



Crop	Primula
Series	Prima
Botanical name	<i>Primula malacoides</i>
Plant type	Annual
Seed type	Raw
Seed count	8,000 seeds /gr
Germination	15-20°C -14 days light favored
Growing	10-15°C
Optimum pH	6.0-6.5

Plug Culture: 8 weeks (288 cell tray)

Stage 1 (days 1-14) Single sow into a plug tray filled with media with sterile substrate high organic matter and a pH of 5.5 to 6.0. Primula seed requires light for germination but a light cover of vermiculite is recommended to maintain enough moisture. Optimum germination temperature is 15°C. Maintain high humidity levels and if needed place the trays in a germination chamber or shaded greenhouse to provide cool conditions.

Stage 2 (days 15-21) When the cotyledons are fully expanded, lower the humidity levels but do not allow the plants to dry out. A light mist 2-3 times per day is beneficial. Primula plants are very sensitive and the leaves can easily burn in strong light. A light shade is recommended to protect the seedlings from intense sunshine. During periods of high temperatures the plants grow very slowly. Fertilize with 50-75 ppm of nitrogen to strengthen the seedlings. Select a well-balanced nitrate based fertilizer with ample potassium to produce strong and healthy seedlings.

Stage 3 (days 22-35) The first true leaves have formed. For high quality seedlings it is necessary to maintain cool temperatures and enough humidity. Fertilize the seedlings with 100 ppm of nitrogen as

needed to maintain strong growth.

Stage 4 (days 36-45) The seedlings have 3-4 true leaves and are now ready for transplanting. Applying 200 ppm of nitrogen a week before transplanting helps the seedlings make the transition from the plug tray to the final container.

Transplant to finish: 13 weeks

Media: Use a slightly fertilized well-drained sterile media. Optimum pH is 5.5-6.0.

Transplanting: Transplant seedlings into pots using well-drained sterile media. Optimum pH is between 6.0 and 6.5.

Temperature: After transplanting, maintain a temperature of 18-21°C for four weeks. Afterwards, drop the temperature to 7-10°C for 6 weeks to initiate flowers. After visible bud, raise the temperature at 14°C for three weeks before bloom is desired.

Lighting: Apply long day conditions (more than 14 hours) for four weeks after transplanting to keep the plants in the juvenile phase and build plant body.

Fertilizer: A well-balanced nitrate based formulation with ample potassium is recommended. Apply 100-150 ppm of nitrogen as necessary to maintain an EC between 1.0 and 1.2 mS/cm (1:2 slurry). Primula is sensitive to high salts (above 1.5 mS/cm) which causes leaf edge burn and root damage. A pH above 6.5 will cause chlorotic leaves.

Crop schedule:

In general, Primula malacoides 'Prima' flowers in 19-22 weeks under optimum temperature conditions. Transplanting too early will promote excess vegetative growth. Late transplanting results in premature flowering or no flowering on undersized plants.

Production Points: Primula requires cool conditions and high humidity to produce high quality plants which favors the development of botrytis. Good sanitation, watering early in the day and good air movement helps control and prevent this disease.

Plant growth regulators: In general, Primula growth is controlled with cool temperatures and restricting fertilizer. If necessary, the chemical growth regulators e.g. daminozide, paclobutrazol are effective. Do not apply below 5°C. To avoid over-regulation, multiple applications at lower rates is best. Do not apply after flower bud set.

All information given is intended for general guidance only and may have to be adjusted to meet individual needs. Cultural details are based on Asian conditions such as in Japan and Sakata cannot be held responsible for any crop damage related to the information given herein. Always follow manufacturer's label instructions. Testing a few plants prior to treating the entire crop is best.