

cultural notes

vegetative range

Propagation Guidelines					Finished Guidelines					
Species	Variety Series	Rooting Time (wks)	Rooting Hormone	Pinch in Prop.	Media pH	Media EC (mS/cm)	Fertilizer Rate (ppm N)	Temp. Day / Night (°C)	Pinch after Transplant	Day Length Sensitivity
<i>Angelonia angustifolia</i>	Carita™, Carita™ Cascade	3 to 4	No	Yes	5.6-6.2	1.8-2.2	200	21-27 / 19-21	Yes	No
<i>Argyranthemum frutescens</i>	Sassy®	3 to 4	No	Usually not needed	5.8-6.2	2.0-2.5	200-250	19-23 / 10-16	Yes	No
<i>Bacopa Sutura cordata</i>	Calypso™	3 to 4 (2 cuttings/cell)	No	Yes	5.4-5.8	1.8-2.2	200	18-24 / 12-15	Yes	No
<i>Bracteantha bracteata</i>	Strawburst™	3 to 4	Optional	No	5.8-6.2	1.5-2.0	150	18-24 / 12-15	No	No
<i>Calibrachoa hybrid</i>	Callie™	4 to 5	Optional	Yes	5.4-5.8	2.3-2.7	250-300	19-23 / 12-16	Yes	Yes
<i>Dahlia x hybrida</i>	Goldahlia™, Star Sister™	4-5	Optional	Optional	5.4-6.0	1.5-2.0	150-200	18-24 / 15-18	No	Yes
<i>Diascia barberae</i>	Darla™	3 to 4 (2 cuttings/cell)	Optional	Yes	5.8-6.2	2.0-2.5	200-250	19-23 / 12-16	Yes	No
<i>Dipladenia Mandevilla sanderi</i>	Rio™	5-6.	Optional	No	5.6-6.2	1.8-2.2	200	20-25 / 17-20	No	No
<i>Hibiscus Rosa Sinensis</i>	Klahanie	6-8	Optional	Yes	5.5-6.1	1.8-2.2	200	21-27 / 19-21	Yes	no
<i>Impatiens - Doubles walleriana</i>	Silhouette™	3 to 4	No	Optional	5.8-6.2	1.8-2.2	200	21-23 / 16-19	Optional	No

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Crop Time After Transplant					Pests & Diseases	PGR (S) spray (D) drench	Comments
125mm Pots	150mm Pots	200mm Pots	250mm Baskets	300mm Baskets			
6-7 weeks, 1 ppp	8-9 weeks, 1 ppp	10-11 weeks, 2 ppp	Not rec'd	Not rec'd	whitefly, thrips, basal stem rot, Botrytis	Alar(S) 2500 ppm; Alar+ CCC (S) 2500 + 1000 ppm; Avoid Florel sprays as burning can occur	Caritas like high light and warm temperatures to improve flowering and plant quality. Avoid overwatering on young plants. Plants can be double pinched for larger containers, but this will delay flowering.
6-7 weeks, 1 ppp	8-9 weeks, 1 ppp	11-12 weeks, 1 ppp	11-12 weeks, 3-4 ppp	12-13 weeks, 4-5 ppp	aphid, whitefly, leafminer	Alar+ CCC (S) 2500 + 1000 ppm; Bonzi (S) 5-10 ppm	Cool temperatures and high light will help make compact, fully bloomed plants. If grown cool, no PGRs are needed.
6-7 weeks, 1 ppp	8-9 weeks, 1 ppp	10-11 weeks, 2 ppp	11-12 weeks, 4 ppp	11-12 weeks, 5 ppp	aphids, whiteflies, thrips, fungal root rot,	B-9 (S) 1500 ppm; Florel (S) 200 ppm	Avoid overwatering and cold temperatures early which can lead to fungal root rot. Moderate to cool temperatures and high light during finishing will make full, bushy plants. Plants should be pinched twice for baskets and larger containers. An early Florel spray will enhance branching and delay flowering. Monitor media pH.
6-7 weeks, 1 ppp	8-9 weeks, 1 ppp	10-11 weeks, 2 ppp	11-12 weeks, 4 ppp	11-12 weeks, 5 ppp	aphids, whiteflies, thrips, Botrytis	Usually not needed	High light will improve plant quality. Lower temperatures delay flowering and make more compact plants while higher temperatures hasten flowering and make more upright plants. Watch for Botrytis in the crown of plants when overhead watering. Over fertilization (too much N) leads to large leaves and flowers down in the foliage. Fertilization can be eliminated 2 weeks before sale.
7-8 weeks, 1 ppp	9-10 weeks, 1 ppp	10-11 weeks, 2 ppp	12-13 weeks, 3-4 ppp	12-13 weeks, 4-5 ppp	aphid, thrips, fungal root rot	Florel (S) 350-500 ppm; Alar(S) 2500-5000 ppm; Bonzi (D) 2-4 ppm	Keep the pH down in the mid 5's to avoid tip yellowing --- drench with iron chelate if necessary. Avoid overwatering of young plants, however, avoid severe water stress when plants are mature. Plants should be pinched twice on baskets and larger containers. An early Florel spray improves branching.
6-7 weeks, 1 ppp	8-9 weeks, 1 ppp		11-12 weeks, 4 ppp	11-12 weeks, 5 ppp	Botrytis, powdery mildew, and basal stem rot	B-9 spray at 1500-2500 ppm if needed	Goldahlia™ Rose is slightly more vigorous than other colours in the series.
6-7 weeks, 1 ppp	8-9 weeks, 1 ppp	10-11 weeks, 2 ppp	11-12 weeks, 4 ppp	11-12 weeks, 5 ppp	whitefly, aphid	Alar(S) 2500 ppm; Bonzi (S) 5 ppm	Darlas are best when grown cool with high light. No PGR is needed when plants are grown cool. One pinch is all that is needed for this crop. Florel can be used early, but will severely delay flowering.
9-10 weeks, 1 ppp	11-12 weeks, 1 ppp	13-14 weeks, 2 ppp	13-14 weeks, 4 ppp	13-14 weeks, 5 ppp	aphid, mealybug, spider mite, whitefly, thrips	Usually not needed	Rios have a slow, controlled growth habit and were bred for improved branching. No pinching is usually needed. They make very nice quart products. High light and warm temperatures will improve quality and help reduce crop times. Watch for aphids.
	12 weeks, 1 ppp	16-18 weeks, 3 ppp			spider mite, whitefly	At final height.	
6-7 weeks, 1 ppp	8-9 weeks, 1 ppp	10-11 weeks, 2 ppp	11-12 weeks, 4 ppp	11-12 weeks, 5 ppp	aphid, thrips, leafminer, Botrytis, basal stem rot, INSV	Bonzi (S) 5-10 ppm; Bonzi (D) 0.5-1.0 ppm	Silhouettes generally don't need any pinching if cuttings are compact and well-branched. Florel can be used early, but is usually not needed. Avoid water and heat stress when the plants mature. A Bonzi drench during mid-late season can be used to keep the growth under control.

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Lavender <i>Lavandula stoechas</i>	Javelin™	5 to 7	Optional	No	5.8-6.2	1.8-2.2	200	17-23 / 15-17	Yes	Yes
Lobelia <i>erinus</i>	Techno™ & Techno™ Heat	3 to 4	Optional	Optional	5.8-6.2	1.8-2.2	200	21-23 / 16-19	Yes	No
Nemesia <i>frutescens</i>	Confec-tion™	4	No	Yes	5.6-6.0	1.8-2.2	200	17-22 / 12-15	Yes	No
Osteospermum <i>ecklonis</i>	Trade-winds™	3 to 4	Yes	Optional	5.8-6.2	2.0-2.5	200-250	19-23 / 10-16	Yes	No
Penstemon <i>hartwegii</i>	Phoenix™	3 to 4	No	Yes	5.8-6.2	2.0-2.5	200-250	19-23 / 12-16	Yes	No
Salvia <i>hybrida</i>	Mesa™	4	No	Yes	5.6-6.2	2.0-2.5	200 -250	25-29 / 15-17	Yes	No
Salvia <i>farinacea</i>	Velocity™	4	No	Yes	60 – 65°F	1.8 - 2.2	200	18-24 / 15-18	Yes	No
Scaevola <i>aemula</i>	Bombay®	3 to 4	Yes	Yes	Yes No	2.0-2.5	200-250	21-23 / 16-19	Yes	No
Verbena <i>hybrida</i>	Lanai™	3 to 4	No	Yes	5.8-6.2	2.0-2.5	200-250	21-23 / 19-21	Yes	No

Crop Time After Transplant					Pests & Diseases	PGR (S) spray (D) drench	Comments
125mm Pots	150mm Pots	200mm Pots	250mm Baskets	300mm Baskets			
6-7 weeks, 1 ppp	8-9 weeks, 1 ppp	9-10 weeks, 2 ppp	10-11 weeks, 4 ppp	10-11 weeks, 5 ppp	whitefly, botrytis, fungal root rot	Usually not needed	Lavenders are usually very slow to root and should be given plenty of time in propagation before transplant. Avoid cool temperatures and over-misting during propagation. Javelin is a compact grower and has a mounding habit. Plants finish faster under long days of late spring and early summer
6-7 weeks, 1 ppp	8-9 weeks, 1 ppp	10-11 weeks, 2 ppp	11-12 weeks, 4 ppp	11-12 weeks, 5 ppp	thrips, INSV, Botrytis, fungal root rot	Usually not needed.	Techno Blue is a fast grower that fills containers quickly. Pinch the plant 2-3 times or as needed for 150mm and larger containers. Avoid overwatering on young plants.
5-6 weeks, 1 ppp	7-8 weeks, 1 ppp	9-10 weeks, 2 ppp	10-11 weeks, 4 ppp	10-11 weeks, 5 ppp	aphids, thrips, botrytis, fungal root rot	Florel (S) 350 ppm; Alar(S) 2500ppm; Sumagic (S) 3ppm; Bonzi (S) 5ppm	Confection Nemesia are mounding, bushy plants that are best grown under cool days and high light. Plants can be pinched as needed and will come back in flower relatively quickly. Watch for Botrytis in the crown of plants when overhead watering. Confections are great items for early spring holiday sales. All have flowers with a pleasantly sweet scent.
7-8 weeks, 1 ppp	9-10 weeks, 1 ppp	11-12 weeks, 1-2 ppp	12-13 weeks, 3-4 ppp	12-13 weeks, 4-5 ppp	aphid, whitefly, thrips, fungal root rot	Alar+ CCC (S) 2500 + 1000 ppm	Although Tradewinds were bred to flower at higher temperatures, cool temperatures and high light will help make the highest quality plants. If grown cool, no PGRs are needed. One pinch is rec'd to make fully branched plants.
7-8 weeks, 1 ppp	9-10 weeks, 1 ppp	11-12 weeks, 1-2 ppp	Not rec'd	Not rec'd	aphid, thrips, basal stem rot	Alar(S) 2500 ppm; CCC (S) 1000 ppm; Alar+ CCC (S) 2500 + 1000 ppm	Phoenix penstemons are vigorous, upright growing plants. Use PGRs as necessary to keep plants under control. Avoid using Florel since this will severely delay flowering. Plants need 1 early pinch, but can also be pinched again later for larger containers. Keep the plants well-fed to maintain dark healthy leaves.
6-7, weeks 1 ppp	8-9, weeks 1 ppp	9-10 weeks, 1-2 ppp	10 -11 weeks, 3-4 ppp	10-11 weeks, 4-5 ppp	whitefly, botrytis, fungal root rot	B-9 (S) 1500-2500ppm; Bonzi (D) 0.5-1ppm	Mesa Salvia are salvia hybrids that were bred for bushy, well-branched habits. They have a mounding, bushy habit. Plants can be given a second pinch when grown in larger containers. Watch for Botrytis when overhead irrigating and under tight spacing. Make sure to let the media dry between irrigations.
3 - 4 ppp	7-8 weeks, 1-2 ppp	8-9 weeks, 1-2 ppp	9-10 weeks, 4 ppp	9-10 weeks, 4-5 ppp	Whiteflies, Botrytis and fungal root rot	B-9 (2500 ppm) + Cycocel (1000 ppm) spray only if needed	Don't use Florel on this variety as stunting and severe flower delay will occur.
6-7 weeks, 1 ppp	8-9 weeks, 1 ppp	10-11 weeks, 2 ppp	11-12 weeks, 3-4 ppp	11-12 weeks, 4-5 ppp	whitefly, thrips		Bombay Scaevolae like high light and warm temperatures. Too low of temperatures, especially early on, can lead to root rot and dark purple foliage. Plants can be pinched twice for baskets and larger containers. PGRs are generally not needed, especially on Bombay Blue. Florel will severely delay flowering.
10 - 11,	8-9 weeks, 1 ppp	10-11 weeks, 2 ppp	11-12 weeks, 3-4 ppp	11-12 weeks, 4-5 ppp	thrips, aphid, whitefly, powdery mildew	Florel (S) 350-500 ppm; Alar(S) 2500 ppm	Lanai are moderate growers and some PGR might be needed to keep them under control. Plants can be pinched as needed for baskets and larger containers. Watch for insects on verbenas. Don't let the media pH to get too high or iron deficiency can occur.