

## Trachelium Lake

(*Trachelium caeruleum*)

### Germination

- Time of radicle emergence (5-7 days)
- Soil temperature 62-70°F (16-21°C).
- Keep media evenly moist but not saturated.
- Do not cover or bury the seed.
- Light at 100-500 foot-candles may be beneficial for germination.
- Soil pH 6.0 and soluble salts (EC) less than 1.0 mmhos/cm (2:1 extraction).
- Trachelium is very sensitive to high salts, particularly high ammonium, during germination.
- Keep ammonium levels less than 10 ppm.

### Plug Production

#### STAGE 1 Time of radicle emergence (5-7 days)

- Soil temperature 62-70°F (16-21°C).
- Keep media evenly moist but not saturated.
- Do not cover or bury the seed.
- Light at 100-500 foot-candles may be beneficial for germination.
- Soil pH 6.0 and soluble salts (EC) less than 1.0 mmhos/cm (2:1 extraction).
- Trachelium is very sensitive to high salts, particularly high ammonium, during germination.
- Keep ammonium levels less than 10 ppm.

#### STAGE 2 Stem and cotyledon emergence (7-10 days)

- Soil temperature 62-70°F (16-21°C).
- Reduce moisture levels once radicle emergence occurs! Allow the soil to dry out slightly before watering for best germination and rooting.
- Keep soil pH 6.0 and EC less than 1.0 mmhos/cm.
- Keep ammonium levels less than 10 ppm.
- Begin fertilizing with 50 75 ppm N from 15 0 15 or a calcium/potassium nitrate feed once cotyledons are fully expanded.
- Alternate feed with clear water.
- Irrigate early in the day so foliage is dry by nightfall to prevent diseases.

#### STAGE 3 Growth and development of true leaves (7 days)

- Night temperature 62°F (16°C)
- Day temperature 70°F (21°C)
- Allow the soil to dry between irrigations but avoid permanent wilting to promote root growth and control shoot growth.
- Maintain soil pH 6.0 and EC less than 1.0 mmhos/cm.

- Increase feed to 75-100 ppm N from 20 10 20 alternating with 15 0 15 or other calcium/potassium nitrate fertilizer.
- Fertilize once a week.
- Use DIF whenever possible, especially the first 2 hours after sunrise, to control plant height.

#### STAGE 4 Plants ready for transplanting or shipping (7 days)

- Soil temperature 62°F (16°C).
- Allow soil to dry between irrigations.
- Maintain soil pH 6.0 and EC less than 1.0 mmhos/cm.
- Fertilize with 15 0 15 or calcium/potassium nitrate feed at 100 150 ppm N as needed.

### Growing On to Finish

#### TRANSPLANTING

- Transplant when the second true leaves unfold.
- When buying in seedlings or plugs, allow seedlings 24 hours to acclimate to the greenhouse conditions, then transplant promptly.
- Delayed flowering and loss of final product quality occurs when seedlings are kept too long in plug trays.
- If holding is unavoidable, store plugs at 36-39°F (2-4°C) under fluorescent lights at 250 foot-candles 14 hours per day.
- Treat with a fungicide prior to storage to prevent botrytis.

#### SPACING

- When grown in pots, space pot to pot.
- If grown in the field, rows are 6-9 inches apart.

#### SUPPORT

Support material is not necessary.

#### TEMPERATURE

- Autumn and winter cultivation - 52-55°F (11-13°C) first 3 weeks then average 55°F night and 60°F days.
- February-April (high light intensity) - 60°F (15°C) nights, 65°F (18°C) days.
- Late spring-summer - 60-68°F (15-20°C) nights, max. 78°F (25°C) days.

## WATER

Keep soil moist. Water frequently to leach soil.

## LIGHT

- Maintain light levels below 3500 ftc. while maintaining moderate temperatures.
- Flowering is hastened in winter by increasing day length to initiate buds.

## MEDIA

- The growing medium should allow adequate aeration to the roots yet hold a steady supply of moisture.
- The greater the aeration of the medium, the more forgiving the medium is to overwatering.
- Growing media in benches must be better aerated than media used to grow stocks directly in the ground, because the bench bottom creates a "perched water table" which limits water drainage.
- Ground beds in locations with sandy loam soils may be suitable for growing stocks without any amendments.
- Heavy soils should be improved prior to planting by tilling in organic material such as peat moss, rice hulls, compost, or decomposed manure.
- Growing medium for raised benches should consist of less than 50 percent field soil, with the remaining percentage consisting of a mixture of more than one of the following: vermiculite, perlite, peat moss, composted bark, or rice hulls.
- Medium must be free of disease-causing organisms.
- If using soil, it will be necessary to disinfect the media.
- Perform a soil test of the growing medium before planting.
- EC should be between 2.0-2.25 mmhos.
- Ammonium-based nitrogen less than 10 ppm.
- pH 6.0.

## FERTILIZATION

- Feed at 200 ppm of 20-10-20 once every other irrigation until buds form.
- Switch to potassium chloride for the last four weeks of crop when buds have formed. EC can be 2.0-2.25 mmhos/cm.
- Water with clear water to rinse foliage and to leach soil frequently.

## Post Production Care

### HARVESTING

- The best quality flowers for the consumer are those cut with 75% of the flowers open.
- Premature harvesting leads to poor color

development and reduced flower size as flowers continue to open.

## WATER

- For maximum vase life, place trachelium stems in water as soon as possible after cutting.
- Remove foliage on the lower third of the stems, then grade and bunch.
- To condition for immediate use or shipping, place the flowers in warm water (70-75°F, 21-24°C) containing floral preservatives.
- Select a floral preservative which contains sucrose as well as 8-HQC (8-hydroxyquinoline citrate) or other bactericide to facilitate water uptake and inhibit stem plugging.

## TEMPERATURE

Hold at 45-50°F (7-10°C) at least 6 to 8 hours or overnight.

## LIGHT

Color development is enhanced by holding the stems in approximately 200 foot-candles light.

## STORAGE AND SHIPPING

- Trachelium can be shipped dry if precooled at 33°F (1°C).
- If stored dry, rehydrate and condition in cool water.
- Trachelium can be shipped horizontally, but best quality is kept when trachelium is shipped in buckets of water.
- Trachelium are not sensitive to ethylene.

## COMMON PROBLEMS

**Insects:** Aphids, Leaf rollers, Thrips

**Diseases:** Bacterial Blight, Pythium, Phytophthora, Rhizoctonia

