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Note: Growers should use the information presented here as a starting point. Crop times will vary depending on the climate, location, time of year, greenhouse environmental conditions, Chemical and PGR recommendations are only guidelines. It is the responsibility of the grower to test and follow all the recommended label directions for the specific chemical being used in accordance with all regulations.

**STAGE 1**: See to radicle emergence

**STAGE 2**: Radicle emergence to cotyledon expansion

**STAGE 3**: Cotyledon expansion to growth of all true leaves

**STAGE 4**: Growth of all true leaves to flowering for transplanting/shipping

**Cover**: Generally coarse vermiculite is recommended. Its primary purpose is to maintain the moisture level around the seed while germinating. Pelleted seed is generally not covered, enabling the irrigation water to disperse the pellet.

**Soil Temp.**: Provide 60 to 100°F from fluorescent bulbs when germinating in a chamber.

**Soil EC**: This is intended as a guide only.

**Supplemental Light**
- **Fertilizer (ppm)**: Refers to the parts per million of nitrogen. Alternating 20-10-20 with 10-14-14, 15-0-15 or 15-5-15 is a suggested starting point for a better program. Fertilizers high in ammonia form of nitrogen and/or phosphorus tend to promote stretch.

**Soil EC**: Electrical conductivity expressed as millimhos from a 2:1 dilution.

**Total Plug Grow Time**: The number of weeks for a Spring crop. This is intended as a guide only.

**Cultural Comments**
- Provide 10 to 120 fc from fluorescent bulbs when germinating in a chamber.
- Does not include time for pollen and seed development. Best germination if cool and dry. Control stretch with low temperature and fertilizer low in P and ammonia form of nitrogen, high light, DIF, B-Nine or A-Rest. Control Alternaria with moisture, air movement and fungicides to prevent Alternaria.
- Needs warm temperature to grow. Avoid wilting or burning seedlings by keeping moderate moisture, low light (<2,500 f.c.) and rinsing fertilizer off leaves.
- Provide long days (>14 hours) to promote earlier flowering. Feed more frequently, but control growth with DIF, moisture, light, B-Nine, Bonzi or Sumagic. Watch for boron or iron deficiency and high pH.
- Do not let the seedlings wilt or they may not recover. If necessary, B-Nine can be used to control stretch.
- Keep the media moderately moist until radicle emergence, then allow the media to dry moderately between irrigations. Do not let the seedlings wilt. Fertilize with 14-0-14, 15-0-15, 15-5-15 or similar.
- Grow same as petunias. Provide long days (>14 hours) to promote earlier flowering. Feed more frequently, but control growth with DIF, moisture, light or B-Nine.
- Provide 10 to 120 fc from fluorescent bulbs when germinating in a chamber.
- The number of weeks for a Spring crop.

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