

**5 Cultural Information for:** Calceolaria Dainty Annual

**Common Name:** Pocketbook plant

**Botanical Name:** Calceolaria hybrida

**Seed Count:** 22,700/oz. 800/gram

**Optimum Germination Temperature:** 65-68°F / 18-20°C

**Optimum Growing Temperature:** 65-72°F / 18-22°C

**Optimum pH:** 5.5 – 6.0

**EC – Plug:** 0.4 – 0.8 mmhos/cm (1:2) / 0.9 – 2.0 (SME) / 1.1 - 2.6 (Pour Thru)

**EC – Finishing:** 0.9 – 1.3 mmhos/cm (1:2) / 2.1 – 3.5 (SME) / 2.7 - 4.6 (Pour Thru)

Calceolaria is a unique pot crop that is economical to produce. The Dainty series is ideal for 3-1/2 - 4 inch/8-10 cm. pot production and possesses a higher resistance to botrytis than other series. Calceolaria Dainty is available in a Mix of Red, Red & Yellow, Yellow w/Red Spot and Bronze. Calceolaria Dainty is sold as pelleted seed only and is ready to sell about 4 months after sowing.

## Plug Culture – 5 weeks (288 / 12 x 24 tray)

**Stage One** (days 1-10) Single sow (pelleted) seed into plug trays filled with fine peat. Calceolaria requires light to germinate but a light cover of medium vermiculite helps to maintain optimum humidity and dissolve the pellet. Maintain\* a minimum temperature of 65°F / 18°C throughout the entire plug stage. *\*This is especially critical for larger plug cells (128) as the plants are receptive to flower bud initiation at 3-4 leaf pairs.*

**Note:** Calceolaria Dainty is sensitive to photoperiod and temperature in the plug stage as outlined below:

Temperature	Short Day (< 12 hours)	Long Day (>12 hours)
50-59°F / 10-15°C	Promotes Flowering	Promotes Flowering
65-70°F / 18-21°C	<b>Promotes vegetative growth</b>	Promotes Flowering

**Stage Two** (days 11-20) After seedlings germinate place in a bright greenhouse with good air movement and a day temperature of 70-72°F/21-22°C and a night temperature of 65-68°F/18-20°C. Supplemental lighting can help hasten development under low light periods, **but the photoperiod should not exceed 12 hours**. If no starter charge is present in the media, a light feed of 75-100ppm Nitrogen from a well-balanced calcium nitrate-based fertilizer is recommended.

**Stage Three** (days 21-34) The true leaves have formed, and the seedlings are beginning to fill in the cells. Maintain the pH at 6.2 or lower to avoid iron chlorosis. Fertilize as needed to maintain strong growth and allow the media to dry slightly between irrigations. Maintain the temperature between 65-72°F/18-23°C and short days (<12 hours) to avoid premature flower bud initiation. Calceolaria is sensitive to sunburn at all production phases so do not expose the plants to light intensities above 5,000-foot candles/54,000 lux.

**Stage Four** (day 35) The plugs are now ready to transplant into pots. Do not delay transplanting.

## Pot Culture – 13-15 weeks

**Transplant:** Transplant into pots using a rich and well-drained soil. A soil pH of 5.5 to 6.0 will give best results.

**Fertilizer:** Fertilize as needed with 75-100 ppm Nitrogen using a well-balanced calcium nitrate-based formulation.

**Vegetative growth:** To produce enough vegetative growth prior to flower bud initiation, maintain short days and a minimum temperature of 65°F.

**Flower Initiation:** Photoperiod and temperature are the factors that influence flower bud initiation as presented in the chart below. Allow 5-6 weeks for flower bud initiation.

## Production Schedule (18-20 weeks)

Cultural Step	Production Time	Temperature °F / °C	Photoperiod
Sow seed (288)	5 weeks	65-70°F / 18-21°C	Short Day < 12 hours
Transplant - Bulking	4-5 weeks	65-72°F / 18-22°C	Short Day < 12 hours
Flower bud initiation	5-6 weeks	50-59°F / 10-15°C	Short or Long Day* 10-16 hours
Forcing	4 weeks	59-64°F / 15-17°C	Ambient

*\*long days promote rapid flower bud initiation and development*

**Growth regulator:** Dainty is naturally compact and should not require growth regulator applications.

**Insects:** Whitefly, mites and aphids.

**Disease:** Botrytis, root and crown rots and Tomato Spotted Wilt Virus (TSWV).

**Chlorosis:** If the foliage begins to turn chlorotic, check the root system for signs of poor development that could have been caused by over-watering, root rots, or high salt levels. The pH of the media is also critical as a high pH reduces iron uptake and a low pH reduces magnesium absorption.

**Marketing:** Calceolaria will stretch and deteriorate quickly if held in dark and/or warm temperature conditions. Calceolaria Dainty is an attractive plant for Autumn holidays, like Thanksgiving.

*“All information given is intended for general guidance only and may have to be adjusted to meet individual needs. Cultural details are based on North American conditions and Sakata cannot be held responsible for any crop damage related to the information given herein. Application of recommended growth regulators and chemicals are subject to local and state regulations. Always follow manufacturer's label instructions. Testing a few plants prior to treating the entire crop is best.”*