

## VERBENA X HYBRIDA

# Tuscany®

**Minimum Germination Rate:** 85%

**Seed Product Form:** Raw, GoldSmart™ Primed

### FLOWERING

**Time frame when plants are receptive to flower**

**initiation:** Days 18 – 24; 4 – 6 leaves present.

**Flowering Type:** Facultative long-day plant – long days enhance flowering.

**Specific Flowering Mechanism:** Maturity of plant and high light will trigger flowering.

### PLUG CULTURE

**Germination:** Optimum conditions for seedling development that begins the day the crop is sown until cotyledon expansion. Expect radicle emergence in 4 – 7 days.

**Cover:** Cover seeds with a thin layer of medium sized vermiculite to maintain moisture levels.

**Media:** • pH: 5.8 – 6.2

• EC: <1

**Light:** Light is not necessary for germination. If utilizing a chamber, providing a light source of 10 – 100 foot candles (100 – 1,000 lux) will improve germination and reduce stretch compared to seed germinated in the dark.

**Temperature:** 75° – 76°F (24° – 24.5°C) day and night from day 1 – 7; when cotyledons appear reduce temperature to 68°F (20°C).

**Moisture:** Water in plug trays before seeding to moisture level moist (3+), and maintain at (3+) for days 1 – 7 or until radicle emergence. For days 8 – 15, water trays to moisture level wet (4), and allow trays to approach level (3) before resaturating. Beginning day 16, begin alternating between moisture level wet (4), and level medium (2).

**Humidity:** 100% from day 1 – 7 or until seed coats are shed.

**Dehumidify:** On day 8 or after seed coats have shed, reduce to 40%. Provide horizontal airflow to aid in drying down the media through evapotranspiration, allowing better penetration of oxygen to the roots.

**Fertilizers:** Maintain EC at <1. Fertigation water should not be greater than an EC of 0.5.

**Plug Bulking/Flower Initiation:** Optimum conditions during the vegetative period, beginning at cotyledon expansion, needed for the root to reach the edge of the plug cell AND to make the plant receptive to flower initiation.

**Media:** • pH: 5.8 – 6.2

• EC: 1.2 – 1.5

**Light:** Provide 3,500 – 4,500 foot candles (12 – 16 total mols or 35,000 – 45,000 lux) to hasten flower induction. Supplemental lighting under low light conditions at 350 – 450 foot candles (35,000 – 45,000 lux) will enhance shoot and root growth.

**Temperature:** 67° – 68°F (20°C) with a -3 to -5°F (-1.5 to -3°C) DIF or morning drop from day 16 – 44.

**Moisture:** Alternate between moisture levels wet (4), and moist (3). Allow media to approach level moist (3), before re-saturating to level wet (4).

**Fertilizers:** 14-4-14 pr 17-5-17 at 60 – 80 ppm nitrogen to maintain an EC of 1.2 – 1.5; 6 – 8 ppm phosphorus.

**Growth Regulators:** If needed, spray B-Nine (daminozide) at 1,250 – 2,500 ppm. In warmer conditions Bonzi (paclobutrazol) or A-Rest (ancymidol) may be applied.

### GROWING ON

**Transplant Ready:** 8 – 10 weeks from a '288' plug tray.

**Finish Bulking/Flower Initiation:** Optimum conditions during the vegetative period, beginning at transplant, needed for the root to reach the edge of the container AND to make the plant receptive to flower initiation.

**Media:** • pH: 5.8 – 6.2

• EC: 1.5 – 2.0

**Light:** Provide 3,500 – 4,500 foot candles (12 – 15 total mols or 35,000 – 45,000 lux) to hasten flower development. Long days may enhance growth.

**Temperature:** 70°F (21°C) night temperature and 67°F (19°C) day temperature for 3 days after transplanting. Then 68° – 70°F (20° – 21°C) at night, 64° – 67° (18° – 19°C) in the day with a – 5 to -10°F (-2° to -3°C) negative DIF from 5 a.m. to 9 a.m.

**Average Daily Temperature (ADT):** 67°F (19°C)

**Moisture:** Alternate between moisture levels wet (4), and moist (3). Allow media to approach level (3) before re-saturating to level (4).

**Humidity:** 40%

**Dehumidify:** Provide horizontal airflow to aid in drying down the media through evapotranspiration for better disease control.

**Fertilizers:** Under high light conditions, apply an ammonium-based feed (17-5-17) at 100 – 150 ppm nitrogen. Under low light conditions, apply a calcium-based feed (14-4-14) at 100 – 150 ppm nitrogen.

**Growth Regulators:** If needed, apply either 1 – 2 applications of B-Nine (daminozide) at 2,500 – 5,000 ppm, A-Rest (ancymidol) at 2 – 5 ppm or Bonzi (paclobutrazol). Also responds to negative DIF treatments of 5 – 10°F (2° – 3°C) for height control.

### Techniques to Enhance Post Harvest Quality

**When to Treat:** 1 – 2 weeks prior to finish or shipping.

**Growth Regulators:** B-Nine (daminozide) at 2,500 – 3,000 ppm.

**Fertilizer:** Potassium nitrate drench at 150 ppm nitrogen.

**Common Diseases:** Pythium, Rhizoctonia, Powdery Mildew. Monitor moisture levels and utilize preventative fungicide drenches.

**Common Pests:** Fungus gnats, Shore Flies, Aphids, Thrips. Use pesticides according to label directions.

### PRODUCT USE

Packs, pots, containers, mass



plantings, beds, hanging baskets

**GARDEN SPECIFICATIONS**

**Light:** Full sun

**USDA Hardiness Zone:** 11

**AHS Heat Zone:** 12 – 1

**Tuscany** 8 – 10" (20 – 25 cm) 10 – 12" (25 – 30 cm)

**Verbena SCHEDULING in Weeks**

**Total crop time** 10 – 12 12 – 14

**'288' plug crop time** 6 – 7 6 – 7

**Transplant to finish crop time**

**Packs** 5 – 6 6 – 8

**4" crop** 6 – 8 7 – 9

**6" crop** 8 – 9 9 – 10

**10" hanging basket** 8 – 10 8 – 11

*Note: These suggestions are only guidelines and may have to be altered to meet individual grower's needs. Check all chemical labels to verify registration for use in your region.*

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