

# Argyranthemum

## Butterfly



### NUTRITION

**pH:** 5.8 – 6.2

**EC:** (2:1 extraction method) .6 – .9

Constant feeding at 200ppm nitrogen with a fertilizer selected for grower's water quality and soil mix is recommended.

### TEMPERATURE

**Rooting out:** 65 – 72 F

**Growing on:** 62 – 68 F

**Holding:** 45 – 50 F

### WATERING

Maintain moderate soil moisture. Allow the soil to cycle from moist to slightly dry. Avoid both severe dry downs/wilting and long periods of wet soil, especially at cooler temperatures. To avoid lower leaf soft rots in lower light, cooler temperatures, or higher humidity situations, water early in the day if needed to avoid prolonged exposures of water on lower foliage. If watering from overhead in poor growing conditions, make sure to supply good air movement to avoid fungal/bacterial diseases.

### TIMING

**4" – 5":** 4 – 5 weeks with one 42 cell or 84 cell Supernova® plant per container.

**6"/1GL Royale™:** 6 – 7 weeks with one 42 cell or 84 cell Supernova plant per container.

**8":** 7 – 9 weeks with one 42 cell or 84 cell Supernova plant per container.

**Supernova 42 Liners are used at Four Star and are recommended for best flower timing, flower count, and plant size in smaller containers.** Supernova 84s can also be considered. Supernova 84s may finish about one week later than the Supernova 42s. The Supernova 84 finishes faster and more consistently than 84 and 104 Liners. They offer an option that balances shipping costs with improved performance. If 84s and 104s are used for spring production, supplemental lighting, additional crop time, pinching, and additional PGR applications are required.

### PLANTING

All *Argyranthemum* liner plants should be planted into a well-drained soil mix selected to match individual water quality and fertilizer blends. Water in thoroughly without saturating the mix and maintain a constant moderate soil moisture level for the first seven to 10 days to establish new rooting. When using Supernova treated liners, NO pinching is required. If 84 or 104 Liners are used, 1GL Royale containers planted 1ppp should be pinched and larger containers planted either 1ppp or multiple plants per pot should also be pinched. Butterfly liner trays can dry out quickly and should be planted as soon as possible, or extra watering care should be devoted to them.

### LIGHT/LIGHTING

*Argyranthemums* should be grown in a high light area of the greenhouse for optimal flowering and plant development. Supernova Liners have been treated for earlier flowering and will not require additional grower lighting. If very early crops are scheduled well before the onset of 12-hour natural daylengths, daylength extension lighting is helpful. Also, if growing from 84 or 104 Liners, additional lighting to 14 hours/day lighting is required for early spring to mid-spring finish dates, and additional PGR treatments will be required, in comparison to plants grown from Supernovas.



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The rates and chemicals listed are based on our southeast Michigan growing conditions, and are not recommended for nationwide application. Please adjust the rates and spray applications to your location and facility.



## GROWTH REGULATORS

When being grown from Supernova Liners, either a light spray of Sumagic® (uniconazole) at 5ppm – 10ppm or a 1ppm Bonzi® (paclobutrazol) drench can be applied to control growth. Treatments are usually made to smaller containers seven to 14 days after planting. Treatments to larger containers can be made when a desired “pre-finished” size is attained (two to four weeks after planting). Watch for the “softening” look and lighter green appearance of new growth as an indication for PGR treatment needs.

Cooler growing temperatures, high light levels, proper spacing, and drier growing practices can be very helpful at managing plant size. Supernova treated plants should require few PGR treatments.

Plants grown from 84 and 104 Liners will require at least one drench at 1 – 3ppm Bonzi or possibly one to two light sprays of Sumagic at 5ppm – 10ppm. Other materials such as Topflor® (flurprimidol) and Piccolo® (paclobutrazol) can be used at rates that correspond with the degree of treatment recommended for Sumagic or Bonzi. Repeated PGR treatments can compound to cause flowering delay.

**When using Supernova Liners, please refer to the Supernova Culture Guide for specific PGR recommendations. Florel® (ethephon) is not recommended for use with Supernovas, except possibly with *Nemesia* and *Diascia*.**

## PEST and DISEASE MANAGEMENT

Pest and disease practices should be followed as with most crops. Lower leaf spotting/rots due to improper watering is the most common disease issue. In poor growing conditions, a fungicide spray may be needed to prevent or cure leaf/stem soft rots. Copper-based materials are very helpful in these situations.

## OUTDOOR GROWING SCHEDULE

Butterfly *Argyranthemum* can be grown outdoors in the earliest spring conditions (approximately frost to 25 F, or early- to mid-April in Michigan), if frost protection is provided. If no frost protection is provided, they can be moved outdoors during the second earliest spring conditions (approximately frost to 28 F, or mid- to late April in Michigan). These recommendations are based on average spring weather and should be adjusted for unseasonably severe or unseasonably mild conditions.

## OTHER TIPS

Supernova treated liners are highly recommended for most grower uses. Supernovas are not recommended or required for baskets and large containers. But, many growers are beginning to use them for early hanging basket and upright needs. Growth habit and timing may be different from 84 and 104 Liners, but flowering time and “retail ready” containers can be produced in portions of the growing season when not possible from 84s and 104s. For best combination planting performance, vigor considerations should be made of all plants used, if mixing Supernova treated plants in with non-Supernova treated plants. If mixing Supernova and 84s or 104s in combination plantings, a pre-plant drench of Sumagic or Bonzi to any 84 or 104 Liner used may be helpful to even out plant growth.