GrowerFacts

Tomato Champion I I

(*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.
- We believe plants not treated with growth retardants will perform more consistently for the home gardener. The growth regulator Sumagic can be used on Tomatoes. If using on Tomatoes the grower must follow label directions closely.

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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