




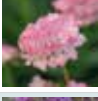





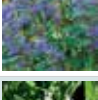
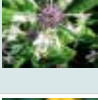





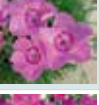



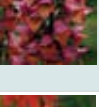







Darwin Perennials Finishing Guide

PAGE	CROP	SERIES/ VARIETY	MEDIA PH	TEMPERATURE	DAYLENGTH	VERNALIZATION REQUIRED	LIGHT LEVELS IN FOOT CANDLES	WATERING	FERTILIZATION	PINCHING AFTER TRANSPLANT	PLANT GROWTH REGULATORS	PESTS AND FUNGAL DISEASES	CROP SCHEDULE & USES						
													1-QT. (10-CM) POT, 1 PLANT PER POT	1-GAL. (15-CM) POT, 1 PLANT PER POT	2 TO 3-GAL. (25 TO 30-CM) POT, 3 PLANTS PER POT	HEIGHT	USDA HARDINESS ZONES	BLOOM MONTHS	
8	 ACHILLEA <i>Achillea hybrida</i>	Moon Dust	5.8-6.2	Nights: 55 to 65°F (13 to 18°C) Days: 60 to 65°F (16 to 18°C)	Long day facultative	No	5,000 to 8,000	Allow media to dry regularly between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.		Recommended	PGRs generally not needed	Pythium and Rhizoctonia can result from overwatering.	Unrooted: 13-15 wks Rooted: 8-10 wks	Unrooted: 15-17 wks Rooted: 10-12 wks	Unrooted: 19-22 wks Rooted: 12-14 wks	12-14 in. (30-36 cm)	5-8	June to July
10	 ACHILLEA <i>Achillea millefolium</i>	New Vintage™ Series	5.8-6.2	Nights: 55 to 65°F (13 to 18°C) Days: 60 to 65°F (16 to 18°C)	Long day facultative	No	5,000 to 8,000	Allow media to dry regularly between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.		Generally not required.	PGRs generally not needed	Pythium and Rhizoctonia can result from overwatering.	Unrooted: 13-15 wks Rooted: 8-10 wks	Unrooted: 15-17 wks Rooted: 10-12 wks	Unrooted: 19-22 wks Rooted: 12-14 wks	12-14 in. (30-36 cm)	4-9	June to July
12	 ACHILLEA <i>Achillea millefolium</i>	Song Siren™ Series	5.8-6.2	Nights: 55 to 65°F (13 to 18°C) Days: 60 to 65°F (16 to 18°C)	Long day facultative	No	5,000 to 8,000	Allow media to dry regularly between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.		Generally not required.	PGRs generally not needed	Pythium and Rhizoctonia can result from overwatering.	Unrooted: 13-15 wks Rooted: 8-10 wks	Unrooted: 15-17 wks Rooted: 10-12 wks	Unrooted: 19-22 wks Rooted: 12-14 wks	20-22 in. (51-56 cm)	4-9	June to July
13	 AGASTACHE <i>Agastache rugosa</i>	Little Adder	5.8-6.2	Nights: 50 to 55°F (10 to 13°C) Days: 60 to 65°F (16 to 18°C)	Long day facultative	No	3,000 to 5,000	Allow media to dry regularly between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.		Recommended	PGRs generally not needed	Thrips, white fly	Not recommended	Unrooted: 15-17 wks Rooted: 10-12 wks	Unrooted: 19-22 wks Rooted: 12-14 wks	15-18 in. (38-46 cm)	5-9	June to September
16	 ALYSSUM <i>Alyssum wulfenianum</i>	Golden Spring	5.8-6.2	Nights: 55 to 65°F (13 to 18°C) Days: 60 to 65°F (16 to 18°C)	Day length neutral	Yes	5,000 to 8,000	Allow media to dry slightly between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.		Recommended	PGRs generally not needed	None noted	Unrooted: stick week 30-35 Rooted: plant week 35-40	Unrooted: stick week 26-32 Rooted: plant week 31-36	Unrooted: stick week 22-26 Rooted: plant week 27-31	6-8 in. (15-20 cm)	4-9	April to May
17	 ARMERIA <i>Armeria pseudoarmeria</i>	Dreameria™ Series	5.8-6.2	Nights: 55°F (13°C) Days: 68°F (20°C)	Day length neutral	No	3,000 to 5,000	Moderate	Use a balanced fertilizer at a rate of 150 to 175 ppm N.		None	PGRs generally not needed	Watch for crown rot if overwatered	10-12 wks	14-16 wks	16-18 wks	10-12 in. (25-30 cm)	6-9	March to October
19	 BUDDLEIA <i>Buddleia davidii</i>	Berry Fizz	5.5-6.2	Nights: 55 to 65°F (13 to 18°C) Days: 60 to 65°F (16 to 18°C)	Long day facultative	No	5,000 to 8,000	Allow media to dry slightly between watering.	Use a balanced fertilizer at a rate of 150 to 175 ppm N.		Recommended	PGRs generally not needed	Aphids, thrips, spider mites	Not recommended	Unrooted: 20-22 wks Rooted: 14-16 wks	Unrooted 22-24 wks Rooted: 16-18 wks	48-60 in. (122-152 cm)	5-10	May to September
21	 BUDDLEIA <i>Buddleia davidii</i>	CranRazz	5.5-6.2	Nights: 55 to 65°F (13 to 18°C) Days: 60 to 65°F (16 to 18°C)	Long day facultative	No	5,000 to 8,000	Allow media to dry slightly between watering.	Use a balanced fertilizer at a rate of 150 to 175 ppm.		Recommended	PGRs generally not needed	Aphids, thrips, spider mites	Not recommended	Unrooted: 20-22 wks Rooted: 14-16 wks	Unrooted: 22-24 wks Rooted: 16-18 wks	60-72 in. (152-183 cm)	5-10	May to September
20	 BUDDLEIA <i>Buddleia davidii</i>	True Blue	5.5-6.2	Nights: 55 to 65°F (13 to 18°C) Days: 60 to 65°F (16 to 18°C)	Long day facultative	No	5,000 to 8,000	Allow media to dry slightly between watering.	Use a balanced fertilizer at a rate of 150 to 175 ppm.		Recommended	PGRs generally not needed	Aphids, thrips, spider mites	Not recommended	Unrooted: 20-22 wks Rooted: 14-16 wks	Unrooted 22-24 wks Rooted: 16-18 wks	61-73 in. (155-185 cm)	5-10	May to September
20	 BUDDLEIA <i>Buddleia hybrida</i>	Blaze Pink	5.5-6.2	Nights: 55 to 65°F (13 to 18°C) Days: 60 to 65°F (16 to 18°C)	Long day facultative	No	5,000 to 8,000	Allow media to dry slightly between watering.	Use a balanced fertilizer at a rate of 150 to 175 ppm.		Recommended	PGRs generally not needed	Aphids, thrips, spider mites	Not recommended	Unrooted: 20-22 wks Rooted: 14-16 wks	Unrooted 22-24 wks Rooted: 16-18 wks	62-74 in. (157-188 cm)	5-10	May to September
24	 CAMPANULA <i>Campanula x hybrida</i>	Iridescent Bells	5.8-6.2	Nights: 50 to 55°F (10 to 13°C) Days: 60 to 65°F (16 to 18°C)	Long day obligate	Beneficial for bulking.	3,500 to 4,000	Allow media to dry evenly between watering.	Use a balanced fertilizer at a rate of 150 to 175 ppm.		None	PGRs generally not needed	Aphid, spider mite, leaf spots, Rhizoctonia crown rot	Not recommended	Unrooted: 20-22 wks Rooted: 14-16 wks	Unrooted 22-24 wks Rooted: 16-18 wks	24-30 in. (61-76 cm)	5-8	April to September
24	 CARYOPTERIS <i>Caryopteris clandonensis</i>	Grand Bleu®	5.8-6.2	Nights: 55 to 65°F (13 to 18°C) Days: 65 to 75°F (18 to 24°C)	Long day obligate	No	5,000 to 8,000	Allow media to dry regularly between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.		None	PGRs generally not needed	Spider mite	Not recommended	Rooted: 12 to 14 wks	Rooted: 14 wks	48 in. (122 cm)	6-9	August to October
25	 CENTAUREA <i>Centaurea montana</i>	Lavender Mist	5.8-6.2	Nights: 45 to 50°F (7 to 10°C) Days: 55 to 60°F (13 to 16°C)	Day length neutral	Beneficial for heavier Spring flowering.	3,000 to 5,000	Allow media to dry regularly between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.		None	PGRs generally not needed	Thrips, white fly, spider mites. Can be sensitive to crown and root rot when overwatered.	Not recommended	Unrooted: Plant by week 35 (North), week 40 (South) Rooted: Stick by week 30 (North), week 35 (South)	Unrooted: Plant by week 32 (North), week 37 (South) Rooted: Stick by week 28 (North), week 32 (South)	16-18 in. (41-46 cm)	4-9	April to June
26	 COREOPSIS <i>Coreopsis grandiflora</i>	Sunny Day	5.8-6.2	Nights: 55 to 60°F (13 to 16°C) Days: 60 to 65°F (16 to 18°C)	Long day obligate	No	5,000 to 8,000	Allow media to dry evenly between watering.	Maintain constant fertilization at 150 to 200 ppm N.		Recommended	B-Nine 1,500 ppm/Cycocel 800 ppm tank mix for height control	Keep good air movement to control powdery mildew.	Not recommended	Unrooted: 15-17 wks Rooted: 10-12 wks	Unrooted: 19-22 wks Rooted: 12-14 wks	18-24 in. (46-61 cm)	4-9	June to September
27	 COREOPSIS <i>Coreopsis hybrida</i>	Little Bird	5.8-6.2	Days: 55 to 80°F (13 to 27°C)	Long day obligate	No	5,000 to 8,000	Allow media to dry evenly between watering.	Maintain constant fertilization at 150 to 200 ppm N.		Recommended	PGRs generally not needed	Manage soil moisture to avoid root diseases. Keep good air movement to control powdery mildew. Aphids	Unrooted: 13-15 wks Rooted: 8-10 wks	Unrooted: 15-17 wks Rooted: 10-12 wks	Unrooted: 19-22 wks Rooted: 12-14 wks	12-14 in. (30-36 cm)	5-9	June to September














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													1-QT. (10-CM) POT, 1 PLANT PER POT	1-GAL. (15-CM) POT, 1 PLANT PER POT	2 TO 3-GAL. (25 TO 30-CM) POT, 3 PLANTS PER POT	HEIGHT	USDA HARDINESS ZONES	BLOOM MONTHS	
*	 COREOPSIS <i>Coreopsis hybrida</i>	UpTick™ Series	5.8-6.2	Nights: 55 to 70°F (13 to 21°C) Days: 60 to 80°F (15 to 27°C)	Day length neutral	No	3,000 to 5,000	Allow media to dry moderately between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.		Yes	PGRs generally not needed	Spider mites	Not recommended	Rooted: 10-12 wks	Rooted: 12-14 wks	12-14 in. (30-36 cm)	5-9	March to November
26	 COREOPSIS <i>Coreopsis verticillata</i>	Crème Caramel	5.8-6.2	Days: 55 to 80°F (13 to 27°C)	Long day obligate	Beneficial to enhance bulking and plant size.	5,000 to 8,000	Allow media to dry moderately between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.		Recommended	PGRs generally not needed	Powdery mildew, aphids	Not recommended	Unrooted: 15-17 wks Rooted: 10-12 wks	Unrooted: 19-22 wks Rooted: 12-14 wks	18 in. (46 cm)	5-9	May to July
27	 COREOPSIS <i>Coreopsis verticillata</i>	Sylvester	5.8-6.2	Days: 55 to 80°F (13 to 27°C)	Long day obligate	No	5,000 to 8,000	Allow media to dry evenly between watering.	Maintain constant fertilization at 150 to 200 ppm N.		Recommended	PGRs generally not needed	Manage soil moisture to avoid root diseases.	Unrooted: 13-15 wks Rooted: 8-10 wks	Unrooted: 15-17 wks Rooted: 10-12 wks	Unrooted: 19-22 wks Rooted: 12-14 wks	16-20 in. (41-51 cm)	4-9	June to September
**	 DIANTHUS <i>Dianthus hybrida</i>	Mountain Frost™ Pink Carpet, Pink PomPom, Pink Twinkle	5.8-6.2	45-60°F (7-16°C)	Day length neutral	Beneficial for an increased quantity of Spring blooms.	3,000 to 5,000	Low to moderate	Use a balanced fertilizer at a rate of 125 to 150 ppm N.		None	Not necessary.	Not particularly sensitive	18-20 wks, including 6 wks below 50°F (10°C)	18-20 wks, including 6 wks below 50°F (10°C)	Not recommended	6-8 in. (15-20 cm)	5-9	March to October
**	 DIANTHUS <i>Dianthus hybrida</i>	Mountain Frost™ Rose Bouquet	5.8-6.2	45-60°F (7-16°C)	Day length neutral	Beneficial for an increased quantity of Spring blooms.	3,000 to 5,000	Low to moderate	Use a balanced fertilizer at a rate of 125 to 150 ppm N.		None	Not necessary.	Not particularly sensitive	18-20 wks, including 6 wks below 50°F (10°C)	20-22 wks, including 6 wks below 50°F (10°C)	Not recommended	10-12 in. (25-30 cm)	5-9	March to October
**	 DIANTHUS <i>Dianthus hybrida</i>	Mountain Frost™ Silver Strike	5.8-6.2	45-60°F (7-16°C)	Day length neutral	Beneficial for an increased quantity of Spring blooms.	3,000 to 5,000	Low to moderate	Use a balanced fertilizer at a rate of 125 to 150 ppm N.		None	Not necessary.	Not particularly sensitive	18-20 wks, including 6 wks below 50°F (10°C)	18-20 wks, including 6 wks below 50°F (10°C)	Not recommended	8-10 in. (20-25 cm)	5-9	March to October
**	 DIANTHUS <i>Dianthus hybrida</i>	Mountain Frost™ White Twinkle	5.8-6.2	45-60°F (7-16°C)	Day length neutral	Beneficial for an increased quantity of Spring blooms.	3,000 to 5,000	Low to moderate	Use a balanced fertilizer at a rate of 125 to 150 ppm N.		None	Not necessary.	Not particularly sensitive	18-20 wks, including 6 wks below 50°F (10°C)	18-20 wks, including 6 wks below 50°F (10°C)	Not recommended	5-6 in. (13-15 cm)	5-9	March to October
31	 DIGITALIS <i>Digitalis hybrida</i>	Foxlight™ Series	5.8-6.2	Nights: 55 to 60°F (13 to 16°C) Days: 60 to 65°F (16 to 18°C)	Long day facultative	Beneficial; needed for early flowering. Not needed for Summer flowering.	3,000 to 5,000	Allow media to dry moderately between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.		Recommended	PGRs generally not needed	Aphids, white fly, spider mites	Not recommended	12-14 wks	12-14 wks	22-24 in. (56-61 cm)	7-10	April to September; Natural season flowering
**	 ECHINACEA <i>x hybrida</i>	Double Scoop™ Series	5.8-6.2	Nights: 55 to 60°F (13 to 16°C) Days: 60 to 65°F (16 to 18°C)	Long day obligate	No	3,500 to 5,000	Allow media to dry moderately between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.		None	None	None noted	14-16 wks Spring plant 11-13 wks Summer plant for Fall	14-16 wks Spring plant 11-13 wks Summer plant for Fall	14-16 wks Spring plant 11-13 wks Summer plant for Fall	22-24 in. (56-60 cm)	4-9	June to August
**	 ECHINACEA <i>x hybrida</i>	Sombrero® Series	5.8-6.2	60 to 68°F (16 to 20°C)	Long day obligate	No	5,000 to 8,000	Allow media to dry moderately between watering.	Use a balanced fertilizer at a rate of 150 to 175 ppm N.		Only to remove premature flower buds.	Not recommended. 300 ppm Configure 2 weeks after transplant when greenhouse grown will reduce overall plant height	Not particularly sensitive. Use well-drained media.	Not recommended	10-12 wks	12-14 wks	22-24 in. (56-60 cm)	4-9	June to August
34	 ERYSIMUM <i>Erysimum linifolium</i>	Bowles Me Away	5.8-6.2	50 to 60°F (10 to 16°C)	Day length neutral	No	3,000 to 5,000	Low to moderate	150-175 ppm N		Yes, a second pinch is often beneficial.	Sumagic 5-10 ppm spray	Watch for bacterial infections	6-8 wks	10-12 wks	12-14 wks	12-16 in. (30-41 cm)	6-8	March to September
32	 ERYSIMUM <i>Erysimum linifolium</i>	Cheers™ Series	5.8-6.2	50 to 60°F (10 to 16°C)	Day length neutral	No	3,000 to 5,000	Low to moderate	150 to 175 ppm N		Yes, a second pinch is often beneficial	Sumagic 5-10 ppm spray	Watch for bacterial infections	6-8 wks	10-12 wks	12-14 wks	18-22 in. (46-56 cm)	7-10	March to September
35	 EUPATORIUM <i>Eupatorium dubium</i>	Little Joe	5.8-6.2	Nights: 55 to 65°F (13 to 18°C) Days: 65 to 75°F (18 to 24°C)	Long day obligate	No	5,000 to 8,000	Allow media to dry moderately between watering. Prefers moist soils.	Use a balanced fertilizer at a rate of 125 to 150 ppm.		Recommended	Concise/ Sumagic 30- 60 ppm spray	None noted	Not recommended	Rooted: 20 wks	Rooted: 20 wks	36-48 in. (91-122 cm)	3-9	August to September















* See DarwinPerennials.com

** See front section






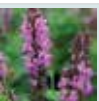





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													1-QT. (10-CM) POT, 1 PLANT PER POT	1-GAL. (15-CM) POT, 1 PLANT PER POT	2 TO 3-GAL. (25 TO 30-CM) POT, 3 PLANTS PER POT	HEIGHT	USDA HARDINESS ZONES	BLOOM MONTHS	
35	 EUPHORBIA <i>Euphorbia amygdaloides</i>	Red Velvet	5.6-6.5	Nights: 50 to 55°F (10 to 13°C) Days: 55 to 60°F (13 to 16°C)	Short day obligate	Beneficial; aids bulking.	3,000 to 5,000	Allow media to dry regularly between watering.	Use a balanced fertilizer at a rate of 100 to 125 ppm.		Recommended	PGRs generally not needed	Watch for powdery mildew in Fall. White fly, spider mites	Unrooted: 14-16 wks Rooted: 8-10 wks	Unrooted: 16-19 wks Rooted: 10-12 wks	Unrooted: 19-22 wks Rooted: 12-14 wks	18-20 in. (46-51 cm)	6-10	March to May
39	 GAURA <i>Gaura lindheimeri</i>	Ballerina™ Series, Belleza™ Series	5.8-6.2	Nights: 56 to 61°F (13 to 16°C) Days: 71 to 76°F (21 to 24°C)	Day length neutral	No	5,000 to 9,000	Allow media to dry slightly between watering.	Maintain constant fertilization at 175 to 225 ppm N.		Recommended	PGRs generally not needed	Pythium, Rhizoctonia, Botrytis	Unrooted: 10-13 wks Rooted: 7-10 wks	Unrooted: 12-15 wks, 2-3 ppp Rooted: 9-12 wks, 2-3 ppp	Unrooted: 14-16 wks, 3-5 ppp Rooted: 11-13 wks, 3-5 ppp	12-18 in. (30-46 cm)	6-9	Ballerina: April to September. Belleza: May to September
40	 GAURA <i>Gaura lindheimeri</i>	Little Janie, Whiskers Deep Rose	5.8-6.2	Nights: 50 to 55°F (10 to 13°C) Days: 55 to 60°F (13 to 16°C)	Day length neutral	No	3,000 to 5,000	Allow media to dry regularly between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.		Recommended	PGRs generally not needed	Spider mites, aphids	Unrooted: 12-14 wks Rooted: 8-10 wks	Unrooted: 15-17 wks Rooted: 10-12 wks	Unrooted: 19-22 wks Rooted: 12-14 wks	Little Janie: 16-18 in. (41-46 cm) Whiskers Deep Rose: 14-16 in. (36-41cm)	6-9	April to September
42	 HELIANTHUS <i>Helianthus salicifolius</i>	Autumn Gold	5.8-6.2	55 to 70°F (13 to 21°C)	Short day obligate	No	5,000 to 8,000	Low to moderate	Use a balanced fertilizer at a rate of 150 ppm N		Typically not necessary if plants were pinched in the liner.	Typically not necessary	Very pest and disease resistant	Not recommended	12-14 wks. Plant week 22-26	12-14 wks. Plant week 22-26	24-26 in. (61-66 cm)	5-10	September to November
43, 46	 HELIOPSIS <i>Heliosis helianthoides</i>	Double Sunstruck, Sunstruck	5.8-6.2	Nights: 55 to 65°F (13 to 18°C) Days: 65 to 75°F (18 to 24°C)	Long day obligate	Beneficial; aids in bulking.	5,000 to 8,000	Allow media to dry slightly between watering.	Use a balanced fertilizer at a rate of 150 to 175 ppm.		Recommended	PGRs generally not needed	Pythium and Rhizoctonia can result from overwatering. Thrips, white fly, aphids	Unrooted: 14-16 wks Rooted: 8-10 wks	Unrooted: 16-19 wks Rooted: 10-12 wks	Unrooted: 19-22 wks Rooted: 12-14 wks	14-16 in. (36-41 cm)	4-9	Double Sunstruck: May to July Sunstruck: June to August
4	 HEUCHERA <i>Heuchera x hybrida</i>	Carnival Series	5.8-6.2	Nights: 50 to 55°F (10 to 13°C) Days: 60 to 65°F (16 to 18°C)	Day length neutral	No	1,500 to 2,500	Allow media to dry slightly between watering.	Use a balanced fertilizer at a rate of 100 to 125 ppm.		None	PGRs generally not needed	Pythium and Rhizoctonia can result from overwatering.	Unrooted: 13-15 wks Rooted: 8-10 wks	Unrooted: 15-17 wks Rooted: 10-12 wks	Unrooted: 19-22 wks Rooted: 12-14 wks	10-12 in. (25-30 cm)	4-9	April to May
47	 IBERIS <i>Iberis amara</i>	White Heat	5.8-6.2	Nights: 45 to 55°F (7 to 13°C) Days: 55 to 65°F (13 to 18°C)	Day length neutral	No	3,000 to 5,000	Allow media to dry regularly between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.		Recommended	PGRs generally not needed	May experience root rot diseases under poor growing conditions. Aphids	Unrooted: 10-14 wks Rooted: 8-10 wks	Unrooted: 16-18 wks Rooted: 10-12 wks	Unrooted: 19-22 wks Rooted: 12-14 wks	8-10 in. (20-25 cm)	7-10	January to August
47	 IBERIS <i>Iberis gibraltarica</i>	Lavish	5.8-6.2	Nights: 45 to 55°F (7 to 13°C) Days: 55 to 65°F (13 to 18°C)	Day length neutral	Yes	3,000 to 5,000	Allow media to dry regularly between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.		Recommended	PGRs generally not needed	Aphids	Unrooted: 10-14 wks Rooted: 8-10 wks	Unrooted: 16-18 wks Rooted: 10-12 wks	Unrooted: 19-22 wks Rooted: 12-14 wks	10-12 in. (25-30 cm)	6-9	April to August
48	 IBERIS <i>Iberis sempervirens</i>	Snowsation	5.8-6.2	45-60°F (7-16°C)	Day length neutral	Yes	3,000 to 5,000	Low to moderate	Use a balanced fertilizer at a rate of 150 to 175 ppm N.		Only if pinching not done in the liner stage.	Not typically needed	Not particularly sensitive	24 wks; requires vernalization	24 wks; requires vernalization	Not recommended	6-8 in. (15-20 cm)	4-9	March to April
51	 LAVANDULA <i>Lavandula angustifolia</i>	SuperBlue	5.9-6.2	Nights: 55 to 65°F (13 to 18°C) Days: 65 to 75°F (18 to 24°C)	Long day facultative	No	5,000 to 8,000	Allow media to dry slightly between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.		Once for smaller pot sizes, twice for larger containers	PGRs generally not needed	Thielaviopsis, Pythium and Rhizoctonia can result from overwatering. Thrips, white fly, aphids, fungus gnats	Unrooted: 14-16 wks Rooted: 7-8 wks	Unrooted: 16-19 wks Rooted: 9-11 wks	Unrooted: 19-22 wks Rooted: 12-14 wks	10-12 in. (25-30 cm)	5-8	June to August
53, 54	 LAVANDULA <i>Lavandula stoechas</i>	Anouk Series, Bright Luxurious, Luxurious	5.8-6.2	Nights: 56 to 64°F (13 to 18°C) Days: 65 to 76°F (18 to 24°C)	Day length neutral	Beneficial for earlier flowering and more blooms.	5,000 to 8,000	Allow media to dry slightly between watering.	Use a balanced fertilizer at a rate of 100 to 125 ppm.		Recommended	PGRs generally not needed	Thielaviopsis, Pythium and Rhizoctonia can result from overwatering. Thrips, white fly, aphids, fungus gnats	7-10 wks	9-11 wks, 1-3 ppp	10-12 wks, 3-5 ppp	14-18 in. (36-46 cm) Silver Anouk: 20-24 in. (51-61 cm)	6-9	Anouk: March to September Bright Luxurious, Luxurious: March to July
57	 LEUCANTHEMUM <i>Leucanthemum x superbum</i>	Santé	5.8-6.2	Nights: 55 to 65°F (13 to 18°C) Days: 60 to 65°F (16 to 18°C)	Long day obligate	Beneficial for bulking and earlier flowering.	5,000 to 8,000	Allow media to dry slightly between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.		Recommended	PGRs generally not needed	Watch for leaf spots when growing in wet conditions.	Not recommended	Unrooted: 15-17 wks Rooted: 10-12 wks	Unrooted: 19-22 wks Rooted: 12-14 wks	22-26 in. (56-66 cm)	4-9	June to August
56	 LEUCANTHEMUM <i>Leucanthemum x superbum</i>	White Magic	5.8-6.2	55 to 65°F (13 to 18°C)	Long day facultative	No	5,000 to 8,000	Moderate. More required when in flower.	Use a balanced fertilizer at a rate of 150 to 200 ppm N.		Generally not necessary.	B-Nine/ Cycocel at 1,800/800 will reduce plant height	Watch for Aphids when in bud	Not recommended	8-10 wks from rooted liner	10-12 wks from rooted liner	20-24 in. (51-61 cm)	5-9	May to August

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													1-QT. (10-CM) POT, 1 PLANT PER POT	1-GAL. (15-CM) POT, 1 PLANT PER POT	2 TO 3-GAL. (25 TO 30-CM) POT, 3 PLANTS PER POT	HEIGHT	USDA HARDINESS ZONES	BLOOM MONTHS
6	 MISCANTHUS <i>Miscanthus sinensis</i>	Bandwidth	5.8-6.5	65 to 75°F (18 to 24°C)	Long day facultative	No	5,000 to 8,000	Low to moderate	Low	No	None	Rust resistant	8-10 wks	14-16 wks	20-24 wks, 1 plant per pot	30 to 36 in. (76 to 91 cm)	5-9	October to November
6	 MISCANTHUS <i>Miscanthus sinensis</i>	My Fair Maiden	5.8-6.5	65 to 75°F (18 to 24°C)	Short day obligate	No	5,000 to 8,000	Low to moderate	Low	No	None required	Rust resistant	8-10 wks	14-16 wks	20-24 wks, 1 plant per pot	72 to 102 in. (183 to 259 cm)	5-9	October to November
60	 MONARDA <i>Monarda didyma</i>	Balmy™ Series	5.8-6.2	Nights: 55 to 65°F (13 to 18°C) Days: 60 to 65°F (16 to 18°C)	Long day obligate	Beneficial; aids in bulking and early flowering.	5,000 to 8,000	Allow media to dry slightly between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.	Recommended	PGRs generally not needed	Powdery mildew may be present if grown under poor air circulation and high humidity. White fly, spider mites	Unrooted: 12-14 wks Routed: 8-10 wks	Unrooted: 14-16 wks Routed: 10-12 wks	Unrooted: 14-16 wks Routed: 12-14 wks	10-12 in. (25-30 cm)	4-9	June to July
63	 NEPETA <i>Nepeta x faassenii</i>	Junior Walker	5.8-6.2	Nights: 55 to 70°F (13 to 21°C) Days: 60 to 80°F (15 to 27°C)	Long day facultative	No	5,000 to 8,000	Allow media to dry moderately between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.	Recommended	PGRs generally not needed	White fly	Unrooted: 10-14 wks Routed: 8-10 wks	Unrooted: 15-17 wks Routed: 10-12 wks	Unrooted: 19-22 wks Routed: 12-14 wks	18 in. (46 cm)	5-8	May to September
66	 PENSTEMON <i>Penstemon barbatus</i>	Rock Candy® Series	5.8-6.2	Nights: 55 to 70°F (13 to 21°C) Days: 60 to 80°F (15 to 27°C)	Long day facultative	No	3,000 to 5,000	Allow media to dry moderately between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.	Yes	PGRs generally not needed	Spider mites	Unrooted: 10-14 wks Routed: 8-10 wks	Unrooted: 15-17 wks Routed: 10-12 wks	Unrooted: 19-22 wks Routed: 12-14 wks	12 in. (30 cm)	6-8	June to September
70	 PENSTEMON <i>Penstemon hybrida</i>	Little Bells	5.8-6.2	Nights: 55 to 70°F (13 to 21°C) Days: 60 to 80°F (15 to 27°C)	Long day facultative	No	3,000 to 5,000	Allow media to dry moderately between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.	Yes	PGRs generally not needed	Spider mites	Unrooted: 10-14 wks Routed: 8-10 wks	Unrooted: 15-17 wks Routed: 10-12 wks	Unrooted: 19-22 wks Routed: 12-14 wks	16 in. (41 cm)	6-9	June to July
69	 PENSTEMON <i>Penstemon hybrida</i>	Quartz® Amethyst, Quartz® Rose	5.8-6.2	Nights: 55 to 70°F (13 to 21°C) Days: 60 to 80°F (15 to 27°C)	Long day obligate	No	3,000 to 5,000	Allow media to dry moderately between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.	Yes	PGRs generally not needed	Spider mites	Not recommended	Unrooted: 19-22 wks Routed: 12-14 wks	Unrooted: 21-23 wks Routed: 14-16 wks	20-24 in. (51-61 cm)	6-9	July to August
68	 PENSTEMON <i>Penstemon hybrida</i>	Cherry Sparks	5.8-6.2	Nights: 55 to 70°F (13 to 21°C) Days: 60 to 80°F (15 to 27°C)	Long day facultative	No	3,000 to 5,000	Allow media to dry moderately between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.	Yes	PGRs generally not needed	White fly, spider mites	Not recommended	Routed: 10-12 wks	Routed: 12-14 wks	18-20 in. (46-51 cm)	5-9	May to August
68	 PENSTEMON <i>Penstemon hybrida</i>	MissionBells™ Deep Rose	5.8-6.2	Nights: 45 to 70°F (7 to 21°C) Days: 55 to 80°F (13 to 27°C)	Long day obligate	No	3,000 to 5,000	Allow media to dry moderately between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.	Yes	PGRs generally not needed	White fly, spider mites	Not recommended	Routed: 10-12 wks	Routed: 12-14 wks	20-24 in. (51-61 cm)	5-9	June to August
72, 73	 PEROVSKIA <i>Perovskia atriplicifolia</i>	CrazyBlue, Little Lace	5.8-6.2	Nights: 55 to 65°F (13 to 18°C) Days: 60 to 65°F (16 to 18°C)	Long day obligate	No	5,000 to 8,000	Allow media to dry slightly between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.	Recommended	PGRs generally not needed	Pythium can be a problem if overwatered. White fly, spider mites	Not recommended	Unrooted: 14-16 wks Routed: 10-12 wks	Unrooted: 14-16 wks Routed: 10-12 wks	Crazy Blue: 16-18 in. (41-46 cm) Little Lace: 18-24 in. (46-61 cm)	4-9	Crazy Blue: July to August Little Lace: July to September
76	 PHLOX <i>Phlox paniculata</i>	Cherry Cream	5.8-6.2	60 to 75°F (16 to 24°C)	Long day obligate	No	5,000 to 8,000	Moderate	Use a balanced fertilizer at a rate of 150 to 200 ppm N.	Yes, in cases where there are two or less shoots.	Configure at 600 ppm to increase branching.	Powdery Mildew when pressure is high	Not recommended	10-12 wks from rooted liner	12-14 wks from rooted liner. Plant 3 ppp.	22-26 in. (56-66 cm)	4-9	June to August
81	 RHODANTHEMUM <i>Rhodanthemum hosmariense</i>	Casablanca, Marrakech	5.8-6.2	Nights: 45 to 50°F (7 to 10°C) Days: 55 to 60°F (13 to 16°C)	Day length neutral	Beneficial: increases Spring flowering.	3,500 to 5,000	Allow media to dry regularly between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.	Recommended	B-Nine 1,500 ppm/Cycocel. 800 ppm tank mix will reduce petiole stretch.	White fly, spider mites, Botrytis	Unrooted: 15-17 wks Routed: 10-12 wks	Unrooted: 16-18 wks, 1 ppp Routed: 12-14 wks	Unrooted: 16-18 wks, 3 ppp Routed: 12-14 wks	Casablanca: 10-12 in. (25-30 cm) Marrakech: 12-14 in. (30-36 cm)	8-10	March to May and September to October
84	 SALVIA <i>Salvia greggii</i>	Mirage™ Series	5.8-6.2	Nights: 55 to 70°F (13 to 21°C) Days: 60 to 80°F (15 to 27°C)	Day length neutral	No	3,000 to 5,000	Allow media to dry moderately between watering.	Use a balanced fertilizer at a rate of 150 to 175 ppm N.	Yes	Generally not needed.	Whitefly, thrips	Routed: 6-8 wks	Routed: 8-10 wks	Routed: 12-14 wks	12-14 in. (30-36 cm)	7-9	March to September
87	 SALVIA <i>Salvia greggii</i>	Radio Red	5.8-6.2	Nights: 45 to 70°F (7 to 21°C) Days: 55 to 80°F (13 to 27°C)	Day length neutral	No	5,000 to 8,000	Allow media to dry moderately between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.	Once for smaller pot sizes, twice for larger containers	PGRs generally not needed	White fly, spider mites	Unrooted: 12-14 wks Routed: 8-10 wks	Unrooted: 14-16 wks Routed: 10-12 wks	Unrooted: 16-18 wks Routed: 12-14 wks	16-18 in. (41-46 cm)	7-10	March to September

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													1-QT. (10-CM) POT, 1 PLANT PER POT	1-GAL. (15-CM) POT, 1 PLANT PER POT	2 TO 3-GAL. (25 TO 30-CM) POT, 3 PLANTS PER POT	HEIGHT	USDA HARDINESS ZONES	BLOOM MONTHS
87	 SALVIA <i>Salvia greggii</i>	Suncrest Landscape Series, Suncrest Series	5.8-6.2	Nights: 45 to 70°F (7 to 21°C) Days: 55 to 80°F (13 to 27°C)	Day length neutral	No	5,000 to 8,000	Allow media to dry moderately between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.	Once for smaller pot sizes, twice for larger containers	PGRs generally not needed	White fly, spider mites	Unrooted: 12-14 wks Rooted: 8-10 wks	Unrooted: 14-16 wks Rooted: 10-12 wks	Unrooted: 16-18 wks Rooted: 12-14 wks	Suncrest Landscape: 24-36 in. (61-91 cm) Suncrest: 16-24 in. (41-61 cm)	7-11	March to October
86	 SALVIA <i>Salvia hybrida</i>	Arctic Blaze® Series	5.8-6.2	Nights: 55 to 70°F (13 to 21°C) Days: 60 to 80°F (15 to 27°C)	Day length neutral	No	5,000 to 8,000	Allow media to dry moderately between watering.	Use a balanced fertilizer at a rate of 150 to 175 ppm.	Yes	PGRs generally not needed	Thrips	Not recommended	Unrooted: 14-16 wks Rooted: 10-12 wks	Unrooted: 16-18 wks Rooted: 12-14 wks	24 in. (61 cm)	6-11	March to September
89	 SALVIA <i>Salvia nemorosa</i>	Blue Marvel	5.8-6.2	Nights: 45 to 55°F (7 to 13°C) Days: 55 to 65°F (13 to 18°C)	Day length neutral	Beneficial; aids in bulking. Not required for flowering.	5,000 to 8,000	Allow media to dry moderately between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.	None	PGRs generally not needed	White fly, spider mites, Botrytis	Unrooted: 13-15 wks Rooted: 8-10 wks	Unrooted: 15-17 wks Rooted: 10-12 wks	Unrooted: 17-19 wks Rooted: 12-14 wks	10-12 in. (25-30 cm)	4-9	March to September
91	 SALVIA <i>Salvia nemorosa</i>	Burgundy Candles	5.8-6.2	Nights: 45 to 55°F (7 to 13°C) Days: 55 to 65°F (13 to 18°C)	Day length neutral	Beneficial; aids in bulking. Not required for flowering.	5,000 to 8,000	Allow media to dry moderately between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.	Yes	PGRs generally not needed	White fly, spider mites, Botrytis	Unrooted: 13-15 wks Rooted: 8-10 wks	Unrooted: 15-17 wks Rooted: 10-12 wks	Unrooted: 17-19 wks Rooted: 12-14 wks	26-28 in. (66-71 cm)	4-9	March to September
90	 SALVIA <i>Salvia nemorosa</i>	Lyrical™ Series	5.8-6.2	Nights: 45 to 55°F (7 to 13°C) Days: 55 to 65°F (13 to 18°C)	Day length neutral	Beneficial; aids in bulking. Not required for flowering.	5,000 to 8,000	Allow media to dry moderately between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.	Yes	PGRs generally not needed	White fly, spider mites, Botrytis	Unrooted: 13-15 wks Rooted: 8-10 wks	Unrooted: 15-17 wks Rooted: 10-12 wks	Unrooted: 17-19 wks Rooted: 12-14 wks	22-24 in. (56-61 cm)	4-9	March to September
*	 SALVIA <i>Salvia nemorosa</i>	Rose Marvel	5.8-6.2	55 to 65°F (13 to 18°C)	Day length neutral	Beneficial for bulking but not required for flowering.	5,000 to 8,000	Moderate	Use a balanced fertilizer at a rate of 175 to 200 ppm N.	Generally not required	Will respond to 300 ppm Configure spray at young plant level.	Spider mites	Not recommended	10-12 wks	12-14 wks	10-12 in. (25-30 cm)	4-9	March to September
94	 SCABIOSA <i>Scabiosa columbaria</i>	Flutter™ Series	5.5-6.2	55 to 65°F (13 to 18°C)	Day length neutral	No	5,000 to 8,000	Moderate	Use a balanced fertilizer at a rate of 150 to 175 ppm N.	Typically not necessary	Typically not necessary	Very disease resistant. Watch for root and crown rot under poor growing conditions.	Not recommended	10-12 wks from rooted liner	10-12 wks from rooted liner	12-14 in. (30-36 cm)	5-9	March to September
104	 VERONICA <i>Veronica austriaca</i>	Venice Blue	5.8-6.2	Nights: 50 to 55°F (10 to 13°C) Days: 60 to 65°F (16 to 18°C)	Day length neutral	Yes	5,000 to 8,000	Allow media to dry slightly between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.	Yes	PGRs generally not needed	Aphids	Unrooted: Plant by week 40 (North), week 45 (South) Rooted: Stick by week 35 (North), week 40 (South)	Unrooted: Plant by week 35 (North), week 40 (South) Rooted: Stick by week 30 (North), week 35 (South)	Unrooted: Plant by week 32 (North), week 37 (South) Rooted: Stick by week 28 (North), week 32 (South)	10-12 in. (25-30 cm)	4-9	March to April
106	 VERONICA <i>Veronica hybrida</i>	Moody Blues® Series	5.8-6.2	Nights: 50 to 55°F (10 to 13°C) Days: 60 to 65°F (16 to 18°C)	Long day facultative	No	5,000 to 8,000	Allow media to dry slightly between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.	Yes	PGRs generally not needed	Aphids, white fly	Unrooted: 10-14 wks Rooted: 8-10 wks	Unrooted: 14-16 wks Rooted: 10-12 wks	Unrooted: 16-18 wks Rooted: 12-14 wks	12-14 in. (30-36 cm)	4-9	June to October
108	 VERONICA <i>Veronica x hybrida</i>	Purpleicious	5.8-6.2	Nights: 50 to 55°F (10 to 13°C) Days: 60 to 65°F (16 to 18°C)	Long day obligate	Beneficial for bulking and earlier flowering.	5,000 to 8,000	Allow media to dry slightly between watering.	Use a balanced fertilizer at a rate of 125 to 150 ppm.	Yes	PGRs generally not needed	Aphids, white fly	Not recommended	Unrooted: Plant by week 35 (North), week 40 (South) Rooted: Stick by week 30 (North), week 35 (South)	Unrooted: Plant by week 32 (North), week 37 (South) Rooted: Stick by week 28 (North), week 32 (South)	16-20 in. (41-51 cm)	5-8	June to August
111, 112	 VIOLA <i>Viola cornuta</i>	Halo Series, Jumping Jack	5.5-5.8	Nights: 50 to 55°F (10 to 13°C) Days: 60 to 65°F (16 to 18°C)	Day length neutral	No	5,000 to 8,000	Allow media to dry slightly between watering.	Use a balanced Pansy/Viola fertilizer at a rate of 125 to 150 ppm.	Recommended	PGRs generally not needed	Watch for Thielaviopsis and Pythium. White fly, spider mites	Unrooted: 11-13 wks Rooted: 6-8 wks	Unrooted: 13-15 wks Rooted: 8-10 wks	Unrooted: 13-15 wks Rooted: 8-10 wks	Halo Series: 8-10 in. (20-25 cm) Jumping Jack: 6-8 in. (15-20 cm)	5-9	February to April, September to October

* See DarwinPerennials.com