

# Ptilotus exaltatus Matilda

**Family, Origin:** Amaranthaceae, Australia

**Product Use:** Pots, mixed containers, landscape **Minimum**

**Germination Rate:** 85 %

**Seed Form:** ApeX

## FLOWERING

**Flowering Type:** Day neutral plant, will flower regardless of day length.

**Flowering Mechanism:** Higher irradiance and warmer temperatures will promote earlier flowering. Supplemental lighting during germination is beneficial but not necessary.

## PLUG CULTURE

**Germination:** Expect radicle emergence in 5 days with complete germination in 7 days.

**Cover:** Requires light for germination. Cover the seed very lightly with vermiculite. The seeds should be visible when watered in.

**Sowing method:** 1 seed per plug.

**Media:** Use a well-drained media, pH 5.5-5.8; EC 0.5

**Temperature:** Maintain 23-26 °C for the first 7 days, then lower the temperature to 21-24 °C.

**Moisture:** Begin with a saturated (5) for the first 3-4 days and then begin to dry them back to a wet (4) on day 5-6. On day 7 begin to alternate between a wet (4) and a medium (2). Allow the moisture level to approach a medium (2) before re-saturating to a wet (4).

**Humidity:** 95-100 % until day 5, then lower it to 40-60 %.

**Light:** Requires light for germination.

If germinating in a chamber supply 10-100 ft. candles (100-1,000 lx); (50 Watt/m<sup>2</sup>) to prevent seedling stretch. Protect seedlings from direct light when moving to Stage II. Once established in Stage II the light levels can be increased.

On days 7-10 the light levels can be increased to 6-8 mol/m<sup>2</sup>/day (2,000-2,500 ft. candles or 20,000-25,000 lx). Providing a day length > 12 hrs. will promote earlier flowering.

**Fertilizer:** Maintain an EC < 1.0. Fertilized water should not exceed an EC of 0.5. Initial feeding should be with a balanced fertilizer low in ammonium and phosphorous. Begin feeding on day 7 with a 14-4-14; 14-2-14 or 17-5-17 fertilizer at 50 ppm.

**Plug Bulking and Flower Initiation:** Maintain optimal conditions during the vegetative stage from cotyledon expansion to flower initiation.

When the seedlings root to the edge of the plug and reach the 4-6 true leaf stage flower initiation will occur.

**Media:** pH 5.5-5.8; EC 1.25-1.5.

**Light:** Continue to protect from direct sunlight until seedlings are well established. On day 21-22 the light levels can be raised to 10-12 mol/m<sup>2</sup>/ day or 3,000-3,500 ft. candles (30,000-35,000 lx). Higher light levels will facilitate early flowering and sturdy plants with large flowers.

**Temperature:** Maintain 20-21 °C night and day. When the roots reach the bottom of the cell the temperature can be lowered to 19.5 °C.

**Moisture:** Begin alternating between a wet (4) and a medium (2) on day 7. To prevent algae it is important to begin a good wet to dry cycle on day 12 where the media will dry back within a 24 hr. period. Good ventilation and horizontal airflow will create such an environment. Avoid watering late in the day and never allow plants to stay in a saturated state for a 24 hr. period. Over watered plants will develop yellow lower leaves.

**Fertilizer:** Begin fertilizing early to improve seed-ling quality. Under high light conditions slightly higher levels of ammonium can be used. Under high light conditions fertilize with a 17-5-17 feed and under low light use a calcium-based fertilizer 14-2-14 or 14-4-14. Initial feeding should start at 50 ppm and gradually work up to 100-150 ppm.

**Growth Regulators:** There are several growth regulators that can be used. B-Nine (daminozide) can be applied as a spray at 2,500-5,000 ppm. The higher rates are used under higher temperature and humidity levels. Cycocel (chlormequat chloride) can be applied as a spray at 750-1,000 ppm. Sprays using combinations of B-Nine (daminozide) + A-Rest are also effective. Combine B-Nine at 2,500 ppm + A-Rest at 4 ppm and apply as a spray. Combinations of B-Nine and Cycocel can be used as a spray with 2,500 ppm B-Nine + 500 ppm Cycocel. Bonzi (paclobutrazol) does not seem to be very effective as a growth regulator. Sumagic (uniconazol) sprays at 5 ppm can also be used.

**Fungicides:** Scout for botrytis and phytophthora during the plug stage and apply specific fungicides per the recommended rate.

## GROWING ON

**Media:** pH 5.5-5.8; EC 1.2-1.5.

**Light:** Provide 12-14 mol/m<sup>2</sup>/day (3,500-4,000 ft. candles or 35,000-40,000 lx). Well established plants can be grown at 16-20 mol/m<sup>2</sup>/day (4,500-5,500 ft. candles or 45,000-55,000 lx).

**Temperature:** Maintain 20-21 °C for the first 14 days or until the roots reach the bottom of the container. Thereafter temperatures may be lowered to 19 °C. An ADT (average daily temperature) of 19 °C will give the fastest finished crop.

**Moisture:** Alternate between moisture levels wet (4) and medium (2). Let plants dry back to a medium (2) before re-saturating to a wet (4). The drying back of the plants will help force the roots to the bottom of the pot.

**Humidity:** 40-60 % humidity is ideal. Providing good ventilation and horizontal airflow will help lower the humidity and dry back the media, providing oxygen to the roots.

**Fertilizer:** Moderate to high fertilization levels are required. Avoid high levels of ammonium and high levels of nitrogen. Also keep phosphorous levels lower. Feed with a complete balance fertilizer 14-4-14 or 17-5-17 at 100-150 ppm.

**Growth Regulators:** Additional growth regulators may be required approximately two weeks after transplanting. Apply the same growth regulator rates as those used in the plug stages as needed.

**Fungicide:** Apply fungicides during long periods of low light and high humidity. Fungicides against soil borne diseases and foliar diseases are recommended.

**Common Diseases:** Botrytis and phytophthora.

**Pests:** Primarily aphids and thrips.

**Post Harvest:** Fertilize with potassium nitrate at 100 ppm 1-2 weeks prior to shipping.

Plug Crop Time	
288 tray	5-6 wks
128 tray / 144 tray	6-7 wks
Finished Crop Time (from 288 tray)	
10 cm pots	7-8 wks
15 cm pots	8-9 wks
20 cm pots (2-3*)	10-11 wks