AND OVERWINTER PRODUCTION	KEY TIPS
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Summer, ADT 72°F (22°C) PGR daminozide 5,000 ppm Spray Forcing, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Late Spring, ADT 72°F (22°C) PGR daminozide 2,500-5,000 ppm Spray Forcing, 4"/4.5"/Quart/10 cm , 1 (ppp), 10-11 (weeks), Autumn, ADT 72°F (22°C) PGR daminozide 2,500-5,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-11 (weeks), Summer, ADT 72°F (22°C) PGR daminozide 5,000 ppm Spray Forcing, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-11 (weeks), Autumn, ADT 72°F (22°C) PGR daminozide 2,500-5,000 ppm Spray Forcing, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-11 (weeks), Late Spring, ADT 72°F (22°C) PGR daminozide 2,500-5,000 ppm Spray	Apply PGRs when buds are visible.
	No	Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-12 (weeks), Summer PGR paclobutrazol 20 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 11-13 (weeks), Spring PGR paclobutrazol 20 ppm Spray	See Cut Flower section for cut flower production for both field and greenhouse. Monitor for powdery mildew.
	No	Overwinter, 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 20-24 (weeks), Early Spring, ADT 55°F (13°C) PGR paclobutrazol 20 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 12-16 (weeks), Spring, ADT 60°F (16°C) PGR paclobutrazol 20 ppm Spray Overwinter, 8"/2 Gallon/20 cm , 3 (ppp), 20-24 (weeks), Early Spring, ADT 55°F (13°C) PGR paclobutrazol 20 ppm Spray Annual, 8"/2 Gallon/20 cm , 3 (ppp), 12-16 (weeks), Spring, ADT 60°F (16°C) PGR paclobutrazol 20 ppm Spray	Keep light levels as high as possible. No pinching needed. Do not allow plants to wilt. Ship this crop when one-third of the florets are open to reduce the risk of flower shattering during shipping.
	No	Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-12 (weeks), Summer PGR paclobutrazol 20 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 12-14 (weeks), Spring PGR paclobutrazol 20 ppm Spray Annual, 8"/2 Gallon/20 cm , 3 (ppp), 10-12 (weeks), Summer PGR paclobutrazol 20 ppm Spray Annual, 8"/2 Gallon/20 cm , 3 (ppp), 12-14 (weeks), Spring PGR paclobutrazol 20 ppm Spray	Avoid planting plugs too deep. Maintain good fertilisation, especially at flower initiation. Monitor for aphids, botrytis, powdery mildew.
	No	Annual, 5"/6"/1 Gallon/15 cm , 1 (ppp), 11-13 (weeks), Summer PGR paclobutrazol 20 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1 (ppp), 12-16 (weeks), Spring PGR paclobutrazol 20 ppm Spray	PGRs: 2 paclobutrazol sprays, the first approximately 3 weeks after transplant and the second approximately 2 weeks later. Possible third application may be necessary, subject to conditions. Delphinium are especially sensitive to powdery mildew; spray preventively if necessary. Ship and sell latest with flower spike one third open to decrease risk of petal shattering. See Cut Flower section for more details on cut flower production. Container production: PGR paclobutrazol 1 or 2 applications 20 ppm spray.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Spring PGR paclobutrazol 15-20 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 9-10 (weeks), Spring PGR paclobutrazol 15-20 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 3 (ppp), 8-9 (weeks), Autumn PGR paclobutrazol 15-20 ppm Spray Annual, 10" Pot or HB/3 Gallon/25 cm , 4 (ppp), 8-9 (weeks), Autumn PGR paclobutrazol 15-20 ppm Spray	3-4 applications of PGRs are needed to produce in quart or gallon containers.

CLASS/SERIES	HARDINESS ZONE	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
DIGITALIS <i>Digitalis purpurea</i> Dalmatian F1 Series	5-9	288 128	(day) 60-68°F (16-20°C) (night) 50-65°F (10-18°C)	5.8-6.2 pH 1.0-1.5 mmhos/cm	Facultative Long Day Daylength: 14 hours.	
ECHINACEA <i>Echinacea x hybrida</i> Artisan™ Collection F1	4-10	128 72	(day) 65-75°F (18-24°C) (night) 60-65°F (16-18°C)	5.8-6.5 pH 1.5-2.0 mmhos/cm	Short Day-Long Day Grow plugs under SD (≤12 hours) until 7 mature leaves. Thereafter, 100% plants flower at ≥10 hours when grown under high daily light integral (DLI; ~15 moles/m²/d) and at ≥12 hours under low DLI (~5 moles/m²/d). Plants flowered ~5 weeks faster at ≥13 hours than at 10 under higher DLI and ~2 weeks faster at ≥13 hours than at 12 under low DLI. Therefore, fastest flowering at ≥13 hours.	
ECHINACEA <i>Echinacea x hybrida</i> Cheyenne Spirit	4-10	128 72	(day) 65-75°F (18-24°C) (night) 60-65°F (16-18°C)	5.8-6.5 pH 1.5-2.0 mmhos/cm	Short Day-Long Day Grow plugs under SD (≤12 hours) until 7 mature leaves. Thereafter, 100% plants flower at ≥10 hours when grown under high daily light integral (DLI; ~15 moles/m²/d) and at ≥12 hours under low DLI (~5 moles/m²/d). Plants flowered ~5 weeks faster at ≥13 hours than at 10 under higher DLI and ~2 weeks faster at ≥13 hours than at 12 under low DLI. Therefore, fastest flowering at ≥13 hours.	
ECHINACEA <i>Echinacea purpurea</i> PowWow® Series	4-10	128 72	(day) 65-75°F (18-24°C) (night) 60-65°F (16-18°C)	5.8-6.5 pH 1.5-2.0 mmhos/cm	Short Day-Long Day Grow plugs under SD (≤12 hours) until 7 mature leaves. Thereafter, 100% plants flower at ≥10 hours when grown under high daily light integral (DLI; ~15 moles/m²/d) and at ≥12 hours under low DLI (~5 moles/m²/d). Plants flowered ~5 weeks faster at ≥13 hours than at 10 under higher DLI and ~2 weeks faster at ≥13 hours than at 12 under low DLI. Therefore, fastest flowering at ≥13 hours.	
GAILLARDIA <i>Gaillardia x grandiflora</i> , <i>Gaillardia aristata</i> x <i>Gaillardia pulchella</i> Mesa Series	5-10	128 288	(day) 60-70°F (16-21°C) (night) 50-60°F (10-16°C)	5.5-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day Critical daylength: 13 hours	

	VERNALISATION REQUIRED	FINISHING PROGRAMS FOR ANNUAL AND OVERWINTER PRODUCTION	KEY TIPS
	No	Forcing, 5"/6"/1 Gallon/15 cm, 1-2 (ppp), 12-13 (weeks), Late Spring, ADT 68°F (20°C) PGR paclobutrazol 2-3 ppm Drench Annual, 5"/6"/1 Gallon/15 cm, 1-2 (ppp), 10-12 (weeks), Summer, ADT 68°F (20°C) PGR uniconazole 5 ppm Spray Annual, 5"/6"/1 Gallon/15 cm, 1-2 (ppp), 10-12 (weeks), Summer, ADT 68°F (20°C) PGR daminozide 2,500-3,500 ppm Spray Forcing, 5"/6"/1 Gallon/15 cm, 1-2 (ppp), 12-13 (weeks), Late Spring, ADT 68°F (20°C) PGR daminozide 2,500-3,500 ppm Spray Forcing, 5"/6"/1 Gallon/15 cm, 1-2 (ppp), 12-13 (weeks), Late Spring, ADT 68°F (20°C) PGR paclobutrazol 5-10 ppm Spray Forcing, 5"/6"/1 Gallon/15 cm, 1-2 (ppp), 12-13 (weeks), Late Spring, ADT 68°F (20°C) PGR uniconazole 1 ppm Drench Annual, 5"/6"/1 Gallon/15 cm, 1-2 (ppp), 10-12 (weeks), Summer, ADT 68°F (20°C) PGR paclobutrazol 5-10 ppm Spray Forcing, 5"/6"/1 Gallon/15 cm, 1-2 (ppp), 12-13 (weeks), Late Spring, ADT 68°F (20°C) PGR daminozide 2,500-3,500 ppm Spray Annual, 5"/6"/1 Gallon/15 cm, 1-2 (ppp), 10-12 (weeks), Summer, ADT 68°F (20°C) PGR paclobutrazol 2-3 ppm Drench Forcing, 8"/2 Gallon/20 cm, 3-4 (ppp), 12-13 (weeks), Late Spring, ADT 68°F (20°C) PGR uniconazole 5 ppm Spray Forcing, 8"/2 Gallon/20 cm, 3-4 (ppp), 12-13 (weeks), Late Spring, ADT 68°F (20°C) PGR daminozide 2,500-3,500 ppm Spray Annual, 8"/2 Gallon/20 cm, 3-4 (ppp), 10-12 (weeks), Summer PGR paclobutrazol 5-10 ppm Spray Annual, 8"/2 Gallon/20 cm, 3-4 (ppp), 10-12 (weeks), Summer PGR uniconazole 5 ppm Spray Annual, 8"/2 Gallon/20 cm, 3-4 (ppp), 10-12 (weeks), Summer PGR daminozide 2,500-3,000 ppm Spray Forcing, 8"/2 Gallon/20 cm, 3-4 (ppp), 12-13 (weeks), Late Spring, ADT 68°F (20°C) PGR paclobutrazol 5-10 ppm Spray	Digitalis can be grown under high light, provided there is enough moisture. Monitor media EC when generative and maintain levels. Avoid drying out, as this could cause flower abortion.
	No	Overwinter, 5"/6"/1 Gallon/15 cm, 1 (ppp), 30-34 (weeks), Late Spring, ADT 72°F (22°C) Annual, 5"/6"/1 Gallon/15 cm, 1 (ppp), 13-17 (weeks), Late Spring, ADT 72°F (22°C) Forcing, 5"/6"/1 Gallon/15 cm, 1 (ppp), 9-11 (weeks), Late Summer, ADT 72°F (22°C)	Multiple sprays of daminozide at 2,500 ppm/chlormequat chloride at 500-750 ppm are our recommendation. Multiple sprays of paclobutrazol at 30 ppm are also good and can be an optional treatment. When growing and offering all 3 varieties, PGR advice as indicated is required to grow in optimal uniformity for 3 combined colours (as Yellow Ombre is a little taller and more slender without PGRs).
	No	Overwinter, 5"/6"/1 Gallon/15 cm, 1-3 (ppp), 30-34 (weeks), Late Spring, ADT 72°F (22°C) Annual, 5"/6"/1 Gallon/15 cm, 1-3 (ppp), 13-17 (weeks), Late Spring, ADT 72°F (22°C) Forcing, 5"/6"/1 Gallon/15 cm, 1-3 (ppp), 9-11 (weeks), Late Summer, ADT 72°F (22°C)	
	No	Overwinter, 5"/6"/1 Gallon/15 cm, 1-3 (ppp), 30-34 (weeks), Late Spring, ADT 72°F (22°C) Forcing, 5"/6"/1 Gallon/15 cm, 1-3 (ppp), 9-11 (weeks), Late Summer, ADT 72°F (22°C) Annual, 5"/6"/1 Gallon/15 cm, 1-3 (ppp), 13-17 (weeks), Late Spring, ADT 72°F (22°C)	
	No	Forcing, 4"/4.5"/Quart/10 cm, 1 (ppp), 9-11 (weeks), Late Summer, ADT 72°F (22°C) Annual, 4"/4.5"/Quart/10 cm, 1 (ppp), 10-14 (weeks), Late Spring, ADT 68°F (20°C)	PGRs are generally not necessary if grown cooler. If necessary, apply daminozide 2,500 to 5,000 ppm spray.

CLASS/SERIES	HARDINESS ZONE	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
GAURA <i>Gaura lindheimeri</i> Sparkle White	5-9	288	(day) 59-70°F (15-21°C) (night) 50-64°F (10-18°C)	5.5-6.2 pH 1.5-2.0 mmhos/cm	Quantitative long day plant with critical daylength of 13 hours.	
HEUCHERA <i>Heuchera sanguinea</i> Heucherette™ Series		128 72	(day) 55-65°F (13-18°C) (night) 50-55°F (10-13°C)	6.0-6.8 pH 1.4-1.8 mmhos/cm	Day Neutral	
HEUCHERA <i>Heuchera x hybrida</i> Melting Fire	4-8	288 128	(day) 60-68°F (16-20°C) (night) 58-60°F (14-16°C)	5.8-6.2 pH 1.2-1.4 mmhos/cm	Day Neutral	
HEUCHERA <i>Heuchera micrantha</i> Palace Purple	4-8	288 128	(day) 65-68°F (18-20°C) (night) 60-65°F (16-18°C)	5.8-6.2 pH 1.2-1.4 mmhos/cm	Day Neutral	
HIBISCUS <i>Hibiscus moscheutos</i> Luna™ F1 Series	5-9	288 128	(day) 70-85°F (21-29°C) (night) 65-70°F (18-21°C)	6.0-6.5 pH 1.5-2.0 mmhos/cm	Facultative Long Day Long day min. 12 hours; optimum 14 hours or longer.	
IBERIS <i>Iberis sempervirens</i> Whiteout F1	3-8	288	(day) 60-72°F (16-22°C) (night) 41-50°F (5-10°C)	5.5-6.2 pH 1.2-1.4 mmhos/cm	Day Neutral	
LAVANDULA <i>Lavandula angustifolia</i> Avignon Early Blue	6-8	288 128	(day) 60-72°F (16-22°C) (night) 46-54°F (8-12°C)	5.8-6.5 pH 1.1-1.4 mmhos/cm	Day Neutral See Lavender Scheduling Tool at panamseed.com for finishing schedules per region.	

	VERNALISATION REQUIRED	FINISHING PROGRAMS FOR ANNUAL AND OVERWINTER PRODUCTION	KEY TIPS
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Spring PGR daminozide/chlormequat chloride tank mix 2,500/750-2,500/1,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1 (ppp), 8-9 (weeks), Spring PGR daminozide/chlormequat chloride tank mix 2,500/750-2,500/1,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 8-9 (weeks), Spring PGR daminozide/chlormequat chloride tank mix 2,500/750-2,500/1,000 ppm Spray	Well-drained soil. Dislikes wet Winter soils. Monitor for Aphids. Cold growing at 55°F (13°C); add 4 to 5 weeks crop time. See GrowerFacts for more details on overwintered production.
	No	Overwinter, 4"/4.5"/Quart/10 cm , 1 (ppp), 24-32 (weeks), Spring, ADT 60°F (16°C) Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 12-16 (weeks), Late Spring, ADT 60°F (16°C) Overwinter, 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 24-32 (weeks), Spring, ADT 60°F (16°C) Annual, 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 12-16 (weeks), Late Spring, ADT 60°F (16°C) Overwinter, 8"/2 Gallon/20 cm , 3-4 (ppp), 24-32 (weeks), Spring, ADT 60°F (16°C) Annual, 8"/2 Gallon/20 cm , 3-4 (ppp), 12-16 (weeks), Late Spring, ADT 60°F (16°C)	TEMPERATURE: Growing under temperatures below 60°F/15°C for the first 6 weeks after transplanting is essential for uniformity of flowering. Warmer temperatures could significantly delay flowering and cause flowers to not be uniform. MOISTURE: Heuchera prefer average moisture levels. They do not tolerate overly wet or overly dry conditions. Do not allow the plants to dry out between waterings. Under high light intensities, marginal leaf burn may occur if the plants are grown too dry, with too low of fertilisation. PGRs are not needed. Grow cool and ensure an active climate.
	No - vernalisation not needed when sold for foliage	Forcing, 4"/4.5"/Quart/10 cm , 1 (ppp), 11-12 (weeks), Late Spring, ADT 68°F (20°C) Forcing, 4"/4.5"/Quart/10 cm , 1 (ppp), 11-12 (weeks), Autumn, ADT 68°F (20°C) Overwinter, 5"/6"/1 Gallon/15 cm , 1 (ppp), 28-36 (weeks), Spring Overwinter, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 30-36 (weeks), Spring Forcing, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 13-14 (weeks), Late Spring, ADT 68°F (20°C) Forcing, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 12-13 (weeks), Autumn, ADT 68°F (20°C)	Do not plant plugs too deep. Keep plug surface at the same level as the media surface. Avoid wet and overly dry. Needs well-drained medium.
	No - vernalisation not needed when sold for foliage	Forcing, 4"/4.5"/Quart/10 cm , 1 (ppp), 10-11 (weeks), Late Spring, ADT 68°F (20°C) Forcing, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Autumn, ADT 68°F (20°C) Forcing, 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 10-11 (weeks), Autumn, ADT 68°F (20°C) Overwinter, 5"/6"/1 Gallon/15 cm , 1 (ppp), 26-32 (weeks), Spring Overwinter, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 28-32 (weeks), Spring Forcing, 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 11-12 (weeks), Late Spring, ADT 68°F (20°C)	Do not plant plugs too deep. Keep plug surface at the same level as the media surface. Grow relatively dry. Needs well-drained medium.
	No - damage to plugs results below 41°F (5°C)	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 10-13 (weeks), Summer PGR daminozide/chlormequat chloride tank mix 750-2,500 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1 (ppp), 10-13 (weeks), Summer PGR daminozide/chlormequat chloride tank mix 750-2,500 ppm Spray	Does not need pinching. Maintain media in high moisture. Growing plant too dry will result in flower bud abortion. Monitor for Thrips, Aphids and Spider Mites. Growth stops and lower leaves turn yellow when grown below 68°F (20°C). In Southern climates, stronger PGRs may be needed; option is paclobutrazol 0.5 ppm drench. High light will promote branching and reduce plant height. Spacing when plants touch each other is highly recommended.
	Yes - minimum 8 to 10 weeks. Plants should be bulked for about 8 to 10 weeks before being receptive to cold treatment.	Overwinter, 4"/4.5"/Quart/10 cm , 1 (ppp), 26-36 (weeks), Early Spring	No pinch needed. Allow enough bulk time; grow in active climate. Monitor for Downy and Powdery Mildew; spray preventively.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Summer, ADT 60°F (16°C) PGR daminozide 2,000-3,000 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-11 (weeks), Late Spring, ADT 60°F (16°C) PGR daminozide 2,000-3,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 9-10 (weeks), Summer, ADT 60°F (16°C) PGR daminozide 2,000-3,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-11 (weeks), Late Spring, ADT 60°F (16°C) PGR daminozide 2,000-3,000 ppm Spray	Avoid planting plug too deep. Keep plug surface same as medium surface. Grow low RH and high light. Let top soil dry in between waterings, but do not allow medium to dry, as high EC could cause root damage. Monitor for Botrytis, Root Rot, Leafspot, Aphids and Mites. For shipping, keep soil moist and plant dry. Use Avignon Early Blue for annual early Southwest and Northwest season and Ellagance Purple for annual early Southeast season. Lavance is best for Summer production, has best bulk. Do not plant this variety for early season. Growth is delayed in cool conditions. See the Lavender Scheduling Tool at panamseed.com for finishing schedules by region. For overwintered production, cut back just below top foliage; do this mid-Autumn, approximately 4 weeks before dormant period, or in Spring just before regrowth.

CLASS/SERIES	HARDINESS ZONE	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
LAVANDULA <i>Lavandula stoechas</i> Bandera Series	7-10	288 128	(day) 65-68°F (18-20°C) (night) 55-64°F (13-18°C)	5.5-6.0 pH 1.0-1.2 mmhos/cm	Facultative Long Day See Lavender Scheduling Tool at panamseed.com for finishing schedules by region. Long day beneficial, but will flower in short days.	
LAVANDULA <i>Lavandula angustifolia</i> Blue Spear	6-8	288 128	(day) 60-72°F (16-22°C) (night) 54-60°F (12-16°C)	5.8-6.5 pH 1.1-1.4 mmhos/cm	Facultative Long Day Critical Daylength: 11 hours in High DLI (15Mol/day/m2); 12 hours in Low DLI (5Mol/day/m2) See Lavender Scheduling Tool at panamseed.com for finishing schedules per region.	
LAVANDULA <i>Lavandula angustifolia</i> Ellagance Series	5-8	288 128	(day) 60-72°F (16-22°C) (night) 54-60°F (12-16°C)	5.8-6.5 pH 1.1-1.4 mmhos/cm	Facultative Long Day Critical Daylength for Ellagance Purple is 10 hours; Ice and Snow are Obligate Long Day with critical daylength of about 13-14 hours. See Lavender Scheduling Tool at panamseed.com for finishing schedules by region.	
LAVANDULA <i>Lavandula angustifolia</i> Lavance Deep Purple	5-8	288 128	(day) 60-72°F (16-22°C) (night) 60-65°F (16-18°C)	5.8-6.5 pH 1.1-1.4 mmhos/cm	Obligate Long Day Critical Daylength: 14 hours See Lavender Scheduling Tool at panamseed.com for finishing schedules per region.	
LAVANDULA <i>Lavandula multifida</i> Spanish Eyes	7-10	288	(day) 65-70°F (18-21°C) (night) 57-59°F (14-15°C)	5.8-6.2 pH 1.1-1.3 mmhos/cm	Facultative Long Day	

	VERNALISATION REQUIRED	FINISHING PROGRAMS FOR ANNUAL AND OVERWINTER PRODUCTION	KEY TIPS
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 12-14 (weeks), Spring Overwinter, 4"/4.5"/Quart/10 cm , 1 (ppp), 24-32 (weeks), Early Spring Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 12-14 (weeks), Spring	Don't plant too deep since Bandera has low and deep branching, and Botrytis could more easily affect plants. Need cool production to reach sufficient flag size, see Scheduling tool. High pH (above 6.8) can cause leaf chlorosis.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-12 (weeks), Late Spring, ADT 65°F (18°C) PGR daminozide 2,000-3,000 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Summer, ADT 65°F (18°C) PGR daminozide 2,000-3,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 9-11 (weeks), Summer, ADT 65°F (18°C) PGR daminozide 2,000-3,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-12 (weeks), Late Spring, ADT 65°F (18°C) PGR daminozide 2,000-3,000 ppm Spray	Avoid planting plugs deep. Keep plug surface same as medium surface. Grow with low RH and high light. Let top soil dry in between waterings, but do not allow medium to dry, as high EC could cause root damage. Monitor for Botrytis, Root Rot, Leafspot, Aphids and Mites. For shipping, keep soil moist and plant dry.
	No	Overwinter, 4"/4.5"/Quart/10 cm , 1 (ppp), 28-36 (weeks), Spring, ADT 65°F (18°C) PGR daminozide 2,000-3,000 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-12 (weeks), Late Spring, ADT 65°F (18°C) PGR daminozide 2,000-3,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 9-12 (weeks), Late Spring, ADT 65°F (18°C) PGR daminozide 2,000-3,000 ppm Spray	Avoid planting plugs deep. Keep plug surface same as medium surface. Grow low RH and high light. Let top soil dry in between waterings, but do not allow medium to dry as high EC could cause root damage. Monitor for Botrytis, Root Rot, Leafspot, Aphids and Mites. For shipping, keep soil moist and plant dry. Scheduling is different between colours: Purple is the fastest (as indicated lead time) and Snow adds 4 to 5 weeks. See Scheduling Tool for regional lead times. For overwintering production, cut back just below top foliage; do this mid-Autumn, approximately 4 weeks before dormant period, or in Spring just before regrowth.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-11 (weeks), Summer, ADT 65°F (18°C) PGR daminozide 2,000-3,000 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 10-11 (weeks), Autumn, ADT 65°F (18°C) PGR daminozide 2,000-3,000 ppm Spray Overwinter, 4"/4.5"/Quart/10 cm , 1-3 (ppp), 30-38 (weeks), Late Spring, ADT 60°F (16°C) PGR daminozide 2,000-3,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-11 (weeks), Summer, ADT 65°F (18°C) PGR daminozide 2,000-3,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-12 (weeks), Autumn, ADT 65°F (18°C) PGR daminozide 2,000-3,000 ppm Spray Overwinter, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 30-38 (weeks), Late Spring, ADT 60°F (16°C) PGR daminozide 2,000-3,000 ppm Spray	Avoid planting plug too deep. Keep plug surface same as medium surface. Grow low RH and high light. Let top soil dry in between waterings, but do not allow medium to dry, as high EC could cause root damage. Monitor for Botrytis, Root Rot, Leafspot, Aphids and Mites. For shipping, keep soil moist and plant dry. Lavance is best for Summer production, has best bulk. Do not plant early season. Growth is delayed in cool conditions. Use Ellagance Purple for annual early Southeast season and Avignon Early Blue for annual early South and Northwest season. See Lavender Scheduling Tool at panamseed.com for finishing schedules by region. For overwintered production, cut back just below top foliage; do this mid-Autumn, approximately 4 weeks before dormant period, or in Spring just before regrowth.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 12-14 (weeks), Summer PGR daminozide 2,000-3,000 ppm Spray Annual, 8"/2 Gallon/20 cm , 3-5 (ppp), 12-15 (weeks), Summer PGR daminozide 2,000-3,000 ppm Spray	Grow relatively dry and provide active climate. Vigorous Lavandula needs more PGRs than L. angustifolia and L. stoechas, and is a long-flowering annual.

CLASS/SERIES	HARDINESS ZONE	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
LEUCANTHEMUM <i>Leucanthemum x superbum</i> Madonna F1	3-9	288 72	(day) 65-72°F (18-22°C) (night) 57-60°F (14-16°C)	5.5-6.2 pH 0.9-1.1 mmhos/cm	Obligate Long Day Plant needs a minimum of 14.5 hrs. daylength to initiate flowering. Responds very well to night interruption (4 hrs. between 10 p.m. and 2 a.m.) for Spring Forcing. Juvenility ends at 10 leaves.	
LEUCANTHEMUM <i>Leucanthemum x superbum</i> White Lion F1	3-9	288 72	(day) 65-72°F (18-22°C) (night) 57-60°F (14-16°C)	5.5-6.2 pH 0.9-1.1 mmhos/cm	Facultative Long Day Facultative Long Day Plant but very low sensitivity to daylength, with critical daylength at 10 hours. To finish in early Spring, plant development does require sufficient temperature (ADT 44-50°F), meaning a southern Winter climate, to grow and finish in that early Spring.	
LOBELIA <i>Lobelia x speciosa</i> Starship™ F1 Series	6-10	288 105	(day) 65-70°F (18-21°C) (night) 60-65°F (16-18°C)	5.8-6.6 pH 1.1-1.3 mmhos/cm	Long Day Plants. Scarlet is a Facultative Long Day plant that flowers faster at 13 hours or longer. See Perennials Forcing Guide for more info on scheduling and plug size and treatments. Forcing for Summer and Autumn sales target Weeks 35 or later. Sow Week 15 to 17, using 288 trays. Grow plugs under 10-hour short-day conditions using black cloth until ready to transplant. Allow about 8 to 9 weeks during Summer production. After short-day treatment, transplant to final container and grow under natural long days. Outdoor production is recommended. Total crop time is approximately 19 to 20 weeks.	
MYOSOTIS <i>Myosotis sylvatica</i> Mon Amie Series	6-8	288	(day) 60-70°F (16-21°C) (night) 50-55°F (10-13°C)	5.6-5.8 pH 1.3-1.5 mmhos/cm	Day Neutral	
PAPAVER <i>Papaver nudicaule</i> Champagne Bubbles F1 Series	4-8	288	(day) 50-55°F (10-13°C) (night) 40-45°F (4-7°C)	5.5-6.0 pH 1.2-1.4 mmhos/cm	Day Neutral	
PENSTEMON <i>Penstemon heterophyllus</i> Electric Blue	6-8	288	(day) 66-70°F (19-21°C) (night) 62-66°F (17-19°C)	5.8-6.5 pH 1.0-1.5 mmhos/cm	Day Neutral Needs high light intensity for complete, rapid and uniform flowering.	

	VERNALISATION REQUIRED	FINISHING PROGRAMS FOR ANNUAL AND OVERWINTER PRODUCTION	KEY TIPS
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 11-12 (weeks), Summer, ADT 68°F (20°C) PGR paclobutrazol 20-25 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 11-12 (weeks), Summer, ADT 68°F (20°C) PGR uniconazole 5 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 10-11 (weeks), Summer, ADT 78°F (26°C) PGR daminozide 5,000-6,000 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 11-12 (weeks), Summer, ADT 68°F (20°C) PGR daminozide 2,500-3,000 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 10-11 (weeks), Summer, ADT 74°F (23°C) PGR uniconazole 5-10 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 10-11 (weeks), Summer, ADT 78°F (26°C) PGR paclobutrazol 20-30 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 10-11 (weeks), Summer, ADT 78°F (26°C) PGR uniconazole 10 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 11-12 (weeks), Summer, ADT 68°F (20°C) Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 12-14 (weeks), Late Spring, ADT 65°F (18°C) Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 12-13 (weeks), Autumn, ADT 68°F (20°C) PGR daminozide 2,500-3,000 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 12-13 (weeks), Autumn, ADT 68°F (20°C) PGR paclobutrazol 20-30 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 12-15 (weeks), Late Spring, ADT 65°F (18°C) Annual, 5"/6"/1 Gallon/15 cm , 1 (ppp), 11-12 (weeks), Summer, ADT 68°F (20°C)	For 2 Gallon, use 3-4 plugs per pot.
	No	Overwinter, 4"/4.5"/Quart/10 cm , 1 (ppp), 18-19 (weeks), Early Spring, ADT 65°F (18°C) Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Spring, ADT 68°F (20°C) PGR daminozide 2,500 ppm Spray Overwinter, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 18-19 (weeks), Early Spring, ADT 65°F (18°C) Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-11 (weeks), Spring, ADT 68°F (20°C) PGR daminozide 2,500 ppm Spray	For 2 Gallon, use 3-4 plugs per pot. To finish in early Spring, plant development does require sufficient temperature (ADT 44-50°F), meaning a southern Winter climate, to grow and finish in that early Spring.
	No	Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 11-13 (weeks), Autumn, ADT 65°F (18°C) PGR paclobutrazol 30 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-12 (weeks), Summer, ADT 65°F (18°C) PGR uniconazole 5 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 13-17 (weeks), Spring, ADT 65°F (18°C) PGR paclobutrazol 30 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 11-13 (weeks), Autumn, ADT 65°F (18°C) PGR uniconazole 5 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 13-17 (weeks), Spring, ADT 65°F (18°C) PGR uniconazole 5 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-12 (weeks), Summer, ADT 65°F (18°C) PGR paclobutrazol 30 ppm Spray Annual, 8"/2 Gallon/20 cm , 3-5 (ppp), 10-12 (weeks), Summer, ADT 65°F (18°C) PGR uniconazole 5 ppm Spray Annual, 8"/2 Gallon/20 cm , 3-5 (ppp), 13-17 (weeks), Spring, ADT 65°F (18°C) PGR paclobutrazol 30 ppm Spray Annual, 8"/2 Gallon/20 cm , 3-5 (ppp), 11-13 (weeks), Autumn, ADT 65°F (18°C) PGR paclobutrazol 30 ppm Spray Annual, 8"/2 Gallon/20 cm , 3-5 (ppp), 10-12 (weeks), Summer, ADT 65°F (18°C) PGR paclobutrazol 30 ppm Spray Annual, 8"/2 Gallon/20 cm , 3-5 (ppp), 13-17 (weeks), Spring, ADT 65°F (18°C) PGR uniconazole 5 ppm Spray	Avoid drought stress. Grow evenly moist but not wet. Monitor for Snails, Slugs, Root and Crown Rot, Pythium, Phytophthora (if too wet). Control Thrips, as Lobelia is very susceptible to INSV damage.
	No	Overwinter, 4"/4.5"/Quart/10 cm , 1 (ppp), 16-22 (weeks), Early Spring PGR daminozide/chlormequat chloride tank mix 3,500-750 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 7-9 (weeks), Spring PGR daminozide/chlormequat chloride tank mix 3,500-750 ppm Spray	Maintain low pH. Myosotis suffer from chlorosis at high pH. Grow like Primula acaulis. See GrowerFacts for details on how to mitigate chlorosis caused by high pH.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 5-10 (weeks), Late Spring Annual, 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 6-11 (weeks), Late Spring	Suffers from chlorosis at high pH (above 6.1), due to iron deficiency. Moderate fertilisation, well-drained soil.
	No - but beneficial; cooled plants flower more uniformly and faster than non-cooled plants; duration of 10 weeks at 41°F (5°C)	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 11-13 (weeks), Summer Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 12-14 (weeks), Late Spring Annual, 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 11-13 (weeks), Summer Annual, 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 12-14 (weeks), Late Spring	Bulking prior to vernalisation ensures pot-fill and improves flowering uniformity. Monitor for Whiteflies.

CLASS/SERIES	HARDINESS ZONE	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
PEROVSKIA <i>Perovskia atriplicifolia</i> Blue Steel	4-9	288 72	(day) 65-68°F (18-20°C) (night) 57-66°F (14-19°C)	5.8-6.2 pH 1.2-1.4 mmhos/cm	Day Neutral Light accumulator – higher light levels increase development and finish.	
PEROVSKIA <i>Perovskia atriplicifolia</i> Bluesette	4-9	288 72	(day) 65-68°F (18-20°C) (night) 57-60°F (14-16°C)	5.8-6.2 pH 1.2-1.4 mmhos/cm	Facultative Long Day Light accumulator – higher light levels increase development and finish.	
RUDBECKIA <i>Rudbeckia fulgida</i> var. <i>sullivantii</i> Goldblitz	3-9	288 72	(day) 65-68°F (18-20°C) (night) 60-65°F (16-18°C)	5.8-6.5 pH 1.2-1.5 mmhos/cm	Obligate Long Day Critical daylength of 14.5 hours.	

	VERNALISATION REQUIRED	FINISHING PROGRAMS FOR ANNUAL AND OVERWINTER PRODUCTION	KEY TIPS
	No	Annual, 4"/4.5"/Quart/10 cm, 1 (ppp), 12-14 (weeks), Summer, ADT 68°F (20°C) PGR daminozide 2,500-3,000 ppm Spray Annual, 4"/4.5"/Quart/10 cm, 1 (ppp), 14-16 (weeks), Late Spring, ADT 68°F (20°C) PGR daminozide 2,500-3,000 ppm Spray Annual, 4"/4.5"/Quart/10 cm, 1 (ppp), 12-14 (weeks), Autumn, ADT 68°F (20°C) PGR daminozide 2,500-3,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm, 1-3 (ppp), 12-14 (weeks), Autumn, ADT 68°F (20°C) PGR daminozide 2,500-3,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm, 1-3 (ppp), 14-16 (weeks), Late Spring, ADT 68°F (20°C) PGR daminozide 2,500-3,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm, 1-3 (ppp), 12-14 (weeks), Summer, ADT 68°F (20°C) PGR daminozide 2,500-3,000 ppm Spray Annual, 8"/2 Gallon/20 cm, 3-5 (ppp), 13-15 (weeks), Autumn, ADT 68°F (20°C) PGR daminozide 3,000-5,000 ppm Spray Annual, 8"/2 Gallon/20 cm, 3-5 (ppp), 13-15 (weeks), Summer, ADT 68°F (20°C) PGR daminozide 3,000-5,000 ppm Spray Annual, 8"/2 Gallon/20 cm, 3-5 (ppp), 14-16 (weeks), Late Spring, ADT 68°F (20°C) PGR daminozide 2,500-3,000 ppm Spray	Needs an active growing climate with the highest possible light levels. Optimum is more than 15 mol per m² per day. Can grow in lower light levels, but increases crop time (see lead time per season). Do not start crop too early in cold nights and lower light levels, which will cause a delay. Best grown outside. Finish lead times for Northwest Europe: add 2 to 3 weeks to indicated lead times. Allow media to dry in between waterings. Avoid growing wet. Monitor EC in pot during active growth to avoid leaf yellowing (chlorosis). Gallon is the main size; recommend 3 ppp, planted in a triangle, for superior finished quality (compared to vegetative with 1 plant per pot). If plugs are not pinched, pinch 2 to 3 weeks after transplant, above 4 to 5 leaf node pairs. NOTE: Pinch not needed for larger (2 gallon and up) containers. Instead, use higher daminozide concentration of 5,000 ppm for 1 to 2 applications in the first 2 to 3 weeks after transplant.
	No	Annual, 4"/4.5"/Quart/10 cm, 1 (ppp), 12-14 (weeks), Late Spring, ADT 65°F (18°C) Annual, 4"/4.5"/Quart/10 cm, 1 (ppp), 10-12 (weeks), Summer, ADT 68°F (20°C) Annual, 5"/6"/1 Gallon/15 cm, 1-3 (ppp), 12-14 (weeks), Late Spring, ADT 65°F (18°C) Annual, 5"/6"/1 Gallon/15 cm, 1-3 (ppp), 10-12 (weeks), Summer, ADT 68°F (20°C)	Needs an active growing climate with the highest possible light levels. Optimum is more than 15 mol per m² per day. Can grow in lower light levels, but that will increase crop time. Do not start too early in cold nights and lower light levels, which will cause delay. Allow media to dry between watering; avoid growing wet. Monitor EC in pot during active growth to avoid leaf yellowing. One gallon is the perfect size; use 1 multi-seed plug (3 to 4 seeds) or 3 x 288 plug, and no pinch or PGRs needed. For quarts, use a smaller plug size (288) and 1 seed/cell; pinching is optional (leave 3 to 4 leaf nodes), same for PGR spray (1,500 ppm daminozide). Pinching will delay 1 to 2 weeks.
	No	Annual, 4"/4.5"/Quart/10 cm, 1 (ppp), 14-22 (weeks), Summer, ADT 65°F (18°C) PGR daminozide 5,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm, 1 (ppp), 14-23 (weeks), Summer, ADT 65°F (18°C) PGR daminozide 5,000 ppm Spray	Will finish reliably as a first-year-flowering perennial if not sown later than Week 16. No need for short-day treatment of plugs (like Goldsturm does). For PGRs, use daminozide 3x 5,000 ppm spray as an option for more controlled growth. Daminozide/chlormequat chloride tank mix (3x daminozide 2,500 ppm/chlormequat chloride 750 ppm spray) could be an optional treatment. Using uniconazole-P or paclobutrazol spray is not recommended, as they made the foliage smaller and the plants looked spindly. This is a relatively high feeder, so prevent Mg, Ca and Fe deficiencies. High light and good ventilation are beneficial. Possible foliage issues can occur on new growth leaves (puckering, cup up, tip marginal burning) during flower induction period because of more difficult mineral transport during this developmental stage. There is no good fertilisation correction possible, only maintain as low an RH as possible with optimal ventilation to have optimal plant transport of elements. The foliage issue will mostly have disappeared at flowering sales stage. For Spring and Autumn forcing: See Perennial Forcing Guide.

CLASS/SERIES	HARDINESS ZONE	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
RUDBECKIA <i>Rudbeckia fulgida</i> var. <i>sullivantii</i> Goldsturm	3-9	288 72	(day) 65-68°F (18-20°C) (night) 60-65°F (16-18°C)	5.8-6.5 pH 1.2-1.5 mmhos/cm	Short Day-Long Day Best plant structure comes under Short Day conditions (12 hours or less) until 10-leaf stage, then Long Day (15 hours or longer). For forcing info: see Perennials Forcing Guide.	
SALVIA <i>Salvia nemorosa</i> New Dimension™ Series	4-8	288 128	(day) 60-72°F (16-22°C) (night) 50-59°F (10-15°C)	5.5-6.2 pH 0.9-1.3 mmhos/cm	Facultative Long Day For forcing info: See Perennials Forcing Guide.	
SALVIA <i>Salvia patens</i> Patio Series	8-10	288 128	(day) 60-65°F (16-18°C) (night) 57-60°F (14-16°C)	5.8-6.5 pH 1.0-1.2 mmhos/cm	Facultative Long Day Long day beneficial. For more info: See Perennials Forcing Guide.	
SALVIA <i>Salvia nemorosa</i> Salvatore Blue	4-8	288 128	(day) 60-72°F (16-22°C) (night) 50-59°F (10-15°C)	5.5-6.2 pH 1.1-1.4 mmhos/cm	Facultative Long Day Salvatore Blue is a facultative long day plant, but it is much less daylength sensitive than Salvia New Dimension, and is able to flower under 10-hour short day conditions. Because of the 10-hr. critical daylength, Salvatore Blue can be grown for annual programs, but also for long-cycle production through the Winter for Spring sales. Salvatore can finish in the southern U.S. for April sales if critical daylength at transplant is a minimum of 10 hrs., comparative to vegetative choices for early Spring.	
SCABIOSA <i>Scabiosa columbaria</i> Blue Note	5-9	288 128	(day) 65-68°F (18-20°C) (night) 60-65°F (16-18°C)	5.8-6.2 pH 1.1-1.3 mmhos/cm	Day Neutral	

	VERNALISATION REQUIRED	FINISHING PROGRAMS FOR ANNUAL AND OVERWINTER PRODUCTION	KEY TIPS
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 16-23 (weeks), Summer PGR paclobutrazol 20-30 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 16-23 (weeks), Summer PGR uniconazole 5-10 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 16-24 (weeks), Summer PGR paclobutrazol 20-30 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 16-24 (weeks), Summer PGR uniconazole 5-10 ppm Spray Overwinter, 5"/6"/1 Gallon/15 cm , 1 (ppp), 32-34 (weeks), Summer PGR uniconazole 5-10 ppm Spray Overwinter, 8"/2 Gallon/20 cm , 3-5 (ppp), 32-34 (weeks), Summer PGR paclobutrazol 20-30 ppm Spray	Relatively high feeder. Use long day (15 hours or longer) or night interruption to finish early pottings or use vernalised plugs. Prevent Mg and Fe deficiency. Monitor for Botrytis and downy mildew. High light and good ventilation are beneficial. PGR advice as follows: best effect with uniconazole 2x 15 ppm spray; another PGR option is a tank mix of daminozide 2,500 ppm/chlormequat chloride 750 ppm 3x spray. Possible foliage issues can occur on new growth leaves (puckering, cup up, tip marginal burning) during flower induction period because of more difficult mineral transport during this developmental stage. There is no good fertilisation correction possible, only maintain as low an RH as possible with optimal ventilation to have optimal plant transport of elements. The foliage issue will mostly have disappeared at flowering sales stage. For Autumn forcing info: See Perennials Forcing Guide.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 7-9 (weeks), Summer PGR daminozide 1,500-2,000 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 8-11 (weeks), Late Spring PGR daminozide 1,500-2,000 ppm Spray Overwinter, 5"/6"/1 Gallon/15 cm , 1 (ppp), 24-28 (weeks), Spring PGR daminozide 1,500-2,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 3-4 (ppp), 7-9 (weeks), Summer PGR daminozide 1,500-2,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 3-4 (ppp), 8-11 (weeks), Late Spring PGR daminozide 1,500-2,000 ppm Spray Overwinter, 8"/2 Gallon/20 cm , 3-5 (ppp), 24-28 (weeks), Spring PGR daminozide 1,500-2,000 ppm Spray	Grow relatively dry. Avoid leaf yellowing caused by high pH (Fe) and/or low N when generative. Spray weekly with Bittersalt MGS04 1g/liter. Monitor for Spider Mites, Rhizoctonia, Leafspot and Root Rot. Wet after transplant with preventive spray.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 7-11 (weeks), Late Spring PGR daminozide 1,500-2,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 3-4 (ppp), 7-11 (weeks), Late Spring PGR daminozide 1,500-2,000 ppm Spray	Grow relatively dry. Use well-drained medium. Prevent Mg and Fe deficiency. Monitor for Botrytis, Downy Mildew, Aphids and Spider Mites. High light and good ventilation are beneficial.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Summer, ADT 62°F (17°C) PGR daminozide 1,500-2,000 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 8-10 (weeks), Spring PGR daminozide 1,500-2,000 ppm Spray Overwinter, 4"/4.5"/Quart/10 cm , 1 (ppp), 14-18 (weeks), Early Spring, ADT 62°F (17°C) PGR daminozide 1,500-2,000 ppm Spray Overwinter, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 14-18 (weeks), Early Spring, ADT 62°F (17°C) PGR daminozide 1,500-2,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-8 (weeks), Summer, ADT 62°F (17°C) PGR daminozide 1,500-2,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 8-10 (weeks), Spring PGR daminozide 1,500-2,000 ppm Spray	Salvatore Blue needs a little higher fertilisation level than New Dimension Blue, per the Target Media EC. With Salvia nemorosa, leaf yellowing can occur, especially once turning generative. Keep up fertilisation and use iron leaf fertilisation, avoiding too high of a pH. Grow relatively dry and provide an active climate. Salvatore Blue can show black spots on the leaves; this is not disease, nor does it indicate damage. Due to the dark colour of Salvatore Blue, these spots are accumulations of the colour compound that will be dissimilated in better growing conditions.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 12-14 (weeks), Late Spring Overwinter, 4"/4.5"/Quart/10 cm , 1 (ppp), 26-34 (weeks), Spring Annual, 5"/6"/1 Gallon/15 cm , 3-4 (ppp), 12-14 (weeks), Late Spring	Needs high light, low RH. Grow relatively dry. Prevent Mg and Fe deficiency. Early-Spring forcing needs increased temperature during 6 weeks at 62 to 65°F (17 to 18°C), no long days. For forcing info for Mother's Day: See Perennials Forcing Guide.

CLASS/SERIES	HARDINESS ZONE	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
SEDUM <i>Hylotelephium (Sedum) spectabile</i> Spectacular	3-9	128 72	(day) 65-77°F (18-25°C) (night) 54-57°F (12-14°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Long Day-Short Day Critical daylength is about 14 hrs. The fastest flower initiation is at a daylength of a minimum of 16 hrs. (or night interruption). This is approximately 3 weeks shorter than 14 hrs. provides. After flower bud initiation, a shorter daylength of 13 hrs. or less will significantly reduce time to colour the flower buds. The fastest flower timing occurs under a long day and short day combination, i.e., 5-6 weeks of 16 hrs. or longer daylength (long day) for flower initiation followed by 4 to 5 weeks of 13 hrs. or shorter day (short day) for flower development (pink colouration).	
VERBASCUM <i>Verbascum x hybrida</i> Southern Charm	5-8	288	(day) 64-67°F (18-19°C) (night) 62-65°F (17-18°C)	5.8-6.5 pH 1.1-1.3 mmhos/cm	Day Neutral	
VERBENA <i>Verbena bonariensis</i> Buenos Aires	7-9	288 128	(day) 65-68°F (18-20°C) (night) 60-65°F (16-18°C)	5.5-6.2 pH 1.3-1.5 mmhos/cm	Facultative Long Day For forcing info: See Perennials Forcing Guide.	
VERBENA <i>Verbena rigida</i> Santos Purple	7-11	288 128	(day) 65-68°F (18-20°C) (night) 60-65°F (16-18°C)	5.5-6.2 pH 1.3-1.5 mmhos/cm	Facultative Long Day For forcing info: See Perennials Forcing Guide.	

	VERNALISATION REQUIRED	FINISHING PROGRAMS FOR ANNUAL AND OVERWINTER PRODUCTION	KEY TIPS
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 9 (weeks), Spring, ADT 63°F (17°C) Annual, 5"/6"/1 Gallon/15 cm , 1 (ppp), 10-12 (weeks), Spring, ADT 63°F (17°C) Annual, 5"/6"/1 Gallon/15 cm , 1 (ppp), 12-16 (weeks), Summer, ADT 65°F (18°C) PGR paclobutrazol 5 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1 (ppp), 12-16 (weeks), Summer, ADT 65°F (18°C) PGR daminozide 2,000-2,500 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1 (ppp), 16-21 (weeks), Autumn, ADT 65°F (18°C) PGR paclobutrazol 5 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1 (ppp), 16-21 (weeks), Autumn, ADT 65°F (18°C) PGR daminozide 2,000-2,500 ppm Spray Annual, 8"/2 Gallon/20 cm , 2-3 (ppp), 12-16 (weeks), Summer, ADT 65°F (18°C) PGR paclobutrazol 5 ppm Spray Annual, 8"/2 Gallon/20 cm , 2-3 (ppp), 12-16 (weeks), Summer, ADT 65°F (18°C) PGR daminozide 2,000-2,500 ppm Spray Annual, 8"/2 Gallon/20 cm , 2-3 (ppp), 16-21 (weeks), Autumn, ADT 65°F (18°C) PGR paclobutrazol 5 ppm Spray	Maintain active airflow. Grow medium to dry. Avoid wilting (which can cause crown rot). Grow in high light, preferably full sun. Foliage is somewhat more clear green than Autumn Joy. Avoid too high of a nitrogen ratio, as plants will grow too loosely. Additional info for finishing: plug sizes matter, subject to pot size. For smaller pot sizes up to 5 in./13 cm, use 1 plug per pot with a 128 or 180 plug size. For larger pot sizes of 6 in./15 cm or 1 gal., use 1 plug per pot with a larger plug size of 72 or 84 for optimal fill. For larger pot sizes, we advise 2 to 3 plugs per pot with a minimum plug size of 180.
	No	Annual, 5"/6"/1 Gallon/15 cm , 1 (ppp), 12-14 (weeks), Summer	Flowering more uniform under high light conditions.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 11-13 (weeks), Late Spring Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-11 (weeks), Autumn, ADT 68°F (20°C) PGR daminozide 2,500-5,000 ppm Spray	Primarily sold green. Grow dry and light. Relatively high fertilisation. Avoid high N. Prevent Mg and Fe deficiency.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 11-14 (weeks), Late Spring PGR daminozide/chlormequat chloride tank mix 2,000-2,500 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 11-14 (weeks), Late Spring PGR daminozide 2,000-2,500 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 3-4 (ppp), 10-13 (weeks), Summer PGR daminozide/chlormequat chloride tank mix 2,000-750 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 3-4 (ppp), 10-13 (weeks), Summer PGR daminozide 2,000-2,500 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 3-4 (ppp), 11-14 (weeks), Late Spring PGR daminozide/chlormequat chloride tank mix 2,000-750 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 3-4 (ppp), 11-14 (weeks), Late Spring PGR daminozide 2,000-2,500 ppm Spray	Grow dry and light. Relatively high fertilisation. Avoid high N. Prevent Mg and Fe deficiency.

FORCING GUIDE FOR FIRST YEAR FLOWERING PERENNIALS FOR 2 MAJOR DATES IN NORTH AMERICA* (QUICK ANNUAL CYCLE)

GENUS	SPECIES	SERIES/VARIETY	USDA HARDINESS ZONE	FORCING FOR SPRING (WEEK 19)				
				IDEAL SOWING WEEK	PLUG SIZE*	PLUG BULKED UNDER NATURAL SD OR <=12 HR GROW WEEKS	SUPPLEMENTAL LD (14 HR OR NI) REQUIRED AFTER TRANSPLANT**	
CAMPANULA	<i>carpatica</i>	Rapido	3-9	48-49	288	10	Yes	
COREOPSIS	<i>grandiflora</i>	Double the Sun	4-9	51-52	128	8	Yes	
COREOPSIS	<i>grandiflora</i>	Early Sunrise	4-9	49-50	128	8	Yes	
COREOPSIS	<i>grandiflora</i>	Sunfire	4-9	51-52	128	8	Yes	
COREOPSIS	<i>grandiflora</i>	SunKiss	4-9	51-52	128	8	Yes	
DELPHINIUM	<i>elatum</i>	Dasante Blue	4-7	51-52	288	6-7	No	
DELPHINIUM	<i>elatum</i>	Guardian	4-7	51-52	288	6-7	No	
DELPHINIUM	<i>belladonna</i>	Blue Donna	5-9	51-52	288	6-8	No	
DELPHINIUM	<i>grandiflorum</i>	Diamonds Blue	4-9	51-52	288	7	No	
DIANTHUS	<i>barbatus interspecific</i>	Rockin'	5-8	1-2	288	5	No	
DIGITALIS	<i>purpurea</i>	Dalmatian	5-9	52-1	128	7	Yes	
ECHINACEA	<i>hybrida</i>	Artisan	4-10	45-46	128+	13-15 weeks; SD from 2 to 7 true leaves	Yes	
ECHINACEA	<i>hybrida</i>	Cheyenne Spirit	4-10	45-46	128+	13-15 weeks; SD from 2 to 7 true leaves	Yes	
ECHINACEA	<i>purpurea</i>	PowWow	4-10	45-46	128+	13-15 weeks; SD from 2 to 7 true leaves	Yes	
GAILLARDIA	<i>grandiflora</i>	Mesa Bright Bicolor	5-10	52-1	128	7	Yes	
GAILLARDIA	<i>grandiflora</i>	Mesa Yellow	5-10	52-1	128	7	Yes	
GAILLARDIA	<i>grandiflora</i>	Mesa Peach	5-10	52-1	128	7	Yes	
GAILLARDIA	<i>grandiflora</i>	Mesa Red	5-10	52-1	128	7	Yes	
GAURA	<i>lindheimeri</i>	Sparkle White	5b-9	2-3	128	8	Yes	
HEUCHERA	<i>sanguinea</i>	Heucherette™	6-8a	32-34	180	8-10	No	
HEUCHERA	<i>micrantha</i>	Palace Purple	4-8	47-48	288	10-11	No	
HEUCHERA	<i>hybrida</i>	Melting Fire	4-8	46-47	288	10-11	No	
HIBISCUS	<i>moscheutos</i>	Luna	5-9	-	-	-	-	

FORCING GUIDE FOR FIRST YEAR FLOWERING PERENNIALS FOR 2 MAJOR DATES IN NORTH AMERICA*

SD = Short Day (12 hours or shorter, except Lobelia is 10 hours) • LD = Long Day • ADT = Average Daily Temperature

FORCING FOR FALL (WEEK 36)								PLUGS PER POT			
	FINISH UNDER PROPER DAYLENGTH (H) AND ADT (J) GROW WEEKS	FINISH ADT (°F/°C)	IDEAL SOWING WEEK	PLUG SIZE	PLUG SD BULKING REQUIRED	PLUG GROW WEEKS	FINISH UNDER NATURAL LD AND ADT 72-75°F/22-24°C GROW WEEKS	1 QT	1 GAL	2 GAL	3 GAL (FALL)
	12-13	65/18	-	-	-	-	-	1	3-5	-	-
	11-12	68/20	22	128	No	6-7	7	1	1-3	3-5	4-6
	12-13	68/20	-	-	-	-	-	1	1-3	3-5	-
	10-12	68/20	22	128	No	6-7	7	1	1-3	3-5	4-6
	10-11	68/20	22	128	No	6-7	7	1	1-3	3-5	4-6
	14	65/18	-	-	-	-	-	1	1	3	-
	14	65/18	-	-	-	-	-	1	1	3	-
	13	65/18	-	-	-	-	-	1	1	3	-
	14	65/18	-	-	-	-	-	1	1-3	3	-
	13	60/16	22	288	No	5	8	1	3	3	4
	12-13	60/16	-	-	-	-	-	-	1	2-3	-
	12	68/20	14-16	128+	Yes	11 weeks; SD from 2 to 7 true leaves	8-9	1	1	3	4
	12	68/20	14-16	128+	Yes	11 weeks; SD from 2 to 7 true leaves	8-9	1	1	3	4
	12	68/20	14-16	128+	Yes	11 weeks; SD from 2 to 7 true leaves	8-9	1	1	3	4
	12	68/20	21	288	No	5	8-9	1	1	2	3
	12	68/20	19	288	No	5	10-11	1	1	2	3
	12	68/20	-	-	-	-	-	1	1	2	3
	12	68/20	21	288	No	5	8-9	1	1	2	3
	8	68/20	22	288	No	4	7-8	1	1	3	4
	14-16	60	-	-	-	-	-	1	2	-	-
	11-12	60/16	15-16	128	No	8	10-11	1	3	4	5
	13-14	60/16	12-14	128	No	9-11	12-13	1	3	4	5
	-	-	21	128	No	4	9-10	1	1	1	1

* Schedule indicated is based on Midwest Region of the United States trial data and may change based on your local/regional climate. Please trial to re-confirm finish crop times before beginning commercial production.

** If yes, supplemental long day lighting should start after transplanting until visible bud or visible knot stage.

FORCING GUIDE FOR FIRST YEAR FLOWERING PERENNIALS FOR 2 MAJOR DATES IN NORTH AMERICA* (QUICK ANNUAL CYCLE)

GENUS	SPECIES	SERIES/VARIETY	USDA HARDINESS ZONE	FORCING FOR SPRING (WEEK 19)				
				IDEAL SOWING WEEK	PLUG SIZE*	PLUG BULKED UNDER NATURAL SD OR <=12 HR GROW WEEKS	SUPPLEMENTAL LD (14 HR OR NI) REQUIRED AFTER TRANSPLANT**	
LAVANDULA	<i>angustifolia</i>	Avignon Early Blue	6-8	46-47	288	7	No	
LAVANDULA	<i>angustifolia</i>	Blue Spear	6-8	-	-	-	-	
LAVANDULA	<i>angustifolia</i>	Ellagance Purple	5b-8a	46-47	288	7	No	
LAVANDULA	<i>angustifolia</i>	Lavance Deep Purple	5-8	-	-	-	-	
LAVANDULA	<i>stoechas</i>	Bandera	7-10	46-47	288	7	No	
LEUCANTHEMUM	<i>x superbum</i>	Madonna	3b-9a	-	-	-	-	
LEUCANTHEMUM	<i>x superbum</i>	White Lion	3b-9a	47-48	288	6	No	
LOBELIA	<i>speciosa</i>	Starship	6-10	45-46	288 to 72+	13-15 weeks; 10-hour SD bulk to 10 leaves	Yes	
LOBELIA	<i>speciosa</i>	Starship Scarlet Bronze Leaf	6-10	44-45	288 to 72+	14-16 weeks; 10-hour SD bulk to 10 leaves	Yes	
ORIGANUM	<i>hybrida</i>	Kirigami	5b-8a	52-1	128	6-7	Yes	
PEROVSKIA	<i>atriplicifolia</i>	Bluesette	4-9	50-51	288+	6-8	No (if DLI > 10 mol/day)	
PEROVSKIA	<i>atriplicifolia</i>	Blue Steel	4-9	48-49	128	6-8	No	
RUDBECKIA	<i>fulgida</i>	GoldBlitz	3-9	40-42	288 to 50+	15-16 weeks; SD from 2 to 10 true leaves	Yes	
RUDBECKIA	<i>fulgida</i>	Goldsturm	3-9	40-42	288 to 50+	15-16 weeks; SD from 2 to 10 true leaves	Yes	
SALVIA	<i>nemorosa</i>	New Dimension	4-8	1-2	128	7	Yes	
SALVIA	<i>nemorosa</i>	Salvatore Blue	4-8	1-2	128	7	No	
SALVIA	<i>patens</i>	Patio	8-10	1-2	128	7	Yes	
SCABIOSA	<i>columbaria</i>	Blue Note	5-7	49-51	128	8-9	No	
SEDUM (HYLOTELEPHIUM)	<i>spectabile</i>	Spectacular	3-9	44-46	72	8-9 weeks until 8 leaves	Yes; at 16 hours (or NI) for 5 weeks; SD forcing max 13 hours for colour for 8 weeks	
				44-46	72 preforced	8-9 weeks until 8 leaves, then 5 weeks at 16 hours (or NI)	No; SD forcing max 13 hours for colour for 8 weeks	
VERBENA	<i>bonariensis</i>	Buenos Aires	7-9	-	-	-	-	
VERBENA	<i>rigida</i>	Santos Purple	7-11	49-50	128	8	No	

FORCING GUIDE FOR FIRST YEAR FLOWERING PERENNIALS FOR 2 MAJOR DATES IN NORTH AMERICA*

SD = Short Day (12 hours or shorter, except Lobelia is 10 hours) • LD = Long Day • ADT = Average Daily Temperature

FORCING FOR FALL (WEEK 36)								PLUGS PER POT			
	FINISH UNDER PROPER DAYLENGTH (H) AND ADT (J) GROW WEEKS	FINISH ADT (°F/°C)	IDEAL SOWING WEEK	PLUG SIZE	PLUG SD BULKING REQUIRED	PLUG GROW WEEKS	FINISH UNDER NATURAL LD AND ADT 72-75°F/22-24°C GROW WEEKS	1 QT	1 GAL	2 GAL	3 GAL (FALL)
	12-14	55/10	20	128	No	6	9-10	1	3	4	5
	-	-	18	128	No	6	11-12	1	3	4	5
	12-14	60/16-Needs high light in South regions	-	-	-	-	-	1	3	-	-
	-	-	20	128	No	6	8-9	1	3	4	5
	12-14	60/16	-	-	-	-	-	1	2	-	-
	-	-	19-20	288	No	5	10-11	1	1	3	4
	17-18	66-68/19-20	-	-	-	-	-	1	1	3-4	5
	11-12	68/20	14-16	288	Yes	9-10 weeks; 10-hour SD to 6 true leaves	10-11	-	1	3	4
	12-13	68/20	13-15	288	Yes	9-10 weeks; 10-hour SD to 6 true leaves	11-12	-	1	3	4
	11-13	68/20	19-20	128	No	5	10-11	1	1	3	-
	12-13	68/20	19-20	180 to 128	No	6-7	10-11	1	1-3	3-4	5
	10-14	65/18-Needs low RH and high light in South regions	18-19	128	No	6-7	11-12	1	3	4	5
	14-15	68/20	11-12	288 to 128	No	5-6	17-18	-	1	1	3
	14-15	68/20	8-9	288 to 50+	Yes	14 weeks; SD from 2 to 10 true leaves	12-13	-	1	1	3
	10-11	65/18	24-25	288	No	4	7-8	1	3	5	-
	10-11	65/18	24-25	288	No	4	7-8	1	3	5	-
	10-11	65/18	-	-	-	-	-	1	3	5	-
	12-14	60/16	-	-	-	-	-	1	3	-	-
	12-13	65-72	10-12	180-72	keep below 13 hours DL	8-9	14-16 (in colour)	1	1	2-3	3-4
	12-13	65-72	10-12	180-72	keep below 13 hours DL	8-9	14-16 (in colour)	1	1	2-3	3-4
	-	-	18-19	128	No	8	10-11	-	1	2	3
	13-14	65/18-Needs high light in South regions	19-20	128	No	8	9-11	1	1	2	3

* Schedule indicated is based on Midwest Region of the United States trial data and may change based on your local/regional climate. Please trial to re-confirm finish crop times before beginning commercial production.

** If yes, supplemental long day lighting should start after transplanting until visible bud or visible knot stage.



POTTED PLANTS



WAVE	PHOTOPERIODIC LIGHTING CHART P. 4
ANNUALS	PROPAGATION GUIDE P. 8 / FINISHING GUIDE P. 44
PERENNIALS	PROPAGATION GUIDE P. 78 / FINISHING GUIDE P. 90 / FORCING GUIDE P. 108
CUT FLOWERS	PROPAGATION GUIDE P. 126 / FINISHING GUIDE P. 132
VEGETABLES & HERBS	PROPAGATION GUIDE P. 140 / FINISHING GUIDE P. 154
KITCHEN MINIS	PROPAGATION GUIDE P. 164 / FINISHING GUIDE P. 168

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
CAMPANULA <i>Campanula medium</i> Campanella™ F1 Series	PEL	288	6-7	1	No	5-10	5.8-6.2 pH 0.7-1.0 mmhos/cm	(m) Level 4-5 (t) 68-77°F (20-25°C) (f) Less than 100 ppm N (Less than 0.7 EC)	
CELOSIA <i>Celosia cristata</i> Concertina™ Series	COT	288	3-4	1	Light cover	2-4	5.8-6.2 pH 0.7-1.2 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
CELOSIA <i>Celosia spicata</i> Kosmo Series	COT	288	3-4	1	Light cover	2-4	5.5-6.2 pH 0.7-1.2 mmhos/cm	(m) Level 4 (t) 77°F (25°C) (l) Light	
EXACUM <i>Exacum affine</i> Princess Series	PEL	288	5-6	1	No	4-5	5.2-5.6 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 72-75°F (22-24°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
EXACUM <i>Exacum affine</i> Royal Dane Series	PEL	288	5-6	1	No	4-5	5.2-5.6 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 72-75°F (22-24°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
GERBERA <i>Gerbera jamesonii</i> ColorBloom™ F1 Series	COT	128	6-7	1	Light cover	4-7	5.5-5.8 pH 0.5-0.7 mmhos/cm	(m) Level 5 (t) 70-74°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
GERBERA <i>Gerbera jamesonii</i> Mega Revolution™ F1 Series	COT	128	6-7	1	Light cover	4-7	5.5-5.8 pH 0.5-0.7 mmhos/cm	(m) Level 5 (t) 70-74°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
GERBERA <i>Gerbera jamesonii</i> Revolution™ F1 Series	COT	128	6-7	1	Light cover	4-7	5.5-5.8 pH 0.5-0.7 mmhos/cm	(m) Level 5 (t) 70-74°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
HYPOESTES <i>Hypoestes phyllostachya</i> Splash Select™ Series	RAW	288	4-5	1	Yes	2-3	5.5-6.0 pH 0.5-0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional	
LISIANTHUS <i>Eustoma grandiflorum</i> Sapphire F1 Series	PEL	406	8-10	1	No	8-12	6.2-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Light	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 65-75°F (18-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 65-68°F (18-20°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 60-64°F (16-18°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Prevent damping off due to use of fungicides. Critical to the culture of Campanella is the short-day treatment in the plug stage. Start short-day treatment of <11 hours daylength 2 weeks after sowing. This prevents initiate flowers in the plug stage and results in the right plant habit for filling pots nicely after transplant. Keep short days for the rest of the plug time (4 weeks of short day treatment). After transplant, long days >14 hours are needed to initiate flowering. Campanella is responsive to daminozide 2,500 ppm or tank mix of daminozide 2,500 ppm and chlormequat chloride 500 ppm.
	(m) Level 4 (t) 68-72°F (20-22°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Keep media constantly moist; do not allow to dry out.
	(m) Level 4 (t) 72-77°F (22-25°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Keep media constantly moist; do not allow to dry out. Celosia makes a taproot and is sensitive to root damage.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	Water adequately to dissolve the pellet. To bench germ: Make sure trays are watered. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 7 to 8 days. Keep reemay wet. Remove reemay after another 1 to 2 days. PGRs are not necessary. Sticky traps for pests are recommended.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	Water adequately to dissolve the pellet. To bench germ: Make sure trays are watered. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 7 to 8 days. Keep reemay wet. Remove reemay after another 1 to 2 days. PGRs are not necessary. Sticky traps for pests are recommended.
	(m) Level 4 (t) 68-70°F (20-21°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-70°F (20-21°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 66-68°F (19-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Don't water with cold water. Use water with a minimum temperature of 60°F/16°C. Watering with cold water results in deformed leaves and disturbs plant growth.
	(m) Level 4 (t) 68-70°F (20-21°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ , 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-70°F (20-21°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ , 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 66-68°F (19-20°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ , 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Don't water with cold water. Use water with a temperature at least 60°F/16°C or higher. Watering with cold water will result in deformed leaves and will disturb plant growth. Do not pot too deeply when transplanting, as this may result in Crown Rot. Space plants when the leaves of the plants are touching each other, generally 5 to 6 weeks after transplanting.
	(m) Level 4 (t) 68-70°F (20-21°C) (l) 6 mol·m ⁻² ·d ⁻¹ , 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-70°F (20-21°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ , 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 66-68°F (19-20°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ , 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Don't water with cold water. Use water with a temperature at least 60°F/16°C or higher. Watering with cold water will result in deformed leaves and will disturb plant growth. Do not pot too deeply when transplanting, as this may result in Crown Rot. Space plants when the leaves of the plants are touching each other, generally 5 to 6 weeks after transplanting.
	(m) Level 3-4 (t) 66-68°F (19-20°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 66-68°F (19-20°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 66-68°F (19-20°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Too much light can cause leaves to curl.
	(m) Level 2-3 (t) 68-72°F (20-22°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 1-3 (t) 65-68°F (18-20°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 1-3 (t) 62-65°F (17-18°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Maintain pH above 6.5. Do not allow plugs to become rootbound. Lisianthus are tender seedlings and are recommended as a plug-purchased item.

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Acapulco™ XP Series	RAW	288	4-5	1	No	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Chilly Chili F1	RAW	288	4-5	1	No	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Cupala	RAW	288	4-5	1	No	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Harlequin	RAW	288	4-5	1	No	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Hot Pops Series	RAW	288	4-5	1	No	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Medusa	RAW	288	4-5	1	No	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Salsa XP Series	RAW	288	4-5	1	No	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Samba Series	RAW	288	4-5	1	No	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Santos Series	RAW	288	4-5	1	No	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Wicked	RAW	288	4-5	1	No	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
SUNFLOWER <i>Helianthus annuus</i> Ballad F1	RAW, TRT	128	2-3	1	Yes	3-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
SUNFLOWER <i>Helianthus annuus</i> Miss Sunshine F1	RAW, TRT	128	2-3	1	Yes	3-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Optional	
SUNFLOWER <i>Helianthus annuus</i> SunBuzz F1	RAW, TRT	128	2-3	1	Yes	3-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2 (t) 64-72°F (18-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 61-72°F (16-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Can also be propagated by direct sowing when grown in smaller pots (4-in./10 cm, 4.5-in./11-cm, 5-in./13-cm).
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 64-72°F (18-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 61-72°F (16-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Can also be propagated by direct sowing when grown in smaller pots (4-in./10 cm, 4.5-in./11-cm, 5-in./13-cm).
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2 (t) 64-72°F (18-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 61-72°F (16-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Can also be grown by direct sowing in smaller pots (quart, 5 in./13 cm).

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
CAMPANULA <i>Campanula medium</i> Campanella™ F1 Series	288	(day) 62-64°F (17-18°C) (night) 58-60°F (14-16°C)	5.8-6.2 pH 1.0 mmhos/cm	Obligate Long Day Maintain long days after transplant >14 hours of day light for flower initiation. If more vigorous plants are needed, two weeks of short-day treatment <11 hours daylength before long-day treatment >14 hours daylength will result in more vigorous plants.	
CELOSIA <i>Celosia cristata</i> Concertina™ Series	288	(day) 65-72°F (18-22°C) (night) 59-65°F (15-18°C)	5.8-6.2 pH 1.0-1.5 mmhos/cm	Facultative Short Day Crop can be finished in long day, but finishing in short days after transplant increases uniform flowering and habit across the series.	
CELOSIA <i>Celosia spicata</i> Kosmo Series	288	(day) 65-68°F (18-20°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 1.0-1.5 mmhos/cm	Facultative Short Day Will flower faster and uniformly under daylength of 13 hours or shorter.	
EXACUM <i>Exacum affine</i> Princess Series	288	(day) 70-75°F (21-24°C) (night) 66-70°F (19-21°C)	5.4-5.8 pH 1.5-2.0 mmhos/cm	Facultative Long Day When light levels are low, use supplemental lighting.	
EXACUM <i>Exacum affine</i> Royal Dane Series	288	(day) 70-75°F (21-24°C) (night) 66-70°F (19-21°C)	5.4-5.8 pH 1.5-2.0 mmhos/cm	Facultative Long Day When light levels are low, use supplemental lighting.	
GERBERA <i>Gerbera jamesonii</i> ColorBloom™ F1 Series	128	(day) 66-68°F (19-20°C) (night) 62-66°F (17-19°C)	5.5-6.0 pH 0.5-1.0 mmhos/cm	Facultative Short Day	
GERBERA <i>Gerbera jamesonii</i> Mega Revolution™ F1 Series	128	(day) 66-68°F (19-20°C) (night) 62-66°F (17-19°C)	5.5-6.0 pH 0.5-1.0 mmhos/cm	Facultative Short Day	
GERBERA <i>Gerbera jamesonii</i> Revolution™ F1 Series	128	(day) 66-68°F (19-20°C) (night) 62-66°F (17-19°C)	5.5-6.0 pH 0.5-1.0 mmhos/cm	Facultative Short Day	
HYPOESTES <i>Hypoestes phyllostachya</i> Splash Select™ Series	288	(day) 65-75°F (18-24°C) (night) 62-65°F (17-18°C)	5.5-6.0 pH 1.0-1.5 mmhos/cm		
LISIANTHUS <i>Eustoma grandiflorum</i> Sapphire F1 Series	406	(day) 68-75°F (20-24°C) (night) 55-60°F (13-16°C)	6.5-7.2 pH 0.75 mmhos/cm	Facultative Long Day	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Acapulco™ XP Series	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Chilly Chili F1	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Cupala	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	

	FINISHING PROGRAMS	KEY TIPS
	5"/6"/1 Gallon/15 cm , 1 (ppp), 9-10 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 7-8 (weeks), Summer	Recommended pot size is 5 in./13 cm. Long day treatment is essential in finishing products. Pinching is not needed. When using bigger pots (6-in./15-cm or bigger), a soft pinch can result in fuller and bigger plants.
	4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Summer 4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Autumn	Don't pinch the plants. Recommended pot sizes: quart, 5 in./13 cm.
	4"/4.5"/Quart/10 cm , 1 (ppp), 6-8 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 5-7 (weeks), Summer	Keep medium constantly moist and do not allow to dry out. Does not need PGR. But if necessary, daminozide 2,000 to 2,500 ppm (2.4-3.0 g/l 85% formulation or 3.1 to 4.0 g/l 64% formulation) with 2 to 3 applications can be used. Do not treat when flower buds become visible.
	4"/4.5"/Quart/10 cm , 1 (ppp), 12 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 10 (weeks), Summer	Irrigation from below is recommended. Space when plants begin to touch. Grow on the "dry side" for better compact habit. Humidity must not exceed 80%, to reduce risk of fungal disease. PGR is recommended during the finish. Sprays must begin 3 weeks after potting (small pots, 1 week after potting). The subsequent treatments are dependent upon growing conditions and the desired size of the plant. Paclobutrazol and flurprimidol have been found to be effective on Exacum.
	4"/4.5"/Quart/10 cm , 1 (ppp), 12 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 10 (weeks), Summer	Irrigation from below is recommended. Space when plants begin to touch. Grow on the "dry side" for better compact habit. Humidity must not exceed 80%, to reduce risk of fungal disease. PGR is recommended during the finish. Sprays must begin 3 weeks after potting (small pots, 1 week after potting). The subsequent treatments are dependent upon growing conditions and the desired size of the plant. Paclobutrazol and flurprimidol have been found to be effective on Exacum.
	4"/4.5"/Quart/10 cm , 1 (ppp), 8-9 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Summer 4"/4.5"/Quart/10 cm , 1 (ppp), 8-9 (weeks), Autumn 4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Winter	ColorBloom needs no or less PGR compared to Revolution. Be careful with the use of PGR; if necessary, use daminozide 1,000 to 2,500 spray. Stop use after seeing the first flower buds. Use quart/4 to 4.5-in./11 to 12-cm pots. Fill pots all the way to a uniform soil level. When transplanting, do not plant too deep, as this may result in Crown Rot. Space plants when leaves are touching, generally around 5 weeks after transplanting.
	5"/6"/1 Gallon/15 cm , 1 (ppp), 10-11 (weeks), Spring, PGR daminozide 1,000-2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 1 (ppp), 8-9 (weeks), Summer, PGR daminozide 1,000-2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 1 (ppp), 10-11 (weeks), Autumn, PGR daminozide 1,000-2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 1 (ppp), 11-12 (weeks), Autumn, PGR daminozide 1,000-2,500 ppm Spray	Use 6-in. (15 cm) pots or larger. Fill pots all the way to a uniform soil level. When transplanting, do not plant too deep, as this may result in Crown Rot. Space plants when leaves are touching, generally 5 to 6 weeks after transplanting. To reduce stretching, use daminozide at 1,000 to 2,500 ppm 1 to 2 times with an interval of 9 to 10 days. Stop use after seeing the first flower buds.
	5"/6"/1 Gallon/15 cm , 1 (ppp), 9-10 (weeks), Spring, PGR daminozide 1,000-2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 1 (ppp), 7-8 (weeks), Summer, PGR daminozide 1,000-2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 1 (ppp), 9-10 (weeks), Autumn, PGR daminozide 1,000-2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 1 (ppp), 10-11 (weeks), Winter, PGR daminozide 1,000-2,500 ppm Spray	Use 4.5 to 5.5-in. (11 to 14-cm) pots for standard Revolution. Fill pots all the way to a uniform soil level. When transplanting, do not plant too deep, as this may result in Crown Rot. Space plants when leaves are touching, generally 5 to 6 weeks after transplanting. To reduce stretching, use daminozide at 1,000 to 2,500 ppm 1 to 2 times with an interval of 9 to 10 days. Stop use after seeing the first flower buds.
	Cell Pack , 1 (ppp), 5-6 (weeks), Spring, PGR daminozide/chlormequat chloride tank mix 1,000/500 ppm Spray 4"/4.5"/Quart/10 cm , 3-4 (ppp), 5-6 (weeks), Spring, PGR daminozide/chlormequat chloride tank mix 1,000/500 ppm Spray	Too much light can cause leaves to curl. Grow under low light conditions (400 to 500 f.c./4,000 to 5,000 Lux).
	4"/4.5"/Quart/10 cm , 1 (ppp), 12-14 (weeks), Spring	Maintain pH above 6.5. Do not allow plugs to become rootbound. Lisianthus are tender seedlings and are recommended as a plug-purchased item.
	4"/4.5"/Quart/10 cm , 1 (ppp), 12-13 (weeks), Autumn, PGR chlormequat chloride 1,000 ppm Spray	Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times. Grow plants dry to minimise stretch.
	4"/4.5"/Quart/10 cm , 1 (ppp), 7-13 (weeks), Summer 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-13 (weeks), Summer 4"/4.5"/Quart/10 cm , 1 (ppp), 7-13 (weeks), Autumn 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-13 (weeks), Autumn	Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times. Grow plants dry to minimise stretch.
	4"/4.5"/Quart/10 cm , 1 (ppp), 11-12 (weeks), Autumn, PGR chlormequat chloride 1,000 ppm Spray	Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times. Grow plants dry to minimise stretch.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Harlequin	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Hot Pops Series	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Medusa	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Salsa XP Series	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Samba Series	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Santos Series	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Wicked	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
SUNFLOWER <i>Helianthus annuus</i> Ballad F1	128	(day) 64-72°F (18-22°C) (night) 61-64°F (16-18°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day Can flower under different daylengths, but will flower slightly quicker under short days.	
SUNFLOWER <i>Helianthus annuus</i> Miss Sunshine F1	128	(day) 64-72°F (18-22°C) (night) 61-64°F (16-18°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day Can flower under different daylengths, but will flower slightly quicker under short days.	
SUNFLOWER <i>Helianthus annuus</i> SunBuzz F1	128	(day) 64-72°F (18-22°C) (night) 61-64°F (16-18°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day Plant flowers faster under short day conditions. Growing in daylength of 14 hours or more delays flowering significantly.	

	FINISHING PROGRAMS	KEY TIPS
	4"/4.5"/Quart/10 cm , 1 (ppp), 13-14 (weeks), Autumn, PGR chlormequat chloride 1,000 ppm Spray	Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times. Grow plants dry to minimise stretch.
	4"/4.5"/Quart/10 cm , 1 (ppp), 7-13 (weeks), Summer 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-13 (weeks), Summer 4"/4.5"/Quart/10 cm , 1 (ppp), 7-13 (weeks), Autumn 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-13 (weeks), Autumn	Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times. Grow plants dry to minimise stretch.
	4"/4.5"/Quart/10 cm , 1 (ppp), 7-13 (weeks), Summer 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-13 (weeks), Summer 4"/4.5"/Quart/10 cm , 1 (ppp), 7-13 (weeks), Autumn 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-13 (weeks), Autumn	Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times. Grow plants dry to minimise stretch.
	4"/4.5"/Quart/10 cm , 1 (ppp), 12-13 (weeks), Autumn, PGR chlormequat chloride 1,000 ppm Spray	Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times. Grow plants dry to minimise stretch.
	4"/4.5"/Quart/10 cm , 1 (ppp), 14-15 (weeks), Autumn, PGR chlormequat chloride 1,000 ppm Spray	Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times. Grow plants dry to minimise stretch.
	4"/4.5"/Quart/10 cm , 1 (ppp), 12-13 (weeks), Autumn, PGR chlormequat chloride 1,000 ppm Spray	Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times. Grow plants dry to minimise stretch.
	4"/4.5"/Quart/10 cm , 1 (ppp), 7-13 (weeks), Summer 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-13 (weeks), Summer 4"/4.5"/Quart/10 cm , 1 (ppp), 7-13 (weeks), Autumn 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-13 (weeks), Autumn	Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times. Grow plants dry to minimise stretch.
	5"/6"/1 Gallon/15 cm , 1-3 (ppp), 8-9 (weeks), Spring, PGR daminozide 3,500-5,000 ppm Spray 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-8 (weeks), Summer, PGR daminozide 3,500-5,000 ppm Spray	Plants grow shorter under short days. Plants will grow taller under longer days when no PGRs are applied. We recommend 1 ppp in 5-in./13-cm pots and 1 to 3 ppp in gallon pots.
	5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-8 (weeks), Spring, PGR daminozide 1,250-2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 6-7 (weeks), Summer, PGR daminozide 1,250-2,500 ppm Spray	Plants grow shorter under short days. Plants will grow taller under longer days when no PGRs are applied. We recommend 1 ppp in 5-in./13-cm pots and 1 to 3 ppp in gallon pots.
	5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-8 (weeks), Spring, PGR daminozide 3,500-5,000 ppm Spray 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 6-7 (weeks), Summer, PGR daminozide 3,500-5,000 ppm Spray	Plants will stay shorter under short day conditions and grow taller under long day conditions. Take this into consideration when using PGRs. 1 plant per 5-in./13-cm pot and 3 plants per gallon pot are recommended.



CUT FLOWERS



WAVE	PHOTOPERIODIC LIGHTING CHART P. 4
ANNUALS	PROPAGATION GUIDE P. 8 / FINISHING GUIDE P. 44
PERENNIALS	PROPAGATION GUIDE P. 78 / FINISHING GUIDE P. 90 / FORCING GUIDE P. 108
POTTED PLANTS	PROPAGATION GUIDE P. 114 / FINISHING GUIDE P. 120
VEGETABLES & HERBS	PROPAGATION GUIDE P. 140 / FINISHING GUIDE P. 154
KITCHEN MINIS	PROPAGATION GUIDE P. 164 / FINISHING GUIDE P. 168

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
ANEMONE <i>Anemone coronaria</i> Mona Lisa® F1 Series	RAW	288	7-8	1	Yes	10-14	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 65-70°F (18-21°C)	
ASCLEPIAS <i>Asclepias curassavica</i> Silky Series	RAW	288	5-6	1	Light cover	5-11	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
CAMPANULA <i>Campanula medium</i> Campana F1 Series	PEL	288	7-8	1	No	4-5	5.8-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
CARTHAMUS <i>Carthamus tinctorius</i> Grenade Series	COT	Direct sow	N/A					(t) 54-60°F (12-16°C) (f) Less than 100 ppm N (Less than 0.7 EC)	
CELOSIA <i>Celosia spicata</i> Celway™ Series	PEL	288	2-3	1	Light cover	3-4	5.8-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
CELOSIA <i>Celosia cristata</i> Neo™ Series	PEL	288	2-3	1	Light cover	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
CELOSIA <i>Celosia cristata (Cockscomb)</i> Spring Green	PEL	288	2-3	1	Light cover	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
CELOSIA <i>Celosia plumosa</i> Sunday™ Series	PEL	288	2-3	1	Light cover	3-4	5.8-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 77°F (25°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
DELPHINIUM <i>Delphinium x belladonna</i> Blue Donna	RAW	288	6-8	1	Yes	7-10	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
DELPHINIUM <i>Delphinium elatum</i> Guardian F1 Series	RAW	288	5-6	1	Yes	5-6	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 4-5 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 60°F (16°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Because anemone is slow-growing, maintain appropriate conditions such as moisture, temperature, fertilisation and insect disease control to produce a healthy plug.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 3,000-4,000 f.c. (32,300-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 370-2,500 f.c. (4,000-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 370-2,500 f.c. (4,000-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 370-5,000 f.c. (4,000-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Qualitative long-day plant. To ensure sufficient vegetative growth and stem length, provide short-day conditions in plug stage (<11 hours) from approximately 1.5 to 2 weeks after sowing.
				Direct seeding is recommended. Plan for rows to be spaced 12 in. (30 cm) apart; thin seedlings to 2.5 in. (6 cm) within the row. Carthamus forms a taproot, so if attempting to grow from plugs, plan to transplant seedlings 5 to 7 days after sowing.
	(m) Level 4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Quantitative short-day plant. Flowers will initiate under short days. The optimum daylength to reach the appropriate stem length is 12 to 13 hours. Celosia makes a taproot and is sensitive to root damage, which will result in early bud formation, deformed flowers and less uniformity. Plant before the plugs get rootbound. Maintain constantly moist media, especially for the first 2 weeks after transplant, to prevent premature flowering.
	(m) Level 4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Quantitative short-day plant. Flowers will initiate under short days. Celosia makes a taproot and is sensitive to root damage, which will result in early bud formation, deformed flowers and less uniformity. Therefore, plant before the plugs get rootbound. Maintain a constantly moist media, especially for the first 2 weeks after transplanting to prevent premature flowering.
	(m) Level 4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Quantitative short-day plant. Flowers will initiate under short days. The optimum daylength to reach the appropriate stem length is 12 to 13 hours. Celosia makes a taproot and is sensitive to root damage, which will result in early bud formation, deformed flowers and less uniformity. Plant before the plugs get rootbound. Maintain constantly moist media, especially for the first 2 weeks after transplant, to prevent premature flowering.
	(m) Level 4 (t) 72-77°F (22-25°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Quantitative short-day plant. Flowers will initiate under short days. The optimum daylength to reach the appropriate stem length is 12 to 13 hours. Celosia makes a taproot and is sensitive to root damage, which will result in early bud formation, deformed flowers and less uniformity. Plant before the plugs get rootbound. Maintain constantly moist media, especially for the first 2 weeks after transplant, to prevent premature flowering.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ , 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ , 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
DIANTHUS <i>Dianthus barbatus interspecific</i> Amazon™ F1 Series	PEL	288	4-5	1	Yes	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-68°F (18-20°C) (l) Light	
DIANTHUS <i>Dianthus barbatus</i> Sweet™ F1 Series	PEL	288	5-6	1	Yes	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-68°F (18-20°C) (l) Optional	
GOMPHRENA <i>Gomphrena pulchella</i> Fireworks	COT	288	5-6	1	Yes	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-75°F (20-24°C) (l) Light	
GOMPHRENA <i>Gomphrena haageana</i> QIS Series	RAW	288	5-6	1	Yes	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C)	
LISIANTHUS <i>Eustoma grandiflorum</i> ABC™ F1 Series	PEL	406	8-10	1	Light cover	8-12	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (f) Less than 100 ppm N (Less than 0.7 EC)	
LISIANTHUS <i>Eustoma grandiflorum</i> Can Can F1 Series	PEL	406	8-10	1	Light cover	8-12	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (f) Less than 100 ppm N (Less than 0.7 EC)	
LISIANTHUS <i>Eustoma grandiflorum</i> Flare F1 Series	PEL	406	8-10	1	Light cover	8-12	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (f) Less than 100 ppm N (Less than 0.7 EC)	
MARIGOLD <i>Tagetes erecta</i> Xochi™ F1 Series	COT	288	3-4	1	Yes	2-3	6.2-6.5 pH 0.08 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
MATRICARIA <i>Tanacetum parthenium</i> Vegmo Series	PEL	288	4-5	1	No	3-5	5.6-5.9 pH 0.5 mmhos/cm	(m) Level 5 (t) 64-68°F (18-20°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
MATTHIOLA <i>Matthiola incana</i> Column Stock Series	RAW	Direct sow	N/A		Yes	14-21	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C)	
MATTHIOLA <i>Matthiola incana</i> Katz Hi Double Series	RAW	512	4	1	Yes	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C)	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 5-8 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 8-10 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC) (p) paclobutrazol 4-6 ppm Spray	(m) Level 3 (t) 60-65°F (16-18°C) (l) 10 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	A small percentage (3 to 5%) of early off-types can be observed with Amazon dianthus at 4 to 5 weeks from sowing. These plants should be removed/discarded at transplant.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 5-8 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 8-10 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 55-60°F (13-16°C) (l) 10 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 64-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	If needed, young plants respond well to daminozide.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 60-65°F (16-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	Avoid high media temperature (>72°F/22°C) beginning in Stage 2, as it can induce rosetting in the seedling, which will cause stunting after the plugs are transplanted. Also, it is very important to establish a preventative disease and insect control practice for lisianthus production.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	Avoid high media temperature (>72°F/22°C) beginning in Stage 2, as it can induce rosetting in the seedling, which will cause stunting after the plugs are transplanted. Also, it is very important to establish a preventative disease and insect control practice for lisianthus production.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	Avoid high media temperature (>72°F/22°C) beginning in Stage 2, as it can induce rosetting in the seedling, which will cause stunting after the plugs are transplanted. Also, it is very important to establish a preventative disease and insect control practice for lisianthus production.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-72°F (20-22°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 65-70°F (18-21°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity. Higher temperatures inhibit germination, shorten crop time and cause stretching. Plant growth regulators are not generally required.
	(m) Level 3-4 (t) 64-68°F (18-20°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 64-68°F (18-20°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 55-60°F (13-16°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	In field grown-type stocks, typically the seed is directly sown into the field, so it's important to maintain the optimal field conditions, especially the moisture conditions, for the seed to germinate and establish.
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 55-60°F (13-16°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Katz Hi Double produces a minimum of 90% double-flowering plants. Katz Hi Double is not recommended for seedling selection of double-flowering plants. Incorporate a preventative fungicide program for downy mildew control.

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
MATTHIOLA <i>Matthiola incana</i> Katz Series	RAW	512	4	1	Yes	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C)	
MATTHIOLA <i>Matthiola incana</i> Mathilda™ Series	RAW	288	5-6	1	Yes	2-4	5.6-5.9 pH 0.5 mmhos/cm	(m) Level 4 (t) 59-64°F (15-18°C) (f) Less than 100 ppm N (Less than 0.7 EC)	
PANICUM <i>Panicum capillare</i> Frosted Explosion	MPL	288	4-5	1	Light cover	3-8	5.8-6.4 pH 0.75 mmhos/cm	(m) Level 5-4 (t) 65-68°F (18-20°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
SNAPDRAGON <i>Antirrhinum majus</i> Cool F1 Series	RAW	406	4-5	1	Light cover	4-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C)	
SNAPDRAGON <i>Antirrhinum majus</i> Early Potomac™ F1 Series	RAW	406	4-5	1	Light cover	4-6	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C)	
SNAPDRAGON <i>Antirrhinum majus</i> Maryland F1 Series	RAW	406	4-5	1	Light cover	4-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C)	
SNAPDRAGON <i>Antirrhinum majus</i> Monaco F1 Series	RAW	406	4-5	1	Light cover	4-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C)	
SNAPDRAGON <i>Antirrhinum majus</i> Potomac™ F1 Series	RAW	406	4-5	1	Light cover	4-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C)	
TRACHELIUM <i>Trachelium caeruleum</i> Lake Series	PEL	288	7-9	1	No	5-7	6.0 pH 0.5-0.9 mmhos/cm	(m) Level 4 (t) 62-70°F (17-21°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 55-60°F (13-16°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Katz is not recommended for seedling selection of double-flowering matthiola. Incorporate a preventative fungicide program for downy mildew control.
	(m) Level 3-4 (t) 59-64°F (15-18°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 59-64°F (15-18°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 1-2 (t) 59-64°F (15-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Double-flowering matthiola may be selected from single-flowering types by exposing seedlings with fully expanded cotyledons to 41°F (5°C) for approximately 3 to 5 days. At this point, seedlings of double-flowering plants will appear a pale green, while singles remain dark green. After removal from cold treatment, double-flowering seedlings will appear yellow and chlorotic within 1 to 2 days, while single-flowering seedlings remain robust and green. This cold treatment may only be done once to selectable matthiola plugs.
	(m) Level 4-3 (t) 65-68°F (18-20°C) (l) 2,500 f.c. (26,900 Lux)	(m) Level 3 (t) 60-65°F (16-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 5,000 f.c. (53,800 Lux)	Panicum Frosted Explosion has a facultative short day flowering response. Plugs should be grown under 14+ hours of light. MPL sown trays need sufficient tray watering (guideline is approximately 500 ml per 30 seconds, average belt speed); then trays needs quick transfer to a high-moisture germ chamber to avoid dry back of the clay pellet material.
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 60°F (16°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Avoid high media pH (>6.5), as this can cause iron and boron deficiency. Tip abortion of the seedlings can be caused by boron deficiency, high EC and excessive moisture accumulation on the growing tip, followed by poor air circulation. Incorporate a preventative fungicide program for downy mildew control.
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 60°F (16°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Avoid high media pH (>6.5), as this can cause iron and boron deficiency. Tip abortion of the seedlings can be caused by boron deficiency, high EC and excessive moisture accumulation on the growing tip, followed by poor air circulation. Incorporate a preventative fungicide program for downy mildew control.
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 60°F (16°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Avoid high media pH (>6.5), as this can cause iron and boron deficiency. Tip abortion of the seedlings can be caused by boron deficiency, high EC and excessive moisture accumulation on the growing tip, followed by poor air circulation. Incorporate a preventative fungicide program for downy mildew control.
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 60°F (16°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Avoid high media pH (>6.5), as this can cause iron and boron deficiency. Tip abortion of the seedlings can be caused by boron deficiency, high EC and excessive moisture accumulation on the growing tip, followed by poor air circulation. Incorporate a preventative fungicide program for downy mildew control.
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 60°F (16°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Avoid high media pH (>6.5), as this can cause iron and boron deficiency. Tip abortion of the seedlings can be caused by boron deficiency, high EC and excessive moisture accumulation on the growing tip, followed by poor air circulation. Incorporate a preventative fungicide program for downy mildew control.
	(m) Level 3-4 (t) 62-70°F (17-21°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-70°F (17-21°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-70°F (17-21°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Trachelium is very sensitive to high salts during germination, particularly high ammonium.

CLASS/SERIES	DAYLENGTH	FINISHING PROGRAMS
ANEMONE <i>Anemone coronaria</i> Mona Lisa® F1 Series	Day Neutral	Greenhouse , Support: Not needed (day) 60-65°F (16-18°C) (night) 55°F (13°C) 2-4 plants/ft² (22-43 plants/m²), 12-14 weeks
ASCLEPIAS <i>Asclepias curassavica</i> Silky Series	Day Neutral	Field grown , Support: Not needed 3-4 plants/ft² (32-43 plants/m²), 8-12 weeks Greenhouse , Support: Not needed (day) 70-75°F (21-24°C) (night) 60-65°F (16-18°C) 2-3 plants/ft² (22-32 plants/m²), 10-14 weeks Tunnel , Support: Not needed 3-4 plants/ft² (32-43 plants/m²), 8-12 weeks
CAMPANULA <i>Campanula medium</i> Campana F1 Series	Facultative Long Day Plants need long day (>14 hours daylength) for flower initiation.	Greenhouse , Support: Recommended (day) 60-70°F (16-21°C) (night) 55-60°F (13-16°C) 6-8 plants/ft² (65-86 plants/m²), 8-12 weeks
CARTHAMUS <i>Carthamus tinctorius</i> Grenade Series		Field grown , Support: Recommended 6 plants/ft² (65 plants/m²), 8-12 weeks Tunnel , Support: Recommended 4-6 plants/ft² (43-65 plants/m²), 8-12 weeks
CELOSIA <i>Celosia spicata</i> Celway™ Series	Facultative Short Day Facultative short-day plant. Flowers will initiate faster under short days. The optimum daylength for Celway to reach the maximum stem length lies between 12 to 13 hours, but will perform well under longer daylengths.	Field grown , Support: Recommended (day) 65-80°F (18-27°C) (night) 60-70°F (16-21°C) 6-8 plants/ft² (65-86 plants/m²), 8-10 weeks Tunnel , Support: Recommended (day) 65-80°F (18-27°C) (night) 60-70°F (16-21°C) 6-8 plants/ft² (65-86 plants/m²), 8-12 weeks
CELOSIA <i>Celosia cristata</i> Neo™ Series	Facultative Short Day Facultative short-day plant. Flowers will initiate faster under short days.	Greenhouse , Support: Required (day) 60-65°F (16-18°C) (night) 60°F (16°C) 6-8 plants/ft² (65-86 plants/m²), 8-12 weeks Tunnel , Support: Required (day) 60-75°F (16-24°C) (night) 59-65°F (15-18°C) 6-8 plants/ft² (65-86 plants/m²), 6-10 weeks
CELOSIA <i>Celosia cristata (Cockscomb)</i> Spring Green	Facultative Short Day The optimum daylength to reach the maximum stem length lies between 12 to 13 hours.	Field grown , Support: Recommended (day) 65-80°F (18-27°C) (night) 60-70°F (16-21°C) 6-8 plants/ft² (65-86 plants/m²), 6-8 weeks Greenhouse , Support: Recommended (day) 60-65°F (16-18°C) (night) 60°F (16°C) 6-8 plants/ft² (65-86 plants/m²), 8-14 weeks
CELOSIA <i>Celosia plumosa</i> Sunday™ Series	Facultative Short Day The optimum daylength for Celosia Sunday to reach the maximum stem length is between 12 to 13 hours. Under greenhouse short-day conditions, provide daylength extension up to 13 hours to allow plants to elongate and to prevent early flowering. When daylength is over 13 hours, short-day treatments may be applied. Provide a dark period for a minimum of 12 hours for 5 to 6 weeks. Do not start short days until 1 week after planting. Under field conditions, crop will initiate flowers faster under short days. Schedule your crop to receive long days after transplant to achieve stem length desired.	Field grown , Support: Required (day) 65-80°F (18-27°C) (night) 60-70°F (16-21°C) 6-8 plants/ft² (65-86 plants/m²), 8-12 weeks Greenhouse , Support: Required (day) 60-65°F (16-18°C) (night) 60°F (16°C) 6-8 plants/ft² (65-86 plants/m²), 12-16 weeks
DELPHINIUM <i>Delphinium x belladonna</i> Blue Donna	Facultative Long Day	Field grown , Support: Recommended (day) 63-68°F (17-20°C) (night) 53-58°F (12-14°C) 1-2 plants/ft² (11-22 plants/m²), 12-15 weeks Greenhouse , Support: Recommended (day) 63-68°F (17-20°C) (night) 53-58°F (12-14°C) 1-2 plants/ft² (11-22 plants/m²), 12-15 weeks
DELPHINIUM <i>Delphinium elatum</i> Guardian F1 Series	Facultative Long Day	Field grown , Support: Recommended (day) 68-71°F (20-22°C) (night) 60-65°F (16-18°C) 4 plants/ft² (43 plants/m²), 13-16 weeks Greenhouse , Support: Recommended (day) 68-71°F (20-22°C) (night) 60-65°F (16-18°C) 4 plants/ft² (43 plants/m²), 11-13 weeks

RECOMMENDED PLUG SIZE	STEM LENGTH	KEY TIPS
288	18 in. (46 cm)	Optimal stem length can be achieved with cool growing conditions (53 to 58°F/12 to 14°C). If flowering too short while maintaining optimal temperatures, reduce light intensity.
288	22-28 in. (56-71 cm)	
288	30-34 in. (76-86 cm)	To ensure sufficient vegetative growth and stem length, use short day grown plugs. Best practices for producing cut flower Campanula Campana must be followed to assure best stem length and strength, and to control the timing of bud set. When transplanting under long or increasing daylength, make sure plants have short days (<13 hours) for 4 to 5 weeks, using black cloth where needed. Follow that with natural long days (>14 hours) for production finish. When transplanting under short days, give plants natural short days (13 hours) for 4 to 5 weeks, followed by daylength extension to long days (>14 hours) for production finish. Mum lighting from 10 p.m. to 2 a.m. can be used. Maintain a medium moisture level. To reach sufficient stem length, Campanula medium needs adequate moisture and fertilisation. Dry growing conditions will cause early flowering and reduced stem length. However, overwatering will cause weaker stems and root systems, which will cause plants to fall over.
Direct sow	32-40 in. (81-102 cm)	Harvest timing is affected by heat and light quality, and reflects direct sow method. If desired, apical bud can be removed to ensure more buds opening at the same time.
288	30-48 in. (76-122 cm)	Celosia makes a taproot and is sensitive to root damage, which will result in early bud formation, deformed flowers and less uniformity. Therefore, plant before the plugs get rootbound. Maintain a constantly moist media, especially for the first 2 weeks after transplanting, to prevent premature flowering.
288	28-40 in. (71-102 cm)	We recommend giving the plants a short-day treatment for 3 to 4 weeks after transplant for the best uniformity and quality crop. After the short-day treatment, plants can be grown in long days. Celosia makes a taproot and is sensitive to root damage, which will result in early bud formation, deformed flowers and less uniformity. Therefore, plant before the plugs get rootbound. Maintain a constantly moist media, especially for the first 2 weeks after transplanting, to prevent premature flowering. Before flower development, temperatures 65-75°F (day) 63-65°F (night) are recommended. Better flower quality is achieved if greenhouse temperatures are lowered as flowers develop. Not recommended for pinch.
288	24-40 in. (61-102 cm)	Celosia makes a taproot and is sensitive to root damage, which will result in early bud formation, deformed flowers and less uniformity. Therefore, plant before the plugs get rootbound. Maintain a constantly moist media, especially for the first 2 weeks after transplanting, to prevent premature flowering. Before flower development, temperatures 65-75°F (day) 63-65°F (night) are recommended. Better flower quality is achieved if greenhouse temperatures are lowered as flowers develop. Do not pinch Spring Green.
288	28-40 in. (71-102 cm)	Celosia makes a taproot and is sensitive to root damage, which will result in early bud formation, deformed flowers and less uniformity. Therefore, plant before the plugs get rootbound. Maintain a constantly moist media, especially for the first 2 weeks after transplanting, to prevent premature flowering. Before flower development, temperatures 65-75°F (day) 63-65°F (night) are recommended. Better flower quality is achieved if greenhouse temperatures are lowered as flowers develop.
288	20-35 in. (51-89 cm)	Planting density: Annual greenhouse production = 12 to 16 plants/m ² . Annual field production = 16 to 18 plants/m ² . Perennial field production = 9 plants/m ² . Do not pinch. Fertilise frequently with well-balanced fertiliser. Avoid ratio N:K larger than 2. Irrigation: overhead only first 4 to 6 weeks, then use drip. Needs medium to high irrigation, but keep plants dry and low RH. Prefers high light conditions. Cut stems 6 in. (15 cm) above ground to prevent Root Rot. Harvest when 25 to 30% of flowers are open. For annual cycle: from early transplant (January/February); first harvest after 12 to 15 weeks; then next 1 or 2 harvests 5 to 6 weeks later. Second and third harvests give best quality stems.
288	30-39 in. (76-99 cm)	Autumn: greenhouse 13 weeks, field 16 weeks. Spring: greenhouse 11 weeks, field 13 weeks. Treat cut stems with an ethylene-inhibiting agent. In temperate areas such as coastal California, plugs are generally transplanted into the field August through October, and February to early May. Autumn transplants will flower the following Spring (February onward); Spring transplants flower late Spring.

CLASS/SERIES	DAYLENGTH	FINISHING PROGRAMS
DIANTHUS <i>Dianthus barbatus interspecific</i> Amazon™ F1 Series	Facultative Long Day Best results are achieved when plants are grown in full sun or in a high-light greenhouse. The combination of high light with high heat will result in shorter stems.	Tunnel , Support: Required (day) 60-72°F (16-22°C) (night) 50-60°F (10-16°C) 3-4 plants/ft² (32-43 plants/m²), 14-18 weeks
DIANTHUS <i>Dianthus barbatus</i> Sweet™ F1 Series	Facultative Long Day Best results are achieved when plants are grown in full sun or in a high-light greenhouse. The combination of high light with high heat will result in shorter stems.	Greenhouse , Support: Required (day) 60-65°F (16-18°C) (night) 55-60°F (13-16°C) 6-8 plants/ft² (65-86 plants/m²), 11-13 weeks Tunnel , Support: Required (day) 60-72°F (16-22°C) (night) 50-60°F (10-16°C) 6-8 plants/ft² (65-86 plants/m²), 11-15 weeks
GOMPHRENA <i>Gomphrena pulchella</i> Fireworks	Day Neutral	Field grown , Support: Recommended 1 plants/ft² (11 plants/m²), 10-12 weeks
GOMPHRENA <i>Gomphrena haageana</i> QIS Series		Field grown , Support: Not needed (day) 65-75°F (18-24°C) (night) 63-66°F (17-19°C) 1-2 plants/ft² (11-22 plants/m²), 10-12 weeks
LISIANTHUS <i>Eustoma grandiflorum</i> ABC™ F1 Series	Facultative Long Day During Winter when daylength is shorter than 12 hours, supplemental light (incandescent or HID) can be used. Long-day (greater than 14 hours) or night interruption from 10 p.m. to 2 a.m. will accelerate flowering. HID light is preferred, as it increases flower quality and decreases crop time.	Greenhouse , Support: Recommended (day) 65-80°F (18-27°C) (night) 55-60°F (13-16°C) 6-8 plants/ft² (65-86 plants/m²), 13-16 weeks Tunnel , Support: Recommended (day) 65-80°F (18-27°C) (night) 55-60°F (13-16°C) 6-8 plants/ft² (65-86 plants/m²), 13-16 weeks
LISIANTHUS <i>Eustoma grandiflorum</i> Can Can F1 Series	Facultative Long Day During Winter when daylength is shorter than 12 hours, supplemental light (incandescent or HID) can be used. Long-day (greater than 14 hours) or night interruption from 10 p.m. to 2 a.m. will accelerate flowering. HID light is preferred, as it increases flower quality and decreases crop time.	Greenhouse , Support: Recommended (day) 65-85°F (18-29°C) (night) 55-65°F (13-18°C) 6-8 plants/ft² (65-86 plants/m²), 12-16 weeks Tunnel , Support: Recommended (day) 65-85°F (18-29°C) (night) 55-65°F (13-18°C) 6-8 plants/ft² (65-86 plants/m²), 12-16 weeks
LISIANTHUS <i>Eustoma grandiflorum</i> Flare F1 Series	Facultative Long Day During Winter when daylength is shorter than 12 hours, supplemental light (incandescent or HID) can be used. Long-day (greater than 14 hours) or night interruption from 10 p.m. to 2 a.m. will accelerate flowering. HID light is preferred, as it increases flower quality and decreases crop time.	Greenhouse , Support: Recommended (day) 65-80°F (18-27°C) (night) 55-65°F (13-18°C) 6-8 plants/ft² (65-86 plants/m²), 13-16 weeks Tunnel , Support: Required (day) 65-80°F (18-27°C) (night) 55-65°F (13-18°C) 6-8 plants/ft² (65-86 plants/m²), 13-16 weeks
MARIGOLD <i>Tagetes erecta</i> Xochi™ F1 Series	Facultative Short Day Will flower more quickly with shorter stem length when the daylength is 12 hours or less.	Field grown , Support: Not needed (day) 75-90°F (24-32°C) (night) 65-70°F (18-21°C) 8-10 plants/ft² (86-108 plants/m²), 7-9 weeks Tunnel , Support: Not needed 8-10 plants/ft² (86-108 plants/m²), 7-9 weeks
MATRICARIA <i>Tanacetum parthenium</i> Vegmo Series	Obligate Long Day Matricaria has an obligate long day flowering response. Critical daylength is 14 hours. When extending daylength night interruption for 2-4 hours begun at 12:00 a.m., or early AM extension before dawn are effective. Cyclic lighting for 7.5 minutes every half hour can also be used.	Greenhouse , Support: Recommended (day) 60-65°F (16-18°C) (night) 55-60°F (13-16°C) 7-8 plants/ft² (75-86 plants/m²), 10-12 weeks (day) 55-58°F (13-14°C) (night) 50-51°F (10-11°C) 7 plants/ft² (75 plants/m²), 14-16 weeks (day) 72-76°F (22-24°C) (night) 60-74°F (16-23°C) 8 plants/ft² (86 plants/m²), 7-10 weeks
MATTHIOLA <i>Matthiola incana</i> Column Stock Series		Field grown , Support: Not needed (day) 55-65°F (13-18°C) (night) 50-60°F (10-16°C) 20-22 weeks
MATTHIOLA <i>Matthiola incana</i> Katz Hi Double Series		Field grown , Support: Not needed (day) 60-75°F (16-24°C) (night) 45-55°F (7-13°C) 10-12 plants/ft² (108-129 plants/m²), 8-13 weeks Tunnel , Support: Recommended (day) 60-75°F (16-24°C) (night) 45-55°F (7-13°C) 8-10 plants/ft² (86-108 plants/m²), 8-13 weeks

RECOMMENDED PLUG SIZE	STEM LENGTH	KEY TIPS
288	20-36 in. (51-91 cm)	Transplant directly into ground beds approximately 5 weeks after sowing, spacing 30 to 40 plants per sq. m. (approximately 3 to 4 plants per sq. ft.). If main stem is pinched on Amazon dianthus, then space at 1.5 plants per net sq. ft. (approximately 15 plants per net sq. m). A single layer of support netting is recommended. A small percentage (3 to 5%) of early off-types can be observed with Amazon dianthus at 4 to 5 weeks from sowing. These plants should be removed/discarded at transplant.
288	18-36 in. (46-91 cm)	Sweet dianthus can be transplanted year-round in coastal California or similar climates, where mid-August to February 1 transplants will develop the best stem length. Stem length for the Sweet series from transplants April to July may not be of sufficient length for commercial production depending on the environment. Greenhouse-grown plants generally produce taller stems than plants that are field-grown. Harvest stems with at least 3 open flowers. Plants can be harvested continuously for approximately 2 to 3 weeks. If cut back, a second flush of flowers will be ready to harvest in 8 to 10 weeks. Note: A second crop is only advisable from an Autumn harvest, so the second flush develops under the cooler conditions of late Autumn and Winter and builds stronger plants. A single layer of support netting is recommended.
288	36-48 in. (91-122 cm)	
288	24-26 in. (61-66 cm)	To increase productivity, the first blooms of the plants can be removed so that the secondaries will develop strongly.
406	29-45 in. (74-114 cm)	As a general guide, the time from transplant to harvest for the ABC series will be 16 weeks for Seasonality Number 1 varieties grown under short days, to 13 weeks for Seasonality Number 3 varieties grown under long days. Crop time is dependent on time of year, temperature, daylength and light intensity, and also on supplemental lighting and greenhouse conditions.
406	29-45 in. (74-114 cm)	Full-sun plantings of cut flower lisianthus produce shorter stems than greenhouse-grown lisianthus. Can Can is a series of F1 spray-type double-flowering lisianthus. They have a top-flowering habit, producing more flowers on top of each stem within a short flowering window, giving a bouquet effect. Can Can series is Speed Group 3 (Mid/medium speed) for flowering speed. Crop time is dependent on time of year, temperature, daylength and light intensity, and also on supplemental lighting and greenhouse conditions.
406	29-45 in. (74-114 cm)	Full-sun plantings of cut flower lisianthus produce shorter stems than greenhouse-grown lisianthus. Flare is a series of F1 spray-type double-flowering lisianthus. They have a top-flowering habit, producing more flowers on top of each stem within a short flowering window, giving a bouquet effect. Flare series is Speed Group 2 (Mid/medium speed) for flowering speed. Crop time is dependent on time of year, temperature, daylength and light intensity, and also on supplemental lighting and greenhouse conditions.
288	30-36 in. (76-91 cm)	Take care when handling flowers to avoid snapping flower heads off of stems. Marigolds can be stored either wet or dry at 2-5°C (35-38°F). If storing wet, use a commercial floral holding solution.
288	28-36 in. (71-91 cm)	Stem length is affected by daylength, temperature and fertility. High temperatures during induction will result in shorter stems. Matricaria is not sensitive to ethylene.
Direct sow	24-30 in. (61-76 cm)	Column stocks are non-selectable for doubleness. Direct sow seed at 2.2 lbs./acre (1 kg/4,000 m²). Optimum stem length will be achieved during cool growing periods. High heat can stunt plants or prevent flower spikes from developing.
512	32 in. (81 cm)	Crop time is dependent on daylength and light intensity. As a general guide, with daylength of 13 hours or more, the crop time will be 8 weeks from planting. Shorter days will slow the crop time, depending on the temperature, up to 13 weeks from planting. Best performance when grown in tunnels.

CLASS/SERIES	DAYLENGTH	FINISHING PROGRAMS	
MATTHIOLA <i>Matthiola incana</i> Katz Series		Field grown , Support: Not needed (day) 60-75°F (16-24°C) (night) 45-55°F (7-13°C) 10-12 plants/ft² (108-129 plants/m²), 8-13 weeks Tunnel , Support: Recommended (day) 60-75°F (16-24°C) (night) 45-55°F (7-13°C) 8-10 plants/ft² (86-108 plants/m²), 8-13 weeks	
MATTHIOLA <i>Matthiola incana</i> Mathilda™ Series	Bred for specific seasonal performance, the PanAmerican Northern Greenhouse Selectable Matthiola assortment is an outstanding lineup for year-round production. Transplanting for seasons earlier than listed will result in later flowering. Mathilda series is Spring Flowering, Group 2.	Greenhouse , Support: Recommended (day) 60-65°F (16-18°C) (night) 55-60°F (13-16°C) 6-7 plants/ft² (65-75 plants/m²), 9-11 weeks	
PANICUM <i>Panicum capillare</i> Frosted Explosion	Facultative short day. Daylength extension will ensure good stem length when days are shorter than 14 hours.	Field grown , Support: Required (day) 65-75°F (18-24°C) (night) 58-65°F (14-18°C) 2-3 plants/ft² (22-32 plants/m²), 7-9 weeks Greenhouse , Support: Required (day) 60-65°F (16-18°C) (night) 58-60°F (14-16°C) 2-3 plants/ft² (22-32 plants/m²), 8-11 weeks	
SNAPDRAGON <i>Antirrhinum majus</i> Cool F1 Series	Bred for specific seasonal performance, the PanAmerican Snapdragon assortment provides market-leading varieties for year-round production. Transplanting outside of recommended seasons is not recommended. Cool Series is Winter/Early Spring Flowering, Group 1.	Greenhouse , Support: Required (day) 50-55°F (10-13°C) (night) 45-50°F (7-10°C) 8-10 plants/ft² (86-108 plants/m²), 15-18 weeks Tunnel , Support: Required (day) 50-55°F (10-13°C) (night) 45-50°F (7-10°C) 8-10 plants/ft² (86-108 plants/m²), 15-18 weeks	
SNAPDRAGON <i>Antirrhinum majus</i> Early Potomac™ F1 Series	Bred for specific seasonal performance, the PanAmerican Snapdragon assortment provides market-leading varieties for year-round production. Transplanting outside of recommended seasons is not recommended. Early Potomac Series is Group 3,4: Ideal for production during periods of high light, long days and warm temperatures. Can be grown year-round with supplemental high-intensity lighting.	Greenhouse , Support: Required (day) 70-85°F (21-29°C) (night) 55-60°F (13-16°C) 10-12 plants/ft² (108-129 plants/m²), 10-14 weeks Tunnel , Support: Required (day) 70-85°F (21-29°C) (night) 55-60°F (13-16°C) 10-12 plants/ft² (108-129 plants/m²), 10-14 weeks	
SNAPDRAGON <i>Antirrhinum majus</i> Maryland F1 Series	Bred for specific seasonal performance, the PanAmerican Snapdragon assortment provides market-leading varieties for year-round production. Transplanting outside of recommended seasons is not recommended. Maryland Series is Winter/Early Spring Flowering, Group 2.	Greenhouse , Support: Required (day) 55-70°F (13-21°C) (night) 50-55°F (10-13°C) 8-10 plants/ft² (86-108 plants/m²), 12-18 weeks Tunnel , Support: Required (day) 55-70°F (13-21°C) (night) 50-55°F (10-13°C) 8-10 plants/ft² (86-108 plants/m²), 12-18 weeks	
SNAPDRAGON <i>Antirrhinum majus</i> Monaco F1 Series	Bred for specific seasonal performance, the PanAmerican Snapdragon assortment provides market-leading varieties for year-round production. Transplanting outside of recommended seasons is not recommended. Monaco Series is Group 2,3 and well-suited to difficult transition periods, between group 3,4 (Summer) to Group 1,2 (Autumn/Winter). Monaco tolerates warm Autumn conditions without flowering too quickly, and produces high-quality flower spikes when Autumn weather is unusually cool and dark. Performs well all year in areas with moderate temperatures and little daylength fluctuation.	Greenhouse , Support: Required (day) 60-75°F (16-24°C) (night) 50-55°F (10-13°C) 8-10 plants/ft² (86-108 plants/m²), 14-18 weeks Tunnel , Support: Required (day) 60-75°F (16-24°C) (night) 50-55°F (10-13°C) 8-10 plants/ft² (86-108 plants/m²), 14-18 weeks	
SNAPDRAGON <i>Antirrhinum majus</i> Potomac™ F1 Series	Bred for specific seasonal performance, the PanAmerican Snapdragon assortment provides market-leading varieties for year-round production. Transplanting outside of recommended seasons is not recommended. Potomac is Group 3,4: Ideal for production during periods of high light, long days and warm temperatures. Can be grown year-round with supplemental high-intensity lighting.	Greenhouse , Support: Required (day) 75-85°F (24-29°C) (night) 60°F (16°C) 10-12 plants/ft² (108-129 plants/m²), 8-12 weeks Tunnel , Support: Required (day) 75-85°F (24-29°C) (night) 60°F (16°C) 10-12 plants/ft² (108-129 plants/m²), 8-12 weeks	
TRACHELIUM <i>Trachelium caeruleum</i> Lake Series	Obligate Long Day Trachelium needs 16-hour daylength.	Greenhouse , Support: Recommended (day) 60-78°F (16-26°C) (night) 52-68°F (11-20°C) 6 plants/ft² (65 plants/m²), 10-14 weeks	

RECOMMENDED PLUG SIZE	STEM LENGTH	KEY TIPS
512	32 in. (81 cm)	Crop time is dependent on daylength and light intensity. As a general guide, with daylength of 13 hours or more, the crop time will be 8 weeks from planting. Shorter days will slow the crop time, depending on the temperature, up to 13 weeks from planting. Best performance when grown in tunnels. Not recommended for selecting double-flowering plants at cotyledon stage.
288	30-34 in. (76-86 cm)	Double-flowering matthiola may be selected from single-flowering types by exposing seedlings with fully expanded cotyledons to 41°F (5°C) for approximately 3 to 5 days. At this point, seedlings of double-flowering plants will appear a pale green, while singles remain dark green. After removal from cold treatment, double-flowering seedlings will appear yellow and chlorotic within 1 to 2 days, while single-flowering seedlings remain robust and green. This cold treatment may only be done once to selectable matthiola plugs.
288	20-28 in. (51-71 cm)	Needs sufficient light intensity at a minimum of 150W/m². Insufficient light may lead to yellow leaf edges and reduced stem length. Avoid too low RH, as this can also cause yellow leaf edges. Two layers of support netting is advised.
406	39-60 in. (99-152 cm)	Group 1: Night: 45 to 50°F (7 to 10°C), Day: 50 to 55°F (10 to 13°C). 1,000 to 1,500 foot-candles. Two support nets are the minimum, but three are preferred. Mesh sizes of 4 x 4 in. (10 x 10 cm) to 6 x 6 in. (15 x 15 cm) are most commonly used. Place the first level at 4 to 6 in. (10 to 15 cm) above the soil level. Place the second level at 6 in. (15 cm) above the first level. Raise the upper level of the support nets as the stems lengthen.
406	39-60 in. (99-152 cm)	Group 3: Night: 55 to 60°F (13 to 16°C), Day: 60 to 65°F (16 to 18°C). 2,500 to 4,500 foot-candles. Group 4: Night: >60°F (>16°C), Day: >65°F (>18°C). 3,000 to 5,000 foot-candles. Two support nets are the minimum, but three are preferred. Mesh sizes of 4 x 4 in. (10 x 10 cm) to 6 x 6 in. (15 x 15 cm) are most commonly used. Place the first level at 4 to 6 in. (10 to 15 cm) above the soil level. Place the second level at 6 in. (15 cm) above the first level. Raise the upper level of the support nets as the stems lengthen.
406	39-60 in. (99-152 cm)	Group 2: Night: 50 to 55°F (10 to 13°C), Day: 55 to 60°F (13 to 16°C). 1,500 to 3,000 foot-candles. Two support nets are the minimum, but three are preferred. Mesh sizes of 4 x 4 in. (10 x 10 cm) to 6 x 6 in. (15 x 15 cm) are most commonly used. Place the first level at 4 to 6 in. (10 to 15 cm) above the soil level. Place the second level at 6 in. (15 cm) above the first level. Raise the upper level of the support nets as the stems lengthen.
406	39-60 in. (99-152 cm)	Group 2: Night: 50 to 55°F (10 to 13°C), Day: 55 to 60°F (13 to 16°C). 1,500 to 3,000 foot-candles. Group 3: Night: 55 to 60°F (13 to 16°C), Day: 60 to 65°F (16 to 18°C). 2,500 to 4,500 foot-candles. Two support nets are the minimum, but three are preferred. Mesh sizes of 4 x 4 in. (10 x 10 cm) to 6 x 6 in. (15 x 15 cm) are most commonly used. Place the first level at 4 to 6 in. (10 to 15 cm) above the soil level. Place the second level at 6 in. (15 cm) above the first level. Raise the upper level of the support nets as the stems lengthen.
406	39-60 in. (99-152 cm)	Group 4: Night: >60°F (>16°C), Day: >65°F (>18°C). 3,000 to 5,000 foot-candles. Two support nets are the minimum, but three are preferred. Mesh sizes of 4 x 4 in. (10 x 10 cm) to 6 x 6 in. (15 x 15 cm) are most commonly used. Place the first level at 4 to 6 in. (10 to 15 cm) above the soil level. Place the second level at 6 in. (15 cm) above the first level. Raise the upper level of the support nets as the stems lengthen.
288	30-42 in. (76-107 cm)	The greatest potential for year-round production in mild climates. Midseason flowering (transitional Group 3) series for mid-Winter to early-Spring transplants to yield late-Spring to early-Summer flowers. May also be transplanted late Summer to early Autumn for Autumn to early-Winter flowering.



VEGETABLES & HERBS



WAVE	PHOTOPERIODIC LIGHTING CHART P. 4
ANNUALS	PROPAGATION GUIDE P. 8 / FINISHING GUIDE P. 44
PERENNIALS	PROPAGATION GUIDE P. 78 / FINISHING GUIDE P. 90 / FORCING GUIDE P. 108
POTTED PLANTS	PROPAGATION GUIDE P. 114 / FINISHING GUIDE P. 120
CUT FLOWERS	PROPAGATION GUIDE P. 126 / FINISHING GUIDE P. 132

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
CUCUMBER <i>Cucumis sativus</i> GherKing F1	RAW	Direct sow 128	3-4 1-2	1-2 1	Yes	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
CUCUMBER <i>Cucumis sativus</i> Martini F1	RAW	Direct sow 128	3-4 1-2	1-2 1	Yes	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
CUCUMBER <i>Cucumis sativus</i> Patio Snacker F1	RAW	Direct sow 128	3-4 1-2	1-2 1	Yes	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
EGGPLANT <i>Solanum melongena</i> Fairy Tale F1	RAW	288	5-6	1	Light cover	5-8	5.5-5.8 pH 0.5-0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
EGGPLANT <i>Solanum melongena</i> Gretel F1	RAW	288	5-6	1	Light cover	5-8	5.5-5.8 pH 0.5-0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
EGGPLANT <i>Solanum melongena</i> Hansel F1	RAW	288	5-6	1	Light cover	5-8	5.5-5.8 pH 0.5-0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
EGGPLANT <i>Solanum melongena</i> Patio Baby F1	RAW	288	5-6	1	Light cover	5-8	5.5-5.8 pH 0.5-0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
EGGPLANT <i>Solanum melongena</i> Violet Delite F1	RAW	288	5-6	1	Light cover	5-8	5.5-5.8 pH 0.5-0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (BASIL) <i>Ocimum basilicum</i> Dolce Fresca	RAW	288	3-5	6-10	Yes	2-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (BASIL) <i>Ocimum basilicum</i> Everleaf Emerald Towers	RAW	288	4-5	1-3	Yes	2-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (BASIL) <i>Ocimum basilicum</i> Everleaf Genovese	RAW	288	4-5	1-3	Yes	2-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (BASIL) <i>Ocimum basilicum</i> Everleaf Lemon	RAW	288	4-5	1-3	Yes	2-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (f) Less than 100 ppm N (Less than 0.7 EC)	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Best performance when directly sown into final container. Height can be controlled by withholding fertiliser, avoiding overwatering, growing under high light conditions and using DIF when possible.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Best performance when directly sown into final container. Height can be controlled by withholding fertiliser, avoiding overwatering, growing under high light conditions and using DIF when possible.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Best performance when directly sown into final container. Height can be controlled by withholding fertiliser, avoiding overwatering, growing under high light conditions and using DIF when possible.
	(m) Level 3-4 (t) 70-75°F (21-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Height can be controlled by withholding fertiliser, avoiding overwatering, growing under high light conditions and using DIF when possible. If necessary, uniconazole (Sumagic) at a rate of 2.5 to 5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 70-75°F (21-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Height can be controlled by withholding fertiliser, avoiding overwatering, growing under high light conditions and using DIF when possible. If necessary, uniconazole (Sumagic) at a rate of 2.5 to 5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 70-75°F (21-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Height can be controlled by withholding fertiliser, avoiding overwatering, growing under high light conditions and using DIF when possible. If necessary, uniconazole (Sumagic) at a rate of 2.5 to 5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 70-75°F (21-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Height can be controlled by withholding fertiliser, avoiding overwatering, growing under high light conditions and using DIF when possible. If necessary, uniconazole (Sumagic) at a rate of 2.5 to 5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 70-75°F (21-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Height can be controlled by withholding fertiliser, avoiding overwatering, growing under high light conditions and using DIF when possible. If necessary, uniconazole (Sumagic) at a rate of 2.5 to 5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Can be directly sown into final container.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Can be directly sown into final container. Late-flowering Everleaf basil does not benefit from heavy seeding and will fill in with the recommended seeds per plug.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Can be directly sown into final container. Late-flowering Everleaf basil does not benefit from heavy seeding and will fill in with the recommended seeds per plug.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,000 f.c. (10,800-21,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Can be directly sown into final container. Late-flowering Everleaf basil does not benefit from heavy seeding and will fill in with the recommended seeds per plug.

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
HERB (BASIL) <i>Ocimum basilicum</i> Everleaf Thai Towers	RAW	288	4-5	1-3	Yes	2-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (BASIL) <i>Ocimum basilicum</i> Monteverde™ Genovese	RAW	288	3-5	6-10	Yes	2-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (BASIL) <i>Ocimum basilicum</i> Newton	RAW	288	3-5	6-10	Yes	2-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (BASIL) <i>Ocimum basilicum</i> Purple Ruffles	RAW	288	4-5	6-10	Yes	2-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (DILL) <i>Anethum graveolens</i> Fernleaf	RAW	288	4-5	1-3	No	4-7	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (SIMPLYHERBS™) <i>Origanum vulgare</i> Oregano	MPL	128	4-5	1	Yes	5-8	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-70°F (20-21°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (SIMPLYHERBS™) <i>Rosmarinus officinalis</i> Rosemary	PMPL	128	4-5	1	Yes	5-8	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (SIMPLYHERBS™) <i>Thymus vulgaris</i> Thyme	MPL	128	4-5	1	Yes	5-8	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-70°F (20-21°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (SIMPLYHERBS™) <i>Ocimum basilicum</i> Try Basil	PMPL	128	3-4	1	Yes	2-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER <i>Capsicum baccatum</i> Aji Rico F1	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER <i>Capsicum annuum</i> Cajun Belle	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER <i>Capsicum annuum</i> Candy Cane Chocolate Cherry F1	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Can be directly sown into final container. Late-flowering Everleaf basil do not benefit from heavy seeding and will fill in with the recommended seeds per plug.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Can be direct sown into final container.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Can be directly sown into final container.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Can be directly sown into final container.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 500-1,000 f.c. (5,400-10,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 1,000-1,500 f.c. (10,800-16,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 1,500-2,000 f.c. (16,100-21,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Can be directly sown into final container.
	(m) Level 3-4 (t) 62-65°F (17-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Can be directly sown into final container. It is important to keep soil consistently moist until germination occurs so pellet can adequately break down.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 500-1,000 f.c. (5,400-10,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 1,000-1,500 f.c. (10,800-16,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Can be directly sown into final container. It is important to keep soil consistently moist until germination occurs so pellet can adequately break down.
	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Can be directly sown into final container. It is important to keep soil consistently moist until germination occurs so pellet can adequately break down.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Can be directly sown into final container. It is important to keep soil consistently moist until germination occurs so pellet can adequately break down.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 62-67°F (17-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Height can be controlled by withholding fertiliser, avoiding overwatering, growing under high light conditions and using DIF when possible. If necessary, uniconazole-P (Sumagic) at the rate of 2.5 to 5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 62-67°F (17-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Height can be controlled by withholding fertiliser, avoiding overwatering, growing under high light conditions and using DIF when possible. If necessary, uniconazole-P (Sumagic) at the rate of 2.5 to 5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 62-67°F (17-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Height can be controlled by withholding fertiliser, avoiding overwatering, growing under high light conditions and using DIF when possible. If necessary, uniconazole-P (Sumagic) at the rate of 2.5 to 5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
PEPPER <i>Capsicum annuum</i> Candy Cane Red F1	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER <i>Capsicum annuum</i> Golden Cayenne	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER <i>Capsicum annuum</i> KickStart™ F1	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER <i>Capsicum annuum</i> La Bomba II F1	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER <i>Capsicum baccatum</i> Mad Hatter F1	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER <i>Capsicum annuum</i> Peppi F1 Series	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER <i>Capsicum annuum</i> Pot-a-peño F1	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER <i>Capsicum chinense</i> Primero Red F1	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER <i>Capsicum annuum</i> Prism F1	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER <i>Capsicum annuum</i> Snackabelle Red F1	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
PEPPER <i>Capsicum annuum</i> Spotlight F1	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER <i>Capsicum annuum</i> Sweet Heat F1	RAW	288	5-6	1	Light cover	5-7	5.5-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER <i>Capsicum annuum</i> Trailblazer F1	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
SIMPLYSALAD® Alfresco Mixture	MPL	128	2-3	1	Light cover	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-73°F (18-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
SIMPLYSALAD® <i>Eruca sativa</i> Arugula	PMPL	128	2-3	1	Yes	1-2	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
SIMPLYSALAD® City Garden Mixture	MPL	128	2-3	1	Light cover	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-73°F (18-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
SIMPLYSALAD® Global Gourmet Mixture	MPL	128	2-3	1	Light cover	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-73°F (18-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
SIMPLYSALAD® <i>Brassica oleracea</i> Kale Storm Mixture	PMPL	128	2-3	1	Light cover	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-73°F (18-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
SIMPLYSALAD® Summer Picnic Mixture	MPL	128	2-3	1	Light cover	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-73°F (18-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
SIMPLYSALAD® Wonder Wok Mixture	MPL	128	2-3	1	Light cover	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-73°F (18-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
SQUASH <i>Cucurbita moschata</i> Autumn Frost F1	RAW	Direct sow 72	3-4 2-3	1-2 1	Yes	2-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
SQUASH <i>Cucurbita moschata</i> Butterbaby	RAW	Direct sow 72	3-4 2-3	1-2 1	Yes	2-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 62-67°F (17-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Height can be controlled by withholding fertiliser, avoiding overwatering, growing under high light conditions and using DIF when possible. If necessary, uniconazole-P (Sumagic) at the rate of 2.5 to 5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 62-67°F (17-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Height can be controlled by withholding fertiliser, avoiding overwatering, growing under high light conditions and using DIF when possible. Sweet Heat is naturally compact and should not need PGRs.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 62-67°F (17-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Height can be controlled by withholding fertiliser, avoiding overwatering, growing under high light conditions and using DIF when possible. If necessary, uniconazole-P (Sumagic) at the rate of 2.5 to 5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Total crop time can be reduced by 1 week by directly sowing into the final container. It is important to keep soil consistently moist until germination occurs so pellet can adequately break down.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Total crop time can be reduced by 1 week by directly sowing into the final container. It is important to keep soil consistently moist until germination occurs so pellet can adequately break down.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Total crop time can be reduced by 1 week by directly sowing into the final container. It is important to keep soil consistently moist until germination occurs so pellet can adequately break down.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Total crop time can be reduced by 1 week by directly sowing into the final container. SimplySalad® Kale Storm will develop darker colours in cool temperatures.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Total crop time can be reduced by 1 week by directly sowing into the final container.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Total crop time can be reduced by 1 week by directly sowing into the final container.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Best performance when directly sown into final container. Height can be controlled by withholding fertiliser, avoiding overwatering, using DIF when possible and growing under high light conditions.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Best performance when directly sown into final container. Height can be controlled by withholding fertiliser, avoiding overwatering, using DIF when possible and growing under high light conditions.

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
SQUASH <i>Curcubita pepo</i> Green Lightning™ F1	RAW	Direct sow 72	3-4 2-3	1-2 1	Yes	2-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
SQUASH <i>Cucurbita moschata</i> Honeynut	RAW	Direct sow 72	3-4 2-3	1-2 1	Yes	2-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
SQUASH <i>Cucurbita pepo</i> Lemon Sun F1	RAW	Direct sow 72	3-4 2-3	1-2 1	Yes	2-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
STRAWBERRY <i>Fragaria x ananassa</i> Fresca	RAW	288	4-5	1-2	Light cover	7-14	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 3 (t) 68-70°F (20-21°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Artemis F1	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Bellatrix F1	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> BlushingStar F1	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Candyland Red	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Chocolate Sprinkles F1	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> DarkStar F1	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (f) Less than 100 ppm N (Less than 0.7 EC)	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Best performance when directly sown into final container. Height can be controlled by withholding fertiliser, avoiding overwatering, using DIF when possible and growing under high light conditions.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Best performance when directly sown into final container. Height can be controlled by withholding fertiliser, avoiding overwatering, using DIF when possible and growing under high light conditions.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Best performance when directly sown into final container. Height can be controlled by withholding fertiliser, avoiding overwatering, using DIF when possible and growing under high light conditions.
	(m) Level 2-3 (t) 68-72°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Strawberry is susceptible to mildew. Use DIF whenever possible, especially the first 2 hours after sunrise, to control plant height.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Height can be controlled by withholding fertiliser, avoiding overwatering, growing under high light conditions and using DIF when possible. If necessary, uniconazole-P (Sumagic) at a rate of 2.5 to 5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Height can be controlled by withholding fertiliser, avoiding overwatering, growing under high light conditions and using DIF when possible. If necessary, uniconazole-P (Sumagic) at the rate of 2.5 to 5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Height can be controlled by withholding fertiliser, avoiding overwatering, growing under high light conditions and using DIF when possible. If necessary, uniconazole-P (Sumagic) at the rate of 2.5 to 5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Height can be controlled by withholding fertiliser, avoiding overwatering, growing under high light conditions and using DIF when possible. If necessary, uniconazole-P (Sumagic) at the rate of 2.5 to 5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Height can be controlled by withholding fertiliser, avoiding overwatering, growing under high light conditions and using DIF when possible. If necessary, uniconazole-P (Sumagic) at the rate of 2.5 to 5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
TOMATO <i>Solanum lycopersicum</i> Heirloom Marriage™ Big Brandy F1	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Heirloom Marriage™ Cherokee Carbon F1	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Heirloom Marriage™ Genuwine F1	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Helix F1	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Homeslice F1	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Little Bing F1	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Little Napoli F1	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Little Sicily F1	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Loki F1	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Marzito F1	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Micro Tom	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
TOMATO <i>Solanum lycopersicum</i> Midnight Snack F1	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Orange Zinger F1	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Stellar F1	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Sugar Rush F1	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Sun Dipper F1	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Sunrise Sauce F1	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Tidy Treats F1	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Topsy Tom F1	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> WonderStar™ Pink F1	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> WonderStar™ Red F1	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	
CUCUMBER <i>Cucumis sativus</i> GherKing F1	Direct sow 128	(day) 65-70°F (18-21°C) (night) 60-65°F (16-18°C)	5.8-6.2 pH 1.0 mmhos/cm	
CUCUMBER <i>Cucumis sativus</i> Martini F1	Direct sow 128	(day) 65-70°F (18-21°C) (night) 60-65°F (16-18°C)	5.8-6.2 pH 1.0 mmhos/cm	
CUCUMBER <i>Cucumis sativus</i> Patio Snacker F1	Direct sow 128	(day) 65-70°F (18-21°C) (night) 60-65°F (16-18°C)	5.8-6.2 pH 1.0 mmhos/cm	
EGGPLANT <i>Solanum melongena</i> Fairy Tale F1	288	(day) 60-70°F (16-21°C) (night) 55-60°F (13-16°C)	5.5-6.2 pH 1.0 mmhos/cm	
EGGPLANT <i>Solanum melongena</i> Gretel F1	288	(day) 60-70°F (16-21°C) (night) 55-60°F (13-16°C)	5.5-6.2 pH 1.0 mmhos/cm	
EGGPLANT <i>Solanum melongena</i> Hansel F1	288	(day) 60-70°F (16-21°C) (night) 55-60°F (13-16°C)	5.5-6.2 pH 1.0 mmhos/cm	
EGGPLANT <i>Solanum melongena</i> Patio Baby F1	288	(day) 60-70°F (16-21°C) (night) 55-60°F (13-16°C)	5.5-6.2 pH 1.0 mmhos/cm	
EGGPLANT <i>Solanum melongena</i> Violet Delite F1	288	(day) 60-70°F (16-21°C) (night) 55-60°F (13-16°C)	5.5-6.2 pH 1.0 mmhos/cm	
HERB (BASIL) <i>Ocimum basilicum</i> Dolce Fresca	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 1.0 mmhos/cm	
HERB (BASIL) <i>Ocimum basilicum</i> Everleaf Emerald Towers	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 1.0 mmhos/cm	
HERB (BASIL) <i>Ocimum basilicum</i> Everleaf Genovese	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 1.0 mmhos/cm	
HERB (BASIL) <i>Ocimum basilicum</i> Everleaf Lemon	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 1.0 mmhos/cm	
HERB (BASIL) <i>Ocimum basilicum</i> Everleaf Thai Towers	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 1.0 mmhos/cm	
HERB (BASIL) <i>Ocimum basilicum</i> Monteverde™ Genovese	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 1.0 mmhos/cm	
HERB (BASIL) <i>Ocimum basilicum</i> Newton	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 1.0 mmhos/cm	
HERB (BASIL) <i>Ocimum basilicum</i> Purple Ruffles	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 1.0 mmhos/cm	
HERB (DILL) <i>Anethum graveolens</i> Fernleaf	288	(day) 60-65°F (16-18°C) (night) 55-60°F (13-16°C)	5.5-6.2 pH 1.0 mmhos/cm	
HERB (SIMPLYHERBS™) <i>Origanum vulgare</i> Oregano	128	(day) 60-65°F (16-18°C) (night) 50-55°F (10-13°C)	5.5-6.2 pH 1.0 mmhos/cm	
HERB (SIMPLYHERBS™) <i>Rosmarinus officinalis</i> Rosemary	128	(day) 60-65°F (16-18°C) (night) 55-60°F (13-16°C)	5.5-6.2 pH 1.0 mmhos/cm	

	FINISHING PROGRAMS	KEY TIPS
	Cell Pack , 1-2 (ppp), 2-3 (weeks), Spring 4"/4.5"/Quart/10 cm , 1-2 (ppp), 2-3 (weeks), Spring	Direct-sow into final container. Performs best when grown in-ground. Vining plants can be trained up a trellis to save garden space.
	Cell Pack , 1-2 (ppp), 2-3 (weeks), Spring 4"/4.5"/Quart/10 cm , 1-2 (ppp), 2-3 (weeks), Spring	Direct-sow into final container. Performs best when grown in-ground. Vining plants can be trained up a trellis to save garden space.
	Cell Pack , 1-2 (ppp), 2-3 (weeks), Spring 4"/4.5"/Quart/10 cm , 1-2 (ppp), 2-3 (weeks), Spring	Direct-sow into final container. Performs well in-ground and in containers. Vining plants can be trained up a trellis to save garden space.
	Cell Pack , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Performs well in-ground and in containers, with or without support.
	Cell Pack , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Performs well in-ground and in containers, with or without support.
	Cell Pack , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Performs well in-ground and in containers, with or without support.
	Cell Pack , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Performs well in-ground and in containers.
	Cell Pack , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	
	Cell Pack , 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 3-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 4-5 (weeks), Spring	Seed can be directly sown into finish containers.
	Cell Pack , 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 3-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 4-5 (weeks), Spring	Seed can be directly sown into finish containers.
	Cell Pack , 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 3-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-5 (weeks), Spring	Seed can be directly sown into finish containers.
	Cell Pack , 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 3-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 4-5 (weeks), Spring	Seed can be directly sown into finish containers.
	Cell Pack , 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 3-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-5 (weeks), Spring	Seed can be directly sown into finish containers.
	Cell Pack , 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 3-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 4-5 (weeks), Spring	Seed can be directly sown into finish containers.
	Cell Pack , 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 3-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 4-5 (weeks), Spring	Seed can be directly sown into finish containers.
	Cell Pack , 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 3-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 4-5 (weeks), Spring	Seed can be directly sown into finish containers.
	Cell Pack , 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring	Can be directly sown into final container.
	Cell Pack , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring	Can be directly sown into final container.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	
HERB (SIMPLYHERBS™) <i>Thymus vulgaris</i> Thyme	128	(day) 65-70°F (18-21°C) (night) 55-60°F (13-16°C)	5.5-6.2 pH 1.0 mmhos/cm	
HERB (SIMPLYHERBS™) <i>Ocimum basilicum</i> Try Basil	128	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 1.0 mmhos/cm	
PEPPER <i>Capsicum baccatum</i> Aji Rico F1	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.0 mmhos/cm	
PEPPER <i>Capsicum annuum</i> Cajun Belle	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.0 mmhos/cm	
PEPPER <i>Capsicum annuum</i> Candy Cane Chocolate Cherry F1	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.0 mmhos/cm	
PEPPER <i>Capsicum annuum</i> Candy Cane Red F1	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.0 mmhos/cm	
PEPPER <i>Capsicum annuum</i> Golden Cayenne	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.0 mmhos/cm	
PEPPER <i>Capsicum annuum</i> KickStart™ F1	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.0 mmhos/cm	
PEPPER <i>Capsicum annuum</i> La Bomba II F1	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.0 mmhos/cm	
PEPPER <i>Capsicum baccatum</i> Mad Hatter F1	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.0 mmhos/cm	
PEPPER <i>Capsicum annuum</i> Peppi F1 Series	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
PEPPER <i>Capsicum annuum</i> Pot-a-peño F1	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.0 mmhos/cm	
PEPPER <i>Capsicum chinense</i> Primero Red F1	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.0 mmhos/cm	
PEPPER <i>Capsicum annuum</i> Prism F1	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.0 mmhos/cm	
PEPPER <i>Capsicum annuum</i> Snackabelle Red F1	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.0 mmhos/cm	
PEPPER <i>Capsicum annuum</i> Spotlight F1	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.0 mmhos/cm	
PEPPER <i>Capsicum annuum</i> Sweet Heat F1	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.0 mmhos/cm	
PEPPER <i>Capsicum annuum</i> Trailblazer F1	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.0 mmhos/cm	
SIMPLYSALAD® Alfresco Mixture	128	(day) 62-70°F (17-21°C) (night) 56-61°F (13-16°C)	5.8-6.2 pH 0.75 mmhos/cm	

FINISHING PROGRAMS	KEY TIPS
Cell Pack , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring	Can be directly sown into final container.
Cell Pack , 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 3-4 (weeks), Spring	Can be directly sown into final container.
Cell Pack , 1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Large plant habit. Performs best when grown in-ground and with support.
Cell Pack , 1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Performs well in-ground or in a small container, with or without support.
Cell Pack , 0-1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 0-1 (ppp), 4-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 0-1 (ppp), 5-7 (weeks), Spring	Performs well in-ground or in a medium container, with support.
Cell Pack , 1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Performs well in-ground or in a medium container, with or without support.
Cell Pack , 1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Performs well in-ground or in a medium container, with or without support.
Cell Pack , 1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Performs well in-ground or in a large container, with support.
Cell Pack , 1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Performs well in-ground or in a container, with or without support.
Cell Pack , 1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Large habit. Performs best when grown in-ground and with support.
4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring Field grown , 1 (ppp), 11-12 (weeks), Spring	Large habit. Performs best when grown in-ground and with support.
Cell Pack , 1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm , 1-3 (ppp), 8-10 (weeks), Spring	Performs well in-ground or in a medium container, with or without support. For hanging basket production, grow dry and provide high light, ideally outdoors.
Cell Pack , 1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Large habit. Performs best when grown in-ground and with support.
Cell Pack , 1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Performs well in-ground or in a large container, with support.
Cell Pack , 1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Performs well in-ground or in a medium container, with or without support.
Cell Pack , 1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Performs well in-ground or in a large container, with support.
Cell Pack , 1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Performs very well in containers.
Cell Pack , 1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Performs well in-ground or in a large container, with support.
4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 8"/2 Gallon/20 cm , 3-4 (ppp), 2-4 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm , 4-5 (ppp), 4-6 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 5-6 (ppp), 4-6 (weeks), Spring	Can be directly sown into final container. To achieve faster production with good foliage colour, SimplySalad can be grown at moderate to warm temperatures (55 to 70°F/13 to 21°C), and then finished at 45 to 55°F (7 to 13°C) for 3 to 5 days. Coloured varieties develop pigment very quickly at cooler temperatures.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	
SIMPLYSALAD® <i>Eruca sativa</i> Arugula	128	(day) 62-70°F (17-21°C) (night) 56-61°F (13-16°C)	5.8-6.2 pH 0.75 mmhos/cm	
SIMPLYSALAD® City Garden Mixture	128	(day) 62-70°F (17-21°C) (night) 56-61°F (13-16°C)	5.8-6.2 pH 0.75 mmhos/cm	
SIMPLYSALAD® Global Gourmet Mixture	128	(day) 62-70°F (17-21°C) (night) 56-61°F (13-16°C)	5.8-6.2 pH 0.75 mmhos/cm	
SIMPLYSALAD® <i>Brassica oleracea</i> Kale Storm Mixture	128	(day) 62-70°F (17-21°C) (night) 56-61°F (13-16°C)	5.8-6.2 pH 0.75 mmhos/cm	
SIMPLYSALAD® Summer Picnic Mixture	128	(day) 62-70°F (17-21°C) (night) 56-61°F (13-16°C)	5.8-6.2 pH 0.75 mmhos/cm	
SIMPLYSALAD® Wonder Wok Mixture	128	(day) 62-70°F (17-21°C) (night) 56-61°F (13-16°C)	5.8-6.2 pH 0.75 mmhos/cm	
SQUASH <i>Cucurbita moschata</i> Autumn Frost F1	Direct sow 72	(day) 68-72°F (20-22°C) (night) 60-65°F (16-18°C)	5.8-6.2 pH 0.75-1.0 mmhos/cm	
SQUASH <i>Cucurbita moschata</i> Butterbaby	Direct sow 72	(day) 68-72°F (20-22°C) (night) 60-65°F (16-18°C)	5.8-6.2 pH 0.75-1.0 mmhos/cm	
SQUASH <i>Cucurbita pepo</i> Green Lightning™ F1	Direct sow 72	(day) 68-72°F (20-22°C) (night) 60-65°F (16-18°C)	5.8-6.2 pH 0.75-1.0 mmhos/cm	
SQUASH <i>Cucurbita moschata</i> Honeynut	Direct sow 72	(day) 68-72°F (20-22°C) (night) 60-65°F (16-18°C)	5.8-6.2 pH 0.75-1.0 mmhos/cm	
SQUASH <i>Cucurbita pepo</i> Lemon Sun F1	Direct sow 72	(day) 68-72°F (20-22°C) (night) 60-65°F (16-18°C)	5.8-6.2 pH 0.75-1.0 mmhos/cm	
STRAWBERRY <i>Fragaria x ananassa</i> Fresca	288	(day) 60-65°F (16-18°C) (night) 60-62°F (16-17°C)	6.5-7.5 pH 1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Artemis F1	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Bellatrix F1	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> BlushingStar F1	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Candyland Red	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Chocolate Sprinkles F1	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> DarkStar F1	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	

FINISHING PROGRAMS	KEY TIPS
4"/4.5"/Quart/10 cm , 1 (ppp), 2-3 (weeks), Spring 8"/2 Gallon/20 cm , 3-4 (ppp), 2-4 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm , 4-5 (ppp), 4-6 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 5-6 (ppp), 4-6 (weeks), Spring	Can be directly sown into final container. 30 to 45 days from transplant to harvest.
4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 8"/2 Gallon/20 cm , 3-4 (ppp), 2-4 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm , 4-5 (ppp), 4-6 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 5-6 (ppp), 4-6 (weeks), Spring	Can be directly sown into final container. To achieve faster production with good foliage colour, SimplySalad can be grown at moderate to warm temperatures (55 to 70°F/13 to 21°C), and then finished at 45 to 55°F (7 to 13°C) for 3 to 5 days. Coloured varieties develop pigment very quickly at cooler temperatures.
4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 8"/2 Gallon/20 cm , 3-4 (ppp), 2-4 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm , 4-5 (ppp), 4-6 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 5-6 (ppp), 4-6 (weeks), Spring	Can be directly sown into final container. To achieve faster production with good foliage colour, SimplySalad can be grown at moderate to warm temperatures (55 to 70°F/13 to 21°C), and then finished at 45 to 55°F (7 to 13°C) for 3 to 5 days. Coloured varieties develop pigment very quickly at cooler temperatures.
4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 8"/2 Gallon/20 cm , 3-4 (ppp), 2-4 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm , 4-5 (ppp), 4-6 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 5-6 (ppp), 4-6 (weeks), Spring	Can be directly sown into final container. To achieve faster production with good foliage colour, SimplySalad can be grown at moderate to warm temperatures (55 to 70°F/13 to 21°C), and then finished at 45 to 55°F (7 to 13°C) for 3 to 5 days. Coloured varieties develop pigment very quickly at cooler temperatures. Can be grown in-ground after transplant stage.
4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 8"/2 Gallon/20 cm , 3-4 (ppp), 2-4 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm , 4-5 (ppp), 4-6 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 5-6 (ppp), 4-6 (weeks), Spring	Can be directly sown into final container. To achieve faster production with good foliage colour, SimplySalad can be grown at moderate to warm temperatures (55 to 70°F/13 to 21°C), and then finished at 45 to 55°F (7 to 13°C) for 3 to 5 days. Coloured varieties develop pigment very quickly at cooler temperatures.
4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 8"/2 Gallon/20 cm , 3-4 (ppp), 2-4 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm , 4-5 (ppp), 4-6 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 5-6 (ppp), 4-6 (weeks), Spring	Can be directly sown into final container. To achieve faster production with good foliage colour, SimplySalad can be grown at moderate to warm temperatures (55 to 70°F/13 to 21°C), and then finished at 45 to 55°F (7 to 13°C) for 3 to 5 days. Coloured varieties develop pigment very quickly at cooler temperatures.
Cell Pack , 1-2 (ppp), 2-3 (weeks), Spring 4"/4.5"/Quart/10 cm , 1-2 (ppp), 2-3 (weeks), Spring Field grown , 1-2 (ppp), 14-15 (weeks), Spring	Direct-sow into final container. Performs best when grown in-ground.
Cell Pack , 1-2 (ppp), 2-3 (weeks), Spring 4"/4.5"/Quart/10 cm , 1-2 (ppp), 2-3 (weeks), Spring Field grown , 1 (ppp), 14-15 (weeks), Spring	Direct-sow into final container. Performs best when grown in-ground. Vining plants can be trained up a trellis to save garden space.
Cell Pack , 1-2 (ppp), 2-3 (weeks), Spring 4"/4.5"/Quart/10 cm , 1-2 (ppp), 2-3 (weeks), Spring Field grown , 1 (ppp), 6-7 (weeks), Spring	Direct-sow into final container. Performs best when grown in-ground.
Cell Pack , 1-2 (ppp), 2-3 (weeks), Spring 4"/4.5"/Quart/10 cm , 1-2 (ppp), 2-3 (weeks), Spring Field grown , 1 (ppp), 15-16 (weeks), Spring	Direct-sow into final container. Performs best when grown in-ground. Vining plants can be trained up a trellis to save garden space.
Cell Pack , 1-2 (ppp), 2-3 (weeks), Spring 4"/4.5"/Quart/10 cm , 1-2 (ppp), 2-3 (weeks), Spring Field grown , 1 (ppp), 6-7 (weeks), Spring	Direct-sow into final container. Performs best when grown in-ground.
Cell Pack , 1 (ppp), 6-8 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 8-10 (weeks), Spring 8"/2 Gallon/20 cm , 3-4 (ppp), 10-12 (weeks), Spring	Susceptible to mildew.
Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring Field grown , 1 (ppp), 7-8 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Determinate variety. Performs best when grown in-ground and with support.
Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	
TOMATO <i>Solanum lycopersicum</i> Heirloom Marriage™ Big Brandy F1	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Heirloom Marriage™ Cherokee Carbon F1	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Heirloom Marriage™ Genuwine F1	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Helix F1	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Homeslice F1	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Little Bing F1	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Little Napoli F1	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Little Sicily F1	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Loki F1	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Marzito F1	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Micro Tom	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Midnight Snack F1	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Orange Zinger F1	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Stellar F1	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Sugar Rush F1	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Sun Dipper F1	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Sunrise Sauce F1	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	

FINISHING PROGRAMS	KEY TIPS
Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring Field grown , 1 (ppp), 7-8 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Determinate variety. Performs well in a patio planter or in-ground. Best grown with support.
Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 1 (ppp), 6-8 (weeks), Late Spring	Compact, determinate variety. Excellent performance in a patio planter, with or without support.
Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 1 (ppp), 6-8 (weeks), Late Spring	Compact, determinate variety. Excellent performance in a patio planter, with or without support.
Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 1 (ppp), 6-8 (weeks), Late Spring	Compact, determinate variety. Excellent performance in a patio planter, with or without support.
Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
4"/4.5"/Quart/10 cm , 1 (ppp), 12 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 12 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 10 (weeks), Summer 5"/6"/1 Gallon/15 cm , 1 (ppp), 10 (weeks), Summer	Plant plugs deeply. Water from below to keep surface of media dry. It is especially important to grow plants dry until flowering. To optimise plant growth, space as soon as the plants touch. Keep the plants very dry from spacing to flowering to avoid stretch. Due to the weight of the fruit, we recommend staking plants to stabilise plants during shipment.
Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Determinate variety. Performs best when grown in-ground and with support.
Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Determinate variety. Performs best when grown in-ground and with support.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	
TOMATO <i>Solanum lycopersicum</i> Tidy Treats F1	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Topsy Tom F1	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> WonderStar™ Pink F1	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> WonderStar™ Red F1	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	

	FINISHING PROGRAMS	KEY TIPS
	Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring 14" Pot or HB/7 Gallon/36 cm , 1 (ppp), 6-8 (weeks), Late Spring	Compact, indeterminate variety. Performs well in a patio planter or in-ground and with support.
	Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 1 (ppp), 6-8 (weeks), Late Spring	Superior variety for hanging baskets and patio planters. Performs well when grown upside-down.
	Cell Pack , 1 (ppp), 2-3 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Determinate variety. Performs well in-ground. Best grown with support.
	Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Determinate variety. Performs well in-ground. Best grown with support.

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
CUCUMBER (EDIBLE POTTED) <i>Cucumis sativus</i> Quick Snack F1	RAW	Direct sow 128	3-4 1-2	1-2 1	Yes	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (BASIL) <i>Ocimum basilicum</i> Bonsai	RAW	288	3-5	6-10	Yes	2-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Cosmo	RAW	288	3-4	1	Light cover	5-6	5.4-5.8 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 70-73°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Fresh Bites Series	RAW	288	3-4	1	Light cover	4-5	5.4-5.8 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 70-73°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Hot Burrito	RAW	288	3-4	1	Light cover	5-6	5.4-5.8 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 70-73°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Hot Fajita	RAW	288	3-4	1	Light cover	5-6	5.4-5.8 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 70-73°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Hot Lemon Zest	RAW	288	3-4	1	Light cover	5-6	5.4-5.8 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 70-73°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Best performance when directly sown into final container. Height can be controlled by withholding fertiliser, avoiding overwatering, growing under high light conditions and using DIF when possible.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Can be directly sown into final container.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	To ensure a uniform crop, growth regulator should be applied with a fine mist 10 to 12 days after sowing. An application of uniconazole-P 2.5 ppm will help control plant size. To bench germ: Make sure trays are watered before covering. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 8 to 10 days. Keep reemay wet. Remove reemay after another 2 to 3 days.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	To ensure a uniform crop, growth regulator should be applied with a fine mist. For more vigorous varieties, an application of uniconazole-P 2.5 ppm at 10 to 12 days after sowing, repeated 2 weeks later if needed, will help control plant size. To bench germ: Make sure trays are watered before covering. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 8 to 10 days. Keep reemay wet. Remove reemay after another 2 to 3 days.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	To ensure a uniform crop, growth regulator should be applied with a fine mist. For more vigorous varieties, an application of uniconazole-P 2.5 ppm at 10 to 12 days after sowing, repeated 2 weeks later if needed, will help control plant size. To bench germ: Make sure trays are watered before covering. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 8 to 10 days. Keep reemay wet. Remove reemay after another 2 to 3 days.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	To ensure a uniform crop, growth regulator should be applied with a fine mist. For more vigorous varieties, an application of uniconazole-P 2.5 ppm at 10 to 12 days after sowing, repeated 2 weeks later if needed, will help control plant size. To bench germ: Make sure trays are watered before covering. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 8 to 10 days. Keep reemay wet. Remove reemay after another 2 to 3 days.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	To ensure a uniform crop, growth regulator should be applied with a fine mist. For more vigorous varieties, an application of uniconazole-P 2.5 ppm at 10 to 12 days after sowing, repeated 2 weeks later if needed, will help control plant size. To bench germ: Make sure trays are watered before covering. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 8 to 10 days. Keep reemay wet. Remove reemay after another 2 to 3 days.

(m) moisture (t) temperature (l) light (f) fertiliser (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Tamale	RAW	288	3-4	1	Light cover	5-6	5.4-5.8 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 70-73°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Taquito	RAW	288	3-4	1	Light cover	5-6	5.4-5.8 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 70-73°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO (EDIBLE POTTED) <i>Solanum lycopersicum</i> Cocoa F1	RAW	288	2-3	1	Light cover	2-3	5.5-5.8 pH 0.5-0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO (EDIBLE POTTED) <i>Solanum lycopersicum</i> Red Velvet F1	RAW	288	2-3	1	Light cover	2-3	5.5-5.8 pH 0.5-0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO (EDIBLE POTTED) <i>Solanum lycopersicum</i> Siam F1	RAW	288	2-3	1	Light cover	2-3	5.5-5.8 pH 0.5-0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	To ensure a uniform crop, growth regulator should be applied with a fine mist. For more vigorous varieties, an application of uniconazole-P 2.5 ppm at 10 to 12 days after sowing, repeated 2 weeks later if needed, will help control plant size. To bench germ: Make sure trays are watered before covering. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 8 to 10 days. Keep reemay wet. Remove reemay after another 2 to 3 days.
	(m) Level 3-4 (t) 68-72°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	Although Taquito is a naturally compact variety, plugs will be stronger if growth regulator is used. To bench germ: Make sure trays are watered before covering. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 8 to 10 days. Keep reemay wet. Remove reemay after another 2 to 3 days.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Height can be controlled by avoiding overwatering, growing under high light conditions and using DIF when possible. Cocoa is naturally compact and should not need PGRs.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Height can be controlled by avoiding overwatering, growing under high light conditions and using DIF when possible. Red Velvet is naturally compact and should not need PGRs.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Height can be controlled by avoiding overwatering, growing under high light conditions and using DIF when possible. Siam is naturally compact and should not need PGRs.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	
CUCUMBER (EDIBLE POTTED) <i>Cucumis sativus</i> Quick Snack F1	Direct sow 128	(day) 65-70°F (18-21°C) (night) 60-65°F (16-18°C)	5.8-6.2 pH 1.0 mmhos/cm	
HERB (BASIL) <i>Ocimum basilicum</i> Bonsai	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 1.0 mmhos/cm	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Cosmo	288	(day) 68-80°F (20-27°C) (night) 66-70°F (19-21°C)	5.5-5.9 pH 1.8-2.5 mmhos/cm	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Fresh Bites Series	288	(day) 68-80°F (20-27°C) (night) 66-70°F (19-21°C)	5.5-5.9 pH 1.8-2.5 mmhos/cm	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Hot Burrito	288	(day) 68-80°F (20-27°C) (night) 66-70°F (19-21°C)	5.5-5.9 pH 1.8-2.5 mmhos/cm	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Hot Fajita	288	(day) 68-80°F (20-27°C) (night) 66-70°F (19-21°C)	5.5-5.9 pH 1.8-2.5 mmhos/cm	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Hot Lemon Zest	288	(day) 68-80°F (20-27°C) (night) 66-70°F (19-21°C)	5.5-5.9 pH 1.8-2.5 mmhos/cm	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Tamale	288	(day) 68-80°F (20-27°C) (night) 66-70°F (19-21°C)	5.5-5.9 pH 1.8-2.5 mmhos/cm	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Taquito	288	(day) 68-80°F (20-27°C) (night) 66-70°F (19-21°C)	5.5-5.9 pH 1.8-2.5 mmhos/cm	
TOMATO (EDIBLE POTTED) <i>Solanum lycopersicum</i> Cocoa F1	288	(day) 68-80°F (20-27°C) (night) 68-70°F (20-21°C)	5.5-5.9 pH 1.8-2.25 mmhos/cm	
TOMATO (EDIBLE POTTED) <i>Solanum lycopersicum</i> Red Velvet F1	288	(day) 68-80°F (20-27°C) (night) 68-70°F (20-21°C)	5.5-5.9 pH 1.8-2.25 mmhos/cm	
TOMATO (EDIBLE POTTED) <i>Solanum lycopersicum</i> Siam F1	288	(day) 68-80°F (20-27°C) (night) 68-70°F (20-21°C)	5.5-5.9 pH 1.8-2.25 mmhos/cm	

FINISHING PROGRAMS	KEY TIPS
Cell Pack , 1-2 (ppp), 2-3 (weeks), Spring 4"/4.5"/Quart/10 cm , 1-2 (ppp), 2-3 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 4-5 (weeks), Spring	For 6-in./15-cm production for sale with fruit on, direct-sow into final container. Vining plants can be trained up a 12 to 16-in./30 to 41-cm trellis to save garden space. Pinch at top of the trellis to promote fruiting. For cell packs and 4-in./10-cm production, sell as a young plant to be transplanted in the ground or in patio pots. Best performance is in patio pots.
4"/4.5"/Quart/10 cm , 1 (ppp), 3-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 4-5 (weeks), Spring	Seeds can be directly sown into finish containers.
5"/6"/1 Gallon/15 cm , 1 (ppp), 16 (weeks), Spring 8"/2 Gallon/20 cm , 1 (ppp), 16 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 14 (weeks), Summer 8"/2 Gallon/20 cm , 1 (ppp), 14 (weeks), Summer	Plant plugs deeply. Water from below to keep surface of media dry. It is especially important to grow plants dry until flowering, allowing some wilt between watering. To optimise plant growth, space as soon as the plants touch. Keep the plants very dry from spacing to flowering to avoid stretch. Due to the weight of the fruit, we recommend staking plants to stabilise plants during shipment.
5"/6"/1 Gallon/15 cm , 1 (ppp), 15 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 13 (weeks), Summer	Plant plugs deeply. Water from below to keep surface of media dry. It is especially important to grow plants dry until flowering, allowing some wilt between watering. To optimise plant growth, space as soon as the plants touch. Keep the plants very dry from spacing to flowering to avoid stretch. Due to the weight of the fruit, we recommend staking plants to stabilise plants during shipment.
5"/6"/1 Gallon/15 cm , 1 (ppp), 14 (weeks), Spring 8"/2 Gallon/20 cm , 1 (ppp), 14 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 12 (weeks), Summer 8"/2 Gallon/20 cm , 1 (ppp), 12 (weeks), Summer	Plant plugs deeply. Water from below to keep surface of media dry. It is especially important to grow plants dry until flowering, allowing some wilt between watering. To optimise plant growth, space as soon as the plants touch. Keep the plants very dry from spacing to flowering to avoid stretch. Due to the weight of the fruit, we recommend staking plants to stabilise plants during shipment.
5"/6"/1 Gallon/15 cm , 1 (ppp), 14 (weeks), Spring 8"/2 Gallon/20 cm , 1 (ppp), 14 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 12 (weeks), Summer 8"/2 Gallon/20 cm , 1 (ppp), 12 (weeks), Summer	Plant plugs deeply. Water from below to keep surface of media dry. It is especially important to grow plants dry until flowering, allowing some wilt between watering. To optimise plant growth, space as soon as the plants touch. Keep the plants very dry from spacing to flowering to avoid stretch. Due to the weight of the fruit, we recommend staking plants to stabilise plants during shipment.
5"/6"/1 Gallon/15 cm , 1 (ppp), 15 (weeks), Spring 8"/2 Gallon/20 cm , 1 (ppp), 15 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 13 (weeks), Summer 8"/2 Gallon/20 cm , 1 (ppp), 13 (weeks), Summer	Plant plugs deeply. Water from below to keep surface of media dry. It is especially important to grow plants dry until flowering, allowing some wilt between watering. To optimise plant growth, space as soon as the plants touch. Keep the plants very dry from spacing to flowering to avoid stretch. Due to the weight of the fruit, we recommend staking plants to stabilise plants during shipment.
4"/4.5"/Quart/10 cm , 1 (ppp), 14 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 14 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 12 (weeks), Summer 5"/6"/1 Gallon/15 cm , 1 (ppp), 12 (weeks), Summer	Plant plugs deeply. Water from below to keep surface of media dry. It is especially important to grow plants dry until flowering, allowing some wilt between watering. To optimise plant growth, space as soon as the plants touch. Keep the plants very dry from spacing to flowering to avoid stretch. Due to the weight of the fruit, we recommend staking plants to stabilise plants during shipment.
3"/8 cm , 1 (ppp), 15 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 15 (weeks), Spring 3"/8 cm , 1 (ppp), 13 (weeks), Summer 4"/4.5"/Quart/10 cm , 1 (ppp), 13 (weeks), Summer	Plant plugs deeply. Water from below to keep surface of media dry. It is especially important to grow plants dry until flowering, allowing some wilt between watering. To optimise plant growth, space as soon as the plants touch. Keep the plants very dry from spacing to flowering to avoid stretch.
4"/4.5"/Quart/10 cm , 1 (ppp), 12 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 12 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 10 (weeks), Summer 5"/6"/1 Gallon/15 cm , 1 (ppp), 10 (weeks), Summer	Plant plugs deeply. Water from below to keep surface of media dry. It is especially important to grow plants dry until flowering. To optimise plant growth, space as soon as the plants touch. Keep the plants very dry from spacing to flowering to avoid stretch. Due to the weight of the fruit, we recommend staking plants to stabilise plants during shipment.
4"/4.5"/Quart/10 cm , 1 (ppp), 12 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 12 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 10 (weeks), Summer 5"/6"/1 Gallon/15 cm , 1 (ppp), 10 (weeks), Summer	Plant plugs deeply. Water from below to keep surface of media dry. It is especially important to grow plants dry until flowering. To optimise plant growth, space as soon as the plants touch. Keep the plants very dry from spacing to flowering to avoid stretch. Due to the weight of the fruit, we recommend staking plants to stabilise plants during shipment.
5"/6"/1 Gallon/15 cm , 1 (ppp), 12 (weeks), Spring 8"/2 Gallon/20 cm , 1 (ppp), 12 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 10 (weeks), Summer 8"/2 Gallon/20 cm , 1 (ppp), 10 (weeks), Summer	Plant plugs deeply. Water from below to keep surface of media dry. It is especially important to grow plants dry until flowering. To optimise plant growth, space as soon as the plants touch. Keep the plants very dry from spacing to flowering to avoid stretch. Due to the weight of the fruit, we recommend staking plants to stabilise plants during shipment.

U.S. UTILITY PATENTS

US 10,212,908

Vinca Titan™ Apricot
 Vinca Titan™ Cranberry
 Vinca Titan™ Dark Red
 Vinca Titan™ Icy Pink
 Vinca Titan™ Punch
 Vinca Titan™ Really Red
 Vinca Titan™ Rose
 Vinca Titan-ium™ Apricot
 Vinca Titan-ium™ Blush
 Vinca Titan-ium™ Dark Red
 Vinca Titan-ium™ Punch
 Vinca Titan-ium™ Really Red
 Vinca Titan-ium™ White
 Vinca Titan-ium™ Mixture

US 10,285,362

Impatiens Beacon® Blue Pearl
 Impatiens Beacon® Bright Red
 Impatiens Beacon® Coral
 Impatiens Beacon® Light Pink
 Impatiens Beacon® Lipstick
 Impatiens Beacon® Orange Improved
 Impatiens Beacon® Pink
 Impatiens Beacon® Rose
 Impatiens Beacon® Salmon
 Impatiens Beacon® Violet Improved
 Impatiens Beacon® White
 Impatiens Beacon® Cape Pine Mixture
 Impatiens Beacon® Chicago Mixture Improved
 Impatiens Beacon® Formula Mixture Improved
 Impatiens Beacon® Lindau Mixture Improved
 Impatiens Beacon® Otway Mixture
 Impatiens Beacon® Pearl Island Mixture
 Impatiens Beacon® Portland Mixture Improved
 Impatiens Beacon® Sanibel Mixture Improved

US 10,631,515

Pentas Glitterati™ Purple Star
 Pentas Glitterati™ Red Star

US 10,750,692

French Marigold Fireball
 French Marigold Strawberry Blonde

US 11,166,424

Impatiens Beacon® Blue Pearl
 Impatiens Beacon® Bright Red
 Impatiens Beacon® Coral
 Impatiens Beacon® Light Pink
 Impatiens Beacon® Lipstick
 Impatiens Beacon® Orange Improved
 Impatiens Beacon® Pink
 Impatiens Beacon® Rose
 Impatiens Beacon® Salmon
 Impatiens Beacon® Violet Improved
 Impatiens Beacon® White
 Impatiens Beacon® Cape Pine Mixture
 Impatiens Beacon® Chicago Mixture Improved
 Impatiens Beacon® Formula Mixture Improved
 Impatiens Beacon® Lindau Mixture Improved
 Impatiens Beacon® Otway Mixture
 Impatiens Beacon® Pearl Island Mixture
 Impatiens Beacon® Portland Mixture Improved
 Impatiens Beacon® Sanibel Mixture Improved

US 11,559,016

Vinca Valiant™ Magenta

US 11,684,031

Vinca Valiant™ Apricot
 Vinca Valiant™ Mixture

US 7,642,436

Petunia Sophistica® Antique Shades
 Petunia Sophistica® Blackberry
 Petunia Sophistica® Lime Bicolor
 Petunia Sophistica® Lime Green
 Spreading Petunia Easy Wave® Berry Velour
 Spreading Petunia Easy Wave® Burgundy Velour
 Spreading Petunia Easy Wave® Navy Velour
 Spreading Petunia Easy Wave® Red Velour
 Spreading Petunia Tidal Wave® Red Velour
 Spreading Petunia Wave® Carmine Velour

US 7,915,504

Alyssum Clear Crystal® Lavender Shades
 Alyssum Clear Crystal® Purple Shades
 Alyssum Clear Crystal® White
 Alyssum Clear Crystal® Mixture

US 7,982,110

Echinacea Artisan™ Collection Red Ombre
 Echinacea Artisan™ Collection Soft Orange
 Echinacea Artisan™ Collection Yellow Ombre
 Echinacea Cheyenne Spirit
 Echinacea PowWow® Wild Berry

US 9,301,465

Ornamental Pepper Hot Pops Purple

US 9,307,712

Ornamental Pepper Hot Pops Yellow

US 9,320,212

French Marigold Hot Pak™ Gold
 French Marigold Hot Pak™ Mixture

US 9,326,464

French Marigold Hot Pak™ Harmony
 French Marigold Hot Pak™ Mixture

US 9,326,465

French Marigold Hot Pak™ Yellow
 French Marigold Hot Pak™ Mixture

US 9,326,466

French Marigold Hot Pak™ Spry
 French Marigold Hot Pak™ Mixture

US 9,326,467

French Marigold Hot Pak™ Orange
 French Marigold Hot Pak™ Mixture

US 9,326,468

French Marigold Hot Pak™ Flame
 French Marigold Hot Pak™ Mixture

US 9,451,748

Vinca Valiant™ Burgundy
 Vinca Valiant™ Mixture

US 9,451,749

Vinca Valiant™ Mixture

US 9,451,750

Vinca Valiant™ Orchid

US 9,451,751

Vinca Valiant™ Punch
 Vinca Valiant™ Mixture

US 9,451,752

Vinca Valiant™ Lilac
 Vinca Valiant™ Mixture

U.S. UTILITY PATENTS APPLIED FOR

Basil Monteverde™ Genovese

U.S. PLANT VARIETY PROTECTIONS

Coleus, Premium Shade Kong® Red - 200500015
 Coleus, Premium Shade Kong® Rose - 200500017
 Coleus, Premium Shade Kong®
 Salmon Pink - 200900035
 Coreopsis SunKiss - 201700014
 Cuphea Pink Shimmer - 201800290
 French Marigold Bonanza™ Bolero - 201800074
 French Marigold Bonanza™
 Deep Orange - 201800517
 French Marigold Flamenco - 202000034
 Matthiola Katz Ruby - 201200438
 Myosotis Mon Amie Blue - 200800070
 Ornamental Oregano Kirigami - 201800057
 Ornamental Pepper Black Pearl - 200500020
 Salvia interspecific Big Blue - 201700218
 Vinca Mediterranean XP Dark Red - 200900043
 Vinca Mediterranean XP Hot Rose - 200900084
 Vinca Mediterranean XP Peach - 200900080
 Vinca Mediterranean XP Red - 200900081
 Vinca Mediterranean XP Strawberry - 200900083
 Vinca Mediterranean XP White - 200900053
 Vinca Pacifica XP Burgundy Halo - 200700272
 Vinca Pacifica XP Dark Red - 200600189
 Vinca Pacifica XP Magenta Halo - 200500216
 Vinca Pacifica XP Really Red - 200600190
 Vinca Pacifica XP Rose Halo - 200500218
 Vinca Tattoo™ American Pie Mixture - 200600190
 Vinca Tattoo™ Black Cherry - 201800427
 Vinca Tattoo™ Orange - 202200007
 Vinca Tattoo™ Papaya - 201800424
 Vinca Tattoo™ Raspberry - 201800426
 Vinca Tattoo™ Tangerine - 201800425
 Vinca Tattoo™ Blueberry - 202100168
 Vinca Tattoo™ American Pie Mixture - 202100168
 Zinnia Double Zahara™ Cherry - 201600027
 Zinnia Double Zahara™ Fire - 201600032
 Zinnia Double Zahara™
 Raspberry Ripple - 201800173
 Zinnia Double Zahara™ Salmon - 201900097
 Zinnia Double Zahara™ Yellow - 202000360
 Zinnia Zahara® Cherry - 201600029
 Zinnia Zahara® Fire - 201000090
 Zinnia Zahara® Raspberry - 201500215
 Zinnia Zahara® Red - 201600030
 Zinnia Zahara® White - 201400297
 Zinnia Zahara® Yellow - 201500214

EUROPEAN COMMUNITY PLANT BREEDER'S RIGHTS

Celosia Neo™ Red - 46509
 Coreopsis SunKiss - 46544
 Echinacea PowWow® Wild Berry - 35233
 Heuchera Melting Fire - 20557
 Lavandula Blue Spear - 57923
 Lavandula Lavance Deep Purple - 48822
 Salvia interspecific Big Blue - 49559

EUROPEAN COMMUNITY UTILITY PATENTS

EP 3224371

French Marigold Fireball
 French Marigold Strawberry Blonde

EUROPEAN COMMUNITY UTILITY PATENTS
APPLIED FOR

- Impatiens Beacon® Blue Pearl
- Impatiens Beacon® Bright Red
- Impatiens Beacon® Coral
- Impatiens Beacon® Light Pink
- Impatiens Beacon® Lipstick
- Impatiens Beacon® Orange Improved
- Impatiens Beacon® Pink
- Impatiens Beacon® Rose
- Impatiens Beacon® Salmon
- Impatiens Beacon® Violet Improved
- Impatiens Beacon® White
- Impatiens Beacon® Cape Pine Mixture
- Impatiens Beacon® Chicago Mixture Improved
- Impatiens Beacon® Formula Mixture Improved
- Impatiens Beacon® Lindau Mixture Improved
- Impatiens Beacon® Otway Mixture
- Impatiens Beacon® Pearl Island Mixture
- Impatiens Beacon® Portland Mixture Improved
- Impatiens Beacon® Sanibel Mixture Improved
- Petunia Sophistica® Antique Shades
- Petunia Sophistica® Blackberry
- Petunia Sophistica® Lime Bicolor
- Petunia Sophistica® Lime Green
- Spreading Petunia Easy Wave® Berry Velour
- Spreading Petunia Easy Wave® Burgundy Velour
- Spreading Petunia Easy Wave® Red Velour
- Spreading Petunia Tidal Wave® Red Velour
- Spreading Petunia Wave® Carmine Velour

CANADA UTILITY PATENTS APPLIED FOR

- Impatiens Beacon® Blue Pearl
- Impatiens Beacon® Bright Red
- Impatiens Beacon® Coral
- Impatiens Beacon® Light Pink
- Impatiens Beacon® Lipstick
- Impatiens Beacon® Orange Improved
- Impatiens Beacon® Pink
- Impatiens Beacon® Rose
- Impatiens Beacon® Salmon
- Impatiens Beacon® Violet Improved
- Impatiens Beacon® White
- Impatiens Beacon® Cape Pine Mixture
- Impatiens Beacon® Chicago Mixture Improved
- Impatiens Beacon® Formula Mixture Improved
- Impatiens Beacon® Lindau Mixture Improved
- Impatiens Beacon® Otway Mixture
- Impatiens Beacon® Pearl Island Mixture
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