

Madeira[®] Daisy, Dana, Pink Dwarf & Butterfly *Argyranthemum*

Propagation

- Choose a well-drained medium with an EC of 0.75 to 0.80 mmhos and a pH of 5.6 to 5.9.
- Open shipping boxes immediately. Stick cuttings within 12 to 24 hours of arrival. Cuttings can be stored overnight, if necessary, at 45 to 50°F (7 to 10°C).
- Soil temperature should be maintained at 68 to 74°F (20 to 23°C) until roots are visible.
- Begin fertilization when roots become visible with 75 to 100 ppm N. Increase to 150 to 200 ppm N as roots develop.
- As the rooted cuttings develop, high light, appropriate water stress and moderate air temperatures should reduce the need for chemical plant growth regulators (PGR). *Argyranthemum* are responsive to B-Nine and Cycocel, should PGRs be needed.
- Pinching should not be necessary during propagation.
- *Argyranthemum* rooted cuttings should be ready for transplanting 21 to 28 days after sticking.

Growing On to Finish

Media

Use a well-drained, disease-free, soilless medium with a pH of 5.5 to 6.2.

Temperature

- Nights: 50 to 60°F (10 to 16°C)
- Days: 65 to 78°F (18 to 26°C)
- Excessively warm temperatures will cause stem stretch and greatly reduce overall quality.
- Moderate night temperatures will create maximum branching and the best possible habit.
- Night temperatures routinely below 50°F (10°C) will substantially increase crop time.

Light

- Keep light intensities at 6,000 to 9,000 f.c. (60,000 to 90,000 Lux).
- Low light levels promote stem stretch.
- Flowering is best under long days of Spring and Summer, although plants will bloom year-round in moderate climates. Crop time will be longer under short daylength.
- For fastest flowering during short daylength, maintain night temperatures at 58 to 60°F (14 to 16°C).

Watering

- During the first 10 to 14 days, the media should be watered sparingly and never saturated. *Argyranthemum* are susceptible to root diseases if over-watered.
- The media should dry slightly between waterings, but wilt should be avoided.

Fertilizer

- *Argyranthemum* require moderate to heavy fertilization.
- Use constant feed at 200 to 250 ppm with additional iron as needed.
- A full complement of minor elements should be provided.
- Use clear water with every third watering if high soluble salt problems occur.

Pinching

- Pinching is not required when growing Ball FloraPlant *Argyranthemum* in 4 to 4.5-in. (10 to 11-cm) containers. Growers may choose to pinch plants in larger, 5 to 8-in. (13 to 20-cm) containers to enhance branching and increase the number of flowers that open at first flower. Under low light conditions, pinching is recommended.
- Pinch plants 4 to 10 days after transplanting if desired. Pinching will delay the crop approximately 10 to 14 days.

Controlling Growth

- Use high light, moderate water stress and cool temperatures to control growth.
- If necessary, growers can use 1 or more applications of B-Nine (1,500 to 3,000 ppm), starting 2 weeks after transplant. Cycocel as a spray (750 to 1,000 ppm) can also be used to control growth. *Argyranthemum* are also very responsive to Sumagic, applied as a spray (10 to 20 ppm). Bonzi, applied as a drench (2 to 5 ppm) when the plants reach saleable size, can be used to “hold” the crop while allowing flower development to continue. When using any PGR as a drench, growers must pay close attention to rate, volume of solution applied and measurements during preparation.
- Some plant growth regulators applied late in the crop cycle can delay flowering 1 to 2 weeks and significantly reduce flower size. Application should be avoided once flower buds appear.

- These recommendations for plant growth regulators should be used only as general guidelines. Growers must trial all chemicals under their particular conditions.

Common Problems

Insects: Aphids, thrips, whitefly, leafminers.

Diseases: *Botrytis*, *Rhizoctonia*, *Pythium*.

All Ball FloraPlant Argyranthemum cuttings are derived from culture and virus-indexed stock from the **Ball Certified Plants®** program.

Problems	Causes
Plant collapse	Wet media for an extended period (<i>Pythium</i>) <i>Rhizoctonia</i> due to planting too deep
Delayed flowering	Late application of growth regulators
Excessive vegetative growth	High ammonia concentration in the soil Over-fertilization under low light conditions Low light and over-watering; wet media High nighttime temperatures
Poor branching	Low fertilization; lack of nitrogen, low light
Stretched plants	Low light Excessive phosphorous
Chlorosis	Iron deficiency High pH Nitrogen deficiency

Argyranthemum Crop Schedule & Uses

(Crop Schedule In Weeks)

Form	4-In. (10-Cm) Pots 1 PP*	6-In. (15-Cm) Pots 1 PP*	10-12-In. (25-30-Cm) Pots 3-5 PP*
Unrooted cuttings	9-11	10-13	12-16
Rooted cuttings	6-9	7-10	9-12

*PP: Plants per pot or basket

Note: Growers should use the information presented here as a starting point. Crop times will vary depending on the climate, location, time of year and greenhouse environmental conditions.

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