GrowerFacts

Tomato Napa Grape

(*Solanum lycopersicum*)

Germination

- Time of radicle emergence (2-3 days)
- Soil temperature 70-75°F (21-24°C).
- Keep media evenly moist but not saturated.
- Cover the seed with coarse vermiculite. Light is not needed for germination until radicle emergence.
- Soil pH 5.5-5.8 and soluble salts (EC) to less than 0.50 mmhos/cm (2:1 extraction).
- Tomato is very sensitive to high salts, particularly high ammonium, during germination.
- Keep ammonium levels to less than 10 ppm.

Plug Production

STAGE 1 - Time of radicle emergence (2-3 days)

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STAGE 2 - Stem and cotyledon emergence (7 days)

- Soil temperature 68-72°F (20-22°C).
- Reduce moisture levels once radicle emergence occurs! Allow the soil to dry out slightly before watering for best germination and rooting.
- Light levels can be increased to 1000-1500 foot-candles.
- Keep soil pH 5.5-5.8 and EC to less than 0.50 mmhos/cm.
- Begin fertilizing with 50 75 ppm N from 14 0 14, 15-5-15 or a calcium/potassium nitrate feed once cotyledons are fully expanded
- Keep ammonium levels to less than 10 ppm.
- 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)

- Soil temperature 60-65°F (16-18°C).
- Allow the soil to dry thoroughly between irrigations but avoid permanent wilting to promote root growth and control shoot growth.
- Increase light intensity to 1000-2500 foot-candles.
- Maintain soil pH 5.5-5.8 and EC to less than 0.75 mmhos/cm.
- Increase feed to 50-75 ppm N with 14 0 14, 15-5-15 or other calcium/potassium nitrate fertilizer.
- Fertilize every 2nd – 3rd irrigation.
- If using 15-0-15 supplement with magnesium 1 2x during this stage, using magnesium sulfate (16 oz/100 gal) or magnesium nitrate. Do not mix magnesium sulfate with calcium nitrate as precipitate will form!
- 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 60-62°F (16-17°C).
- Allow soil to dry thoroughly between irrigations.
- Maintain soil pH 5.5-5.8 and EC to less than 0.75 mmhos/cm.
- Fertilize with 14 0 14, 15-5-15 or calcium/potassium nitrate feed at 100 150 ppm N as needed.

Growing On to Finish

TEMPERATURE

- **Night:** 62-65°F (62-18°C)
- **Day:** 65-70°F (18-21°C)

LIGHT

Maintain high light levels while maintaining moderate temperatures.

MEDIA

Use a well-drained, disease-free soil-less medium with a medium initial nutrient charge and a pH 5.5-6.2.

FERTILIZATION

- Tomatoes respond to increased fertilization with increased growth.
- Earliest garden yield comes from plants which have not been stressed from insufficient nutrition.
- Fertilize every third irrigation with 15-0-15, 15-5-15 at 100-150 ppm nitrogen.
- Maintain medium electrical conductivity around 1.0 mmhos/cm (using 1:2 extraction).

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 fertilizer, especially phosphorous and ammonium-form nitrogen.
- Tomatoes are responsive to day/night temperature differential (DIF), and are shorter with a negative DIF.
- Although Sumagic is labeled for use on Tomatoes in many states, we do not recommend its use until the grower has at least trialed it on a limited basis. Application rates, timing and variety response may affect growth for the home gardener.

COMMON PROBLEMS

Insects: Aphids, Thrip, Whitefly

Diseases: Botrytis, TSWV(INSV), Pythium, Rhizoctonia

Post Production Care

TEMPERATURE

- Tomatoes will tolerate warm temperatures, however temperatures below 70°F (21°C) are recommended during retail display.
- Optimum conditions may be difficult to maintain, especially if plants are displayed outside.

LIGHT

Tomatoes grow best in full sun; however partial shading may be beneficial during retail display.

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