

**syngenta** flowers

# Grower Success Guide

ANNUALS 2022-2023

BRINGING PLANT POTENTIAL TO LIFE

BLOOMING  
BRIGHTLY™



INTERSPECIFIC

SPECTRA™

NEW GUINEA IMPATIENS

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## TECHNICAL KEY

### Standardized Pot Guide

NEW DESCRIPTION	ROUGHLY APPLIES TO
<b>Pack</b>	804, 606 packs
<b>Large Pack</b>	1801, 306 packs
<b>1.0 pt. pot</b>	4 in. pot
<b>1.0 qt. pot</b>	4.5 in. pot
<b>1.25 qt. pot</b>	6 in. pot
<b>2.5 qt. pot</b>	Trade gallon pot
<b>3.0 qt. pot</b>	8 in. pot
<b>1.5 gal. HB</b>	10 in. hanging basket
<b>1.5 gal. pot</b>	10 in. pot
<b>2.0 gal. HB</b>	12 in. hanging basket
<b>2.5 gal. pot</b>	12 in. pot
<b>3.0 gal. HB</b>	14 in. hanging basket
<b>3.0 gal. pot</b>	14 in. pot
<b>3.5 gal. pot</b>	15 in. pot

### Moisture Level

MOISTURE LEVEL	DESCRIPTION
<b>1 – DRY</b>	Soil is tan to gray in color, trays are extremely light, and soil pulls away from sides of container.
<b>2 – MEDIUM</b>	Soil is light brown in color, no water can be extracted from soil, and soil will crumble apart.
<b>3 – MOIST</b>	Soil is brown in color, strongly squeezing the soil will extract a few drops of water, and trays are light with no visible bend.
<b>4 – WET</b>	Soil is dark brown but not shiny, no free water is seen at the surface of the soil, when pressed or squeezed water drips easily, and trays are heavy with a visible bend in the middle.
<b>5 – SATURATED</b>	Soil is dark brown and shiny, free water is present at the surface of the soil, water drips freely from the bottom of the tray, and trays are heavy with a visible bend in the middle.

### Timing

ABBREVIATION	DESCRIPTION
<b>E</b>	Early
<b>E-M</b>	Early-Mid
<b>M</b>	Mid
<b>M-L</b>	Mid-Late
<b>L</b>	Late

### Vigor

ABBREVIATION	DESCRIPTION
<b>C</b>	Compact
<b>C-M</b>	Compact-Medium
<b>M</b>	Medium
<b>M-V</b>	Medium-Vigorous
<b>V</b>	Vigorous

# Digital Tools Available Online

## Get online technical support today!

- Product Availability
- Field Trial Events and Results
- Online Image Library
- Sell Sheets
- Culture Sheets
- Technical Tips and Documents
- Webinars and Videos
- Catalogs and Brochures



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# Technical Support



Harvey Lang



Jamie Gibson



Cristina Burgart



Lauren Kilpatrick



Alicain Carlson



Mike Fischer



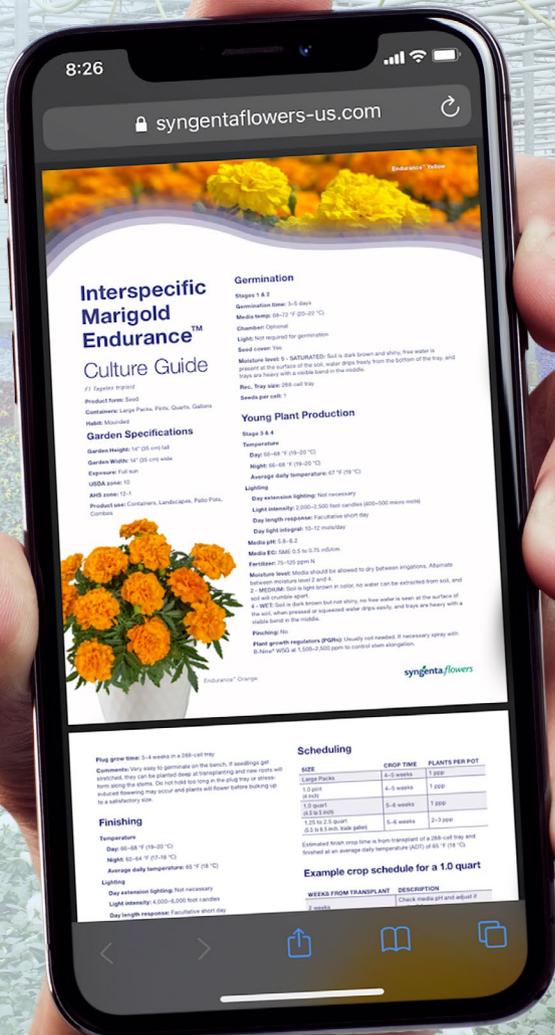
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Sincerity Pink White Bicolor



Zydeco™ Fire

# Seed Propagation

Popstars™ Deep Blue



Begonia **BADA BING®/BADA BOOM™** *F1 Begonia semperflorens*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw, Pelleted	7–8 weeks	1–2	No	6–8 days	72–78 °F (22–26 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Avoid overwatering to help prevent excess algae growth and to promote root growth into the media. If germinating on the bench it is helpful to cover trays with Reemay® or similar to help retain humidity and reduce irrigation frequency. When irrigating use low pressure/volume nozzles/breakers to avoid moving seeds around in the cell. If the daily light integral (DLI) is less than 12 mols/day adding supplemental HID light will promote a more uniform crop. Do not use plug trays that have been used previously and had a crop treated with paclobutrazol grown in them. Most Begonia semperflorens will stop growing if exposed to any level of paclobutrazol. Do not irrigate with recycled water for this reason.

Begonia **BOSSA NOVA™** *F1 Begonia boliviensis*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Pelleted	7–9 weeks	1	No	14 days	73–78 °F (23–25 °C)	Not required for germination	pH: 5.5–5.8 SME 0.5–1.0 mS/cm

**Comments:** Irrigate early in the day to avoid leaf scorch when high light levels are present. Allowing the soil surface to dry between irrigations will reduce algae growth. Light is not essential for emergence, but additional light at 14 hours per day will greatly enhance germination and early growth. Maintain high humidity until day 14 when it can be reduced to around 50%. Once out of the chamber, it is helpful to cover trays with Reemay® or similar to help retain humidity and reduce irrigation frequency. Avoid irrigating with cold water. 65° is ideal.

Begonia **EUREKA™** *F1 Begonia semperflorens*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Pelleted	7–8 weeks	1–2	No	6–8 days	72–78 °F (22–26 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Avoid overwatering to help prevent excess algae growth and to promote root growth into the media. If germinating on the bench it is helpful to cover trays with Reemay® or similar to help retain humidity and reduce irrigation frequency. When irrigating use low pressure/volume nozzles/breakers to avoid moving seeds around in the cell. If the daily light integral (DLI) is less than 12 mols/day adding supplemental HID light will promote a more uniform crop. Do not use plug trays that have been used previously and had a crop treated with paclobutrazol grown in them. Most Begonia semperflorens will stop growing if exposed to any level of paclobutrazol. Do not irrigate with recycled water for this reason.

Begonia **TOPSPIN™** *F1 Begonia semperflorens*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Pelleted	7–8 weeks	1–2	No	6–8 days	72–78 °F (22–26 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Avoid overwatering to help prevent excess algae growth and to promote root growth into the media. If germinating on the bench it is helpful to cover trays with Reemay® or similar to help retain humidity and reduce irrigation frequency. When irrigating use low pressure/volume nozzles/breakers to avoid moving seeds around in the cell. If the daily light integral (DLI) is less than 12 mols/day adding supplemental HID light will promote a more uniform crop. Do not use plug trays that have been used previously and had a crop treated with paclobutrazol grown in them. Most Begonia semperflorens will stop growing if exposed to any level of paclobutrazol. Do not irrigate with recycled water for this reason.

Begonia Interspecific **BIONIC™** *F1 Begonia × hybrida*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Pelleted	7–8 weeks	1	No	6–8 days	72–78 °F (22–26 °C)	Beneficial for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Avoid overwatering to help prevent excess algae growth and to promote root growth into the media. If germinating on the bench, it is helpful to cover trays with Reemay® or similar to help retain humidity and reduce irrigation frequency. When irrigating, use low pressure/volume nozzles/breakers to avoid moving seeds around in the cell. If the daily light integral (DLI) is less than 12 mols/day, adding supplemental HID light will promote a more uniform crop.

Begonia Interspecific **BOWLER™** *F1 Begonia × hybrida*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Pelleted	7–8 weeks	1	No	6–8 days	72–78 °F (22–26 °C)	Beneficial for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Avoid overwatering to help prevent excess algae growth and to promote root growth into the media. If germinating on the bench, it is helpful to cover trays with Reemay® or similar to help retain humidity and reduce irrigation frequency. When irrigating, use low pressure/volume nozzles/breakers to avoid moving seeds around in the cell. If the daily light integral (DLI) is less than 12 mols/day, adding supplemental HID light will promote a more uniform crop.

Begonia Interspecific **TOPHAT™** *F1 Begonia × hybrida*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Pelleted	7–8 weeks	1	No	6–8 days	72–78 °F (22–26 °C)	Beneficial for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Avoid overwatering to help prevent excess algae growth and to promote root growth into the media. If germinating on the bench, it is helpful to cover trays with Reemay® or similar to help retain humidity and reduce irrigation frequency. When irrigating, use low pressure/volume nozzles/breakers to avoid moving seeds around in the cell. If the daily light integral (DLI) is less than 12 mols/day, adding supplemental HID light will promote a more uniform crop.

Calendula **COSTA™** *OP Calendula officinalis*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	3–4 weeks	1	Yes	5–10 days	70–72 °F (21–22 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Grow on the cool side. Calendulas are not recommended for fall crops where cool conditions cannot be maintained.

Celosia **BRIGHT SPARKS™** *OP Celosia plumosa erecta*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	4–5 weeks	1	Yes	2–4 days	70–75 °F (21–24 °C)	Required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Bright Sparks celosia will flower early under short days, so to allow bulking of the plug provide a 14-hour day length during propagating.

Cleome **SPARKLER™ 2.0** *F1 Cleome hassleriana*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	3–4 weeks	1	Yes	4–6 days	80–85 °F (26–30 °C) days 68–70 °F (20–21 °C) nights	Required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** A 15 °F (-9 °C) positive DIF is recommended for best germination results. Cleome is a heavy feeder; start feeding in the plug about 2 weeks after sowing.

Cosmos **APOLLO™** *OP Cosmos bipinnatus*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	4–5 weeks	1	Yes	3–4 days	61–65 °F (16–18 °C)	Not required for germination	pH: 5.5–5.9 SME 0.25–0.5 mS/cm

**Comments:** Cosmos will flower early under short days, so to allow bulking of the plug provide a 14-hour day length during propagating.

Cuphea **SRIRACHA™** *F1 Cuphea llavea*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	3.5–4 weeks	1	Yes	3–5 days	70–75 °F (21–24 °C)	Not required for germination	pH: 5.8–6.2 SME 0.5–0.75 mS/cm

**Comments:** Only the first application of plant growth regulators (PGRs) is necessary for the plug. After two weeks, you can alternate moisture levels between 2 and 4 to help tone the plugs. Provide supplemental lighting if possible if DLI is less than 8 mols/day.

Dahlia **FRESCO™** *OP Dahlia hybrida*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw, Coated	3–4 weeks	1	Yes	5 days	70 °F (21 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Provide day extension lighting to 12–14 hours/day to help prevent premature flower bud set.

Dahlia **HARLEQUIN™** *OP Dahlia hybrida*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw, Coated	3–4 weeks	1	Yes	5 days	70 °F (21 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Provide day extension lighting to 12–14 hours/day to help prevent premature flower bud set.

Dianthus **DIABUNDA®** *F1 Dianthus × barbatus*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Pelleted	5–6 weeks	1	Yes	5 days	72–74 °F (22–23 °C)	Not required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Providing high light and dropping the temperature to an average daily temperature (ADT) of 60 °F (21 °C) will reduce the need for plant growth regulators (PGRs). Day extension lighting to 14 hours will hasten flowering of the finished plant.

Dianthus **SUPER PARFAIT™** *F1 Dianthus chinensis*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw, Pelleted	5–6 weeks	1	Yes	5 days	72–74 °F (22–23 °C)	Not required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Providing high light and dropping the temperature to an average daily temperature (ADT) of 60 °F (21 °C) will reduce the need for plant growth regulators (PGRs). Day extension lighting to 14 hours will hasten flowering of the finished plant.

Dianthus **VENTI PARFAIT™** *F1 Dianthus chinensis*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw, Pelleted	5–6 weeks	1	Yes	5 days	72–74 °F (22–23 °C)	Not required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Providing high light and dropping the temperature to an average daily temperature (ADT) of 60 °F (21 °C) will reduce the need for plant growth regulators (PGRs). Day extension lighting to 14 hours will hasten flowering of the finished plant.

English Daisy / Bellis **BAM BAM™** *OP Bellis perennis*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Pelleted	5–6 weeks	1	Yes	3–5 days	65–70 °F (18–21 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** As plugs mature, reduce irrigation frequency to tone plants.

Gazania **BIG KISS™** *F1 Gazania rigens*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	5–6 weeks	1	Yes	4–6 days	70–75 °F (21–24 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Growing Gazania plugs on the dry side and keeping them moderately cool will help prevent leaf stretch.

Gazania **FROSTY KISS™** *F1 Gazania rigens*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	5–6 weeks	1	Yes	4–6 days	70–75 °F (21–24 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Growing Gazania plugs on the dry side and keeping them moderately cool will help prevent leaf stretch.

Gazania **GAZOO™** *OP Gazania rigens*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	5–6 weeks	1	Yes	4–6 days	70–75 °F (21–24 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Growing Gazania plugs on the dry side and keeping them moderately cool will help prevent leaf stretch.

Gazania **KISS™** *F1 Gazania rigens*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	5–6 weeks	1	Yes	4–6 days	70–75 °F (21–24 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Growing Gazania plugs on the dry side and keeping them moderately cool will help prevent leaf stretch.

Geranium **BULLSEYE™** *F1 Pelargonium × hortorum*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Coated	4–5 weeks	1	Yes	1–3 days	73 °F (23 °C)	Not required for germination	pH: 6.1–6.5 SME 0.9–1.3 mS/cm

**Comments:** Geraniums are irradiance plants so the more light they receive the faster they will flower. Under short days or cloudy conditions, it is beneficial to provide supplemental lighting of around 400 foot candles (4,000 lux) especially in the plug tray to speed up flowering. All geraniums are especially sensitive to bacterial diseases so be sure to start with clean plug trays, media and propagation areas. Geranium seeds do not carry bacterial diseases so if you start clean you can stay clean. Do not subirrigate or use recycled water. Media pH should not drop below 6.0 or the plants may suffer from iron and/or manganese toxicity.

Geranium **MAVERICK™** *F1 Pelargonium × hortorum*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Coated	4–5 weeks	1	Yes	1–3 days	73 °F (23 °C)	Not required for germination	pH: 6.1–6.5 SME 0.9–1.3 mS/cm

**Comments:** Geraniums are irradiance plants so the more light they receive the faster they will flower. Under short days or cloudy conditions, it is beneficial to provide supplemental lighting of around 400 foot candles (4,000 lux) especially in the plug tray to speed up flowering. All geraniums are especially sensitive to bacterial diseases so be sure to start with clean plug trays, media and propagation areas. Geranium seeds do not carry bacterial diseases so if you start clean you can stay clean. Do not subirrigate or use recycled water. Media pH should not drop below 6.0 or the plants may suffer from iron and/or manganese toxicity.

Geranium **MULTIBLOOM™** *F1 Pelargonium × hortorum*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Coated	4–5 weeks	1	Yes	1–3 days	73 °F (23 °C)	Not required for germination	pH: 6.1–6.5 SME 0.9–1.3 mS/cm

**Comments:** Geraniums are irradiance plants so the more light they receive the faster they will flower. Under short days or cloudy conditions, it is beneficial to provide supplemental lighting of around 400 foot candles (4,000 lux) especially in the plug tray to speed up flowering. All geraniums are especially sensitive to bacterial diseases so be sure to start with clean plug trays, media and propagation areas. Geranium seeds do not carry bacterial diseases so if you start clean you can stay clean. Do not subirrigate or use recycled water. Media pH should not drop below 6.0 or the plants may suffer from iron and/or manganese toxicity.

Geranium **PINTO™ PREMIUM** *F1 Pelargonium × hortorum*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Coated	4–5 weeks	1	Yes	1–3 days	73 °F (23 °C)	Not required for germination	pH: 6.1–6.5 SME 0.9–1.3 mS/cm

**Comments:** Geraniums are irradiance plants so the more light they receive the faster they will flower. Under short days or cloudy conditions, it is beneficial to provide supplemental lighting of around 400 foot candles (4,000 lux) especially in the plug tray to speed up flowering. All geraniums are especially sensitive to bacterial diseases so be sure to start with clean plug trays, media and propagation areas. Geranium seeds do not carry bacterial diseases so if you start clean you can stay clean. Do not subirrigate or use recycled water. Media pH should not drop below 6.0 or the plants may suffer from iron and/or manganese toxicity.

Geranium **QUANTUM™** *F1 Pelargonium × hortorum*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Coated	4–5 weeks	1	Yes	1–3 days	73 °F (23 °C)	Not required for germination	pH: 6.1–6.5 SME 0.9–1.3 mS/cm

**Comments:** Geraniums are irradiance plants so the more light they receive the faster they will flower. Under short days or cloudy conditions, it is beneficial to provide supplemental lighting of around 400 foot candles (4,000 lux) especially in the plug tray to speed up flowering. All geraniums are especially sensitive to bacterial diseases so be sure to start with clean plug trays, media and propagation areas. Geranium seeds do not carry bacterial diseases so if you start clean you can stay clean. Do not subirrigate or use recycled water. Media pH should not drop below 6.0 or the plants may suffer from iron and/or manganese toxicity.

Geranium **RINGO 2000™** *F1 Pelargonium × hortorum*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Coated	4–5 weeks	1	Yes	1–3 days	73 °F (23 °C)	Not required for germination	pH: 6.1–6.5 SME 0.9–1.3 mS/cm

**Comments:** Geraniums are irradiance plants so the more light they receive the faster they will flower. Under short days or cloudy conditions, it is beneficial to provide supplemental lighting of around 400 foot candles (4,000 lux) especially in the plug tray to speed up flowering. All geraniums are especially sensitive to bacterial diseases so be sure to start with clean plug trays, media and propagation areas. Geranium seeds do not carry bacterial diseases so if you start clean you can stay clean. Do not subirrigate or use recycled water. Media pH should not drop below 6.0 or the plants may suffer from iron and/or manganese toxicity.

Geranium Ivy **REACH OUT™** *F1 Pelargonium peltatum*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Coated	5–6 weeks	1	Yes	4 days	73 °F (23 °C)	Not required for germination	pH: 5.8–6.2 SME 0.9–1.3 mS/cm

**Comments:** Geraniums are irradiance plants so the more light they receive the faster they will flower. Under short days or cloudy conditions, it is beneficial to provide supplemental lighting of around 400 foot candles (4,000 lux) especially in the plug tray to speed up flowering. All geraniums are especially sensitive to bacterial diseases so be sure to start with clean plug trays, media and propagation areas. Geranium seeds do not carry bacterial diseases so if you start clean you can stay clean. Do not subirrigate or use recycled water. Media pH should not drop below 6.0 or the plants may suffer from iron and/or manganese toxicity.

Geranium Ivy **TORNADO™** *F1 Pelargonium peltatum*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Coated	5–6 weeks	1	Yes	4 days	73 °F (23 °C)	Not required for germination	pH: 5.8–6.2 SME 0.9–1.3 mS/cm

**Comments:** Geraniums are irradiance plants so the more light they receive the faster they will flower. Under short days or cloudy conditions, it is beneficial to provide supplemental lighting of around 400 foot candles (4,000 lux) especially in the plug tray to speed up flowering. All Geraniums are especially sensitive to bacterial diseases so be sure to start with clean plug trays, media and propagation areas. Geranium seeds do not carry bacterial diseases so if you start clean you can stay clean. Do not subirrigate or use recycled water. Media pH should not drop below 6.0 or the plants may suffer from iron and/or manganese toxicity.

Gerbera **BENGAL™** F1 *Gerbera jamesonii*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
128-cell tray	SatinCoat™	5–6 weeks	1	No	4 days	74–76 °F (23–24 °C)	Required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Under low light conditions provide supplemental HID light if possible; do not extend day length as this will extend the time to flower. It is critical to allow adequate dry back between irrigations to prevent stunted and distorted growth. Because of this do not mist at night. If germinating on a bench it is best to use a tent system to increase humidity and reduce the frequency of irrigations/misting.

Gerbera **CARTWHEEL®** F1 *Gerbera jamesonii*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
128-cell tray	SatinCoat™	5–6 weeks	1	No	4 days	74–76 °F (23–24 °C)	Required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Under low light conditions provide supplemental HID light if possible; do not extend day length as this will extend the time to flower. It is critical to allow adequate dry back between irrigations to prevent stunted and distorted growth. Because of this do not mist at night. If germinating on a bench it is best to use a tent system to increase humidity and reduce the frequency of irrigations/misting.

Gerbera **ELEPHANT™** F1 *Gerbera jamesonii*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
128-cell tray	SatinCoat™	5–6 weeks	1	No	4 days	74–76 °F (23–24 °C)	Required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Under low light conditions provide supplemental HID light if possible; do not extend day length as this will extend the time to flower. It is critical to allow adequate dry back between irrigations to prevent stunted and distorted growth. Because of this do not mist at night. If germinating on a bench it is best to use a tent system to increase humidity and reduce the frequency of irrigations/misting.

Gerbera **JAGUAR™** F1 *Gerbera jamesonii*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
128-cell tray	SatinCoat™	5–6 weeks	1	No	4 days	74–76 °F (23–24 °C)	Required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Under low light conditions provide supplemental HID light if possible; do not extend day length as this will extend the time to flower. It is critical to allow adequate dry back between irrigations to prevent stunted and distorted growth. Because of this do not mist at night. If germinating on a bench it is best to use a tent system to increase humidity and reduce the frequency of irrigations/misting.

Hibiscus **HONEYMOON™** F1 *Hibiscus moscheutos*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
200-cell tray	Raw	3–4 weeks	1	Yes	3–5 days	75–81 °F (24–27 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** If Cycocel® is applied, seedlings may temporarily yellow. Begin feeding at 75 ppm N at radical emergence.

Impatiens **ACCENT™** F1 *Impatiens walleriana*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	4–5 weeks	1	Yes	3–5 days	72–75 °F (22–24 °C)	Required for germination	pH: 5.8–6.2 SME 0.5–0.75 mS/cm

**Comments:** Use a calcium-based fertilizer and feed once a week at most to avoid soft growth and stretching of plugs. Do not let plants go into the night with wet foliage or tip abortion may occur. Downward cupping or twisting of immature leaves may be caused by overuse of plant growth regulators (PGRs). Subdue Maxx® and/or Segway® drenches are recommended plug stage fungicides for disease management.

Impatiens **ACCENT™ PREMIUM** F1 *Impatiens walleriana*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	4–5 weeks	1	Yes	3–5 days	72–75 °F (22–24 °C)	Required for germination	pH: 5.8–6.2 SME 0.5–0.75 mS/cm

**Comments:** Use a calcium-based fertilizer and feed once a week at most to avoid soft growth and stretching of plugs. Do not let plants go into the night with wet foliage or tip abortion may occur. Downward cupping or twisting of immature leaves may be caused by overuse of plant growth regulators (PGRs). Subdue Maxx® and/or Segway® drenches are recommended plug stage fungicides for disease management.

Impatiens **ATHENA™** F1 *Impatiens walleriana*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	4–5 weeks	1	Yes	3–5 days	72–75 °F (22–24 °C)	Required for germination	pH: 5.8–6.2 SME 0.5–0.75 mS/cm

**Comments:** Use a calcium-based fertilizer and feed once a week at most to avoid soft growth and stretching of plugs. Do not let plants go into the night with wet foliage or tip abortion may occur. Downward cupping or twisting of immature leaves may be caused by overuse of plant growth regulators (PGRs). Subdue Maxx® and/or Segway® drenches are recommended plug stage fungicides for disease management.

Impatiens **IMARA® XDR** *F1 Impatiens walleriana*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	4–5 weeks	1	Yes	3–5 days	72–75 °F (22–24 °C)	Required for germination	pH: 5.8–6.2 SME 0.5–0.75 mS/cm

**Comments:** Use a calcium-based fertilizer and feed once a week at most to avoid soft growth and stretching of plugs. Do not let plants go into the night with wet foliage or tip abortion may occur. Downward cupping or twisting of immature leaves may be caused by overuse of plant growth regulators (PGRs). Subdue Maxx® and/or Segway® drenches are recommended plug stage fungicides for disease management, and rotations of Mural® and Micora® sprays and Segovis® sprays or drenches are recommended for the finishing stage. For more information on Imara® XDR visit us at [www.syngentaflowers-us.com/Imara](http://www.syngentaflowers-us.com/Imara).

Impatiens **XTREME™** *F1 Impatiens walleriana*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	4–5 weeks	1	Yes	3–5 days	72–75 °F (22–24 °C)	Required for germination	pH: 5.8–6.2 SME 0.5–0.75 mS/cm

**Comments:** Use a calcium-based fertilizer and feed once a week at most to avoid soft growth and stretching of plugs. Do not let plants go into the night with wet foliage or tip abortion may occur. Downward cupping or twisting of immature leaves may be caused by overuse of plant growth regulators (PGRs). Subdue Maxx® and/or Segway® drenches are recommended plug stage fungicides for disease management.

Impatiens New Guinea **FLORIFIC®** *F1 Impatiens hawkeri*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	4–6 weeks	1	Yes	8 days	70–75 °F (21–24 °C)	Not required for germination	pH: 5.8–6.2 SME 0.9–1.3 mS/cm

**Comments:** Ensure a good scouting program for thrips is in place.

Marigold African **ANTIGUA™** *F1 Tagetes erecta*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Detailed, SatinCoat™	4–5 weeks	1	Yes	3–5 days	72–75 °F (22–24 °C)	Not required for germination	pH: 6.1–6.5 SME 0.5–0.75 mS/cm

**Comments:** Easy to germinate on the bench. Maintain media pH above 6.2 to avoid iron/manganese toxicity. Short days will shorten time to flower.

Marigold African **BIG TOP™** *F1 Tagetes erecta*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Coated, Detailed	4–5 weeks	1	Yes	3–5 days	72–75 °F (22–24 °C)	Not required for germination	pH: 6.1–6.5 SME 0.5–0.75 mS/cm

**Comments:** Easy to germinate on the bench. Maintain media pH above 6.2 to avoid iron/manganese toxicity. Short days reduces time to flower.

Marigold African **INCA II™** *F1 Tagetes erecta*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Detailed, SatinCoat™	4–5 weeks	1	Yes	3–5 days	72–75 °F (22–24 °C)	Not required for germination	pH: 6.1–6.5 SME 0.5–0.75 mS/cm

**Comments:** Easy to germinate on the bench. Maintain media pH above 6.2 to avoid iron/manganese toxicity. Short days will shorten time to flower.

Marigold African **PERFECTION™** *F1 Tagetes erecta*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Detailed, SatinCoat™	4–5 weeks	1	Yes	3–5 days	72–75 °F (22–24 °C)	Not required for germination	pH: 6.1–6.5 SME 0.5–0.75 mS/cm

**Comments:** Easy to germinate on the bench. Maintain media pH above 6.2 to avoid iron/manganese toxicity. Short days will shorten time to flower.

Marigold French anemone **ALUMIA™** *OP Tagetes patula nana*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Coated, Detailed	3–4 weeks	1	Yes	3–5 days	68–72 °F (20–22 °C)	Not required for germination	pH: 5.8–6.2 SME 0.5–0.75 mS/cm

**Comments:** Very easy to germinate on the bench. If seedlings get stretched, they can be planted deep at transplanting, and new roots will form along the stems. Do not hold too long in the plug tray or stress-induced flowering may occur, and plants will flower before bulking up to a satisfactory size.

Marigold French dwarf crested **HAPPY™** *OP Tagetes patula nana*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Detailed, SatinCoat™	3–4 weeks	1	Yes	3–5 days	68–72 °F (20–22 °C)	Not required for germination	pH: 5.8–6.2 SME 0.5–0.75 mS/cm

**Comments:** Very easy to germinate on the bench. If seedlings get stretched, they can be planted deep at transplanting, and new roots will form along the stems. Do not hold too long in the plug tray or stress-induced flowering may occur, and plants will flower before bulking up to a satisfactory size. Happy French Marigold is a genetically compact series, so chemical growth regulators are usually not necessary. Control can also be gained by good moisture management and applications of various growth regulators if needed.

Marigold Interspecific **ENDURANCE™** *F1 Tagetes triploid*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	SatinCoat™	3–4 weeks	1	Yes	3–5 days	68–72 °F (20–22 °C)	Not required for germination	pH: 5.8–6.2 SME 0.5–0.75 mS/cm

**Comments:** Very easy to germinate on the bench. If seedlings get stretched, they can be planted deep at transplanting, and new roots will form along the stems. Do not hold too long in the plug tray or stress-induced flowering may occur, and plants will flower before bulking up to a satisfactory size.

Marigold Interspecific **ZENITH™** *F1 Tagetes triploid*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Detailed	3–4 weeks	1	Yes	3–5 days	68–72 °F (20–22 °C)	Not required for germination	pH: 5.8–6.2 SME 0.5–0.75 mS/cm

**Comments:** Very easy to germinate on the bench. If seedlings get stretched, they can be planted deep at transplanting, and new roots will form along the stems. Do not hold too long in the plug tray or stress-induced flowering may occur, and plants will flower before bulking up to a satisfactory size.

Mimulus **MAGIC™** *F1 Mimulus × hybrida*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Pelleted	4–5 weeks	1	No	5–7 days	65–68 °F (18–20 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Provide day extension lighting to 14 hours under short days using mum type lights (10 foot candles). Using HID lights can promote too early of flowering.

Nicotiana **PERFUME™** *F1 Nicotiana × sandrea*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Pelleted	4–5 weeks	1	No	3–5 days	70–75 °F (21–24 °C)	Required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Cool days with high light will reduce the need to apply plant growth regulators (PGRs).

Nicotiana **SARATOGA™** *F1 Nicotiana × alata*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Pelleted	4–5 weeks	1	No	3–5 days	70–75 °F (21–24 °C)	Required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Cool days with high light will reduce the need to apply plant growth regulators (PGRs).

Osteospermum **ASTI™** *F1 Osteospermum ecklonis*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	4–5 weeks	1	Yes	8–12 days	68–70 °F (21–22 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** It is very important to spray the plugs with Cycocel® at 300 ppm about 10 days after sowing to help reduce hypocotyl stretch. Shorter hypocotyls will result in a stronger central stem after transplant and will reduce floppiness in the finished plant.

Pansy **COLOSSUS™** *F1 Viola × witrockiana*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw, PreNova™ 2.0	5–6 weeks	1	Yes	5 days	65–68 °F (18–20 °C)	Required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Keep media pH below 5.8 to help avoid Thielaviopsis infections. Under hot temperatures provide lower light levels to reduce heat stress. Do not hold Pansy plugs—transplant before plugs get root bound.

## SEED PROPAGATION

### Pansy **DELTA™** *F1 Viola × wittrockiana*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw, PreNova™ 2.0	5–6 weeks	1	Yes	5 days	65–68 °F (18–20 °C)	Required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Keep media pH below 5.8 to help avoid Thielaviopsis infections. Under hot temperatures provide lower light levels to reduce heat stress. Do not hold Pansy plugs—transplant before plugs get root bound.

### Pansy **DELTA™ PREMIUM** *F1 Viola × wittrockiana*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw, PreNova™ 2.0	5–6 weeks	1	Yes	5 days	65–68 °F (18–20 °C)	Required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Keep media pH below 5.8 to help avoid Thielaviopsis infections. Under hot temperatures provide lower light levels to reduce heat stress. Do not hold Pansy plugs—transplant before plugs get root bound.

### Pansy **DELTA™ SPEEDY** *F1 Viola × wittrockiana*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw, PreNova™ 2.0	5–6 weeks	1	Yes	5 days	65–68 °F (18–20 °C)	Required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Keep media pH below 5.8 to help avoid Thielaviopsis infections. Under hot temperatures provide lower light levels to reduce heat stress. Do not hold Pansy plugs—transplant before plugs get root bound.

### Pansy **SELECT** *F1 Viola × wittrockiana*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw, PreNova™ 2.0	5–6 weeks	1	Yes	5 days	65–68 °F (18–20 °C)	Required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Keep media pH below 5.8 to help avoid Thielaviopsis infections. Under hot temperatures provide lower light levels to reduce heat stress. Do not hold Pansy plugs—transplant before plugs get root bound.

### Pansy Spreading **FREEFALL™** *F1 Viola × wittrockiana*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Primed	4–5 weeks	1	Yes	5 days	65–68 °F (18–20 °C)	Required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Keep media pH below 5.8 to help avoid Thielaviopsis infections. Under hot temperatures, provide lower light levels to reduce heat stress. If frequent irrigation occurs due to high temperatures, apply a supplemental feed of Solubor® to avoid boron deficiency.

### Pansy Spreading **FREEFALL™ XL** *F1 Viola × wittrockiana*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Primed	4–5 weeks	1	Yes	5 days	65–68 °F (18–20 °C)	Required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Keep media pH below 5.8 to help avoid Thielaviopsis infections. Under hot temperatures, provide lower light levels to reduce heat stress. If frequent irrigation occurs due to high temperatures, apply a supplemental feed of Solubor® to avoid boron deficiency.

### Penstemon **ARABESQUE®** *F1 Penstemon hartwegii*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	5–6 weeks	1	Yes	7 days	68–73 °F (20–23 °C)	Not required for germination	pH: 5.8–6.2 SME 0.5–0.75 mS/cm

**Comments:** Warm day temperatures can promote soft growth and excessive stem elongation.

### Penstemon **PARTYBELLS™** *F1 Penstemon hartwegii*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	5–6 weeks	1	Yes	7 days	68–73 °F (20–23 °C)	Not required for germination	pH: 5.8–6.2 SME 0.5–0.75 mS/cm

**Comments:** Warm day temperatures can promote soft growth and excessive stem elongation.

### Pentas **BEEBRIGHT™** *F1 Pentas lanceolata*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Pelleted	7–8 weeks	1	No	7–10 days	73–76 °F (23–24 °C)	Not required for germination	pH: 6.1–6.5 SME 0.9–1.3 mS/cm

**Comments:** Provide supplemental lighting when DLI is less than 12 mols/day. Monitor pH levels and maintain above 6.1, or growth can stall.

Pentas **BEEHIVE™** F1 *Pentas lanceolata*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Pelleted	7–8 weeks	1	No	7–10 days	73–76 °F (23–24 °C)	Not required for germination	pH: 6.1–6.5 SME 0.9–1.3 mS/cm

**Comments:** Provide supplemental lighting when DLI is less than 12 mols/day. Monitor pH levels and maintain above 6.1, or growth can stall.

Pentas **HONEYCLUSTER™** F1 *Pentas lanceolata*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Pelleted	7–8 weeks	1	No	7–10 days	73–76 °F (23–24 °C)	Not required for germination	pH: 6.1–6.5 SME 0.9–1.3 mS/cm

**Comments:** Provide supplemental lighting when DLI is less than 12 mols/day. Monitor pH levels and maintain above 6.1, or growth can stall.

Petunia grandiflora **DUVET™** F1 *Petunia grandiflora*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Pelleted	4–5 weeks	1	No	3–5 days	72–76 °F (22–24 °C)	Required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Covering seed is not necessary, but a light vermiculite coating will help maintain moisture levels in drier climates. Keep pelleted seed at moisture level 5 the first several days to ensure the pellet is completely dissolved. Providing long days in the plug stage will reduce overall time to flower. Low boron levels can induce tip abortion. Spraying an uneven plug tray with B-Nine® WSG at 1,500 ppm may help even the growth in the tray.

Petunia grandiflora **FROST™** F1 *Petunia grandiflora*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw, Pelleted	4–5 weeks	1	No	3–5 days	72–76 °F (22–24 °C)	Required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Covering seed is not necessary, but a light vermiculite coating will help maintain moisture levels in drier climates. Keep pelleted seed at moisture level 5 the first several days to ensure the pellet is completely dissolved. Providing long days in the plug stage will reduce overall time to flower. Low boron levels can induce tip abortion. Spraying an uneven plug tray with B-Nine® WSG at 1,500 ppm may help even the growth in the tray.

Petunia grandiflora **PRISM™** F1 *Petunia grandiflora*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Pelleted	4–5 weeks	1	No	3–5 days	72–76 °F (22–24 °C)	Required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Covering seed is not necessary, but a light vermiculite coating will help maintain moisture levels in drier climates. Keep pelleted seed at moisture level 5 the first several days to ensure the pellet is completely dissolved. Providing long days in the plug stage will reduce overall time to flower. Low boron levels can induce tip abortion. Spraying an uneven plug tray with B-Nine® WSG at 1,500 ppm may help even the growth in the tray.

Petunia grandiflora **TRITUNIA™** F1 *Petunia grandiflora*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw, Pelleted	4–5 weeks	1	No	3–5 days	72–76 °F (22–24 °C)	Required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Covering seed is not necessary, but a light vermiculite coating will help maintain moisture levels in drier climates. Keep pelleted seed at moisture level 5 the first several days to ensure the pellet is completely dissolved. Providing long days in the plug stage will reduce overall time to flower. Low boron levels can induce tip abortion. Spraying an uneven plug tray with B-Nine® WSG at 1,500 ppm may help even the growth in the tray.

Petunia milliflora **PICOBELLA™** F1 *Petunia milliflora*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Pelleted	4–5 weeks	1	No	3–5 days	72–76 °F (22–24 °C)	Required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Covering seed is not necessary, but a light vermiculite coating will help maintain moisture levels in drier climates. Keep pelleted seed at moisture level 5 the first several days to ensure the pellet is completely dissolved. Providing long days in the plug stage will reduce overall time to flower. Low boron levels can induce tip abortion.

Petunia multiflora **DAMASK™** F1 *Petunia multiflora*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Pelleted	4–5 weeks	1	No	3–5 days	72–76 °F (22–24 °C)	Required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Covering seed is not necessary, but a light vermiculite coating will help maintain moisture levels in drier climates. Keep pelleted seed at moisture level 5 the first several days to ensure the pellet is completely dissolved. Providing long days in the plug stage will reduce overall time to flower. Low boron levels can induce tip abortion. Spraying an uneven plug tray with B-Nine® WSG at 1,500 ppm may help even the growth in the tray.

Petunia multiflora **HURRAH™** F1 *Petunia multiflora*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Pelleted	4–5 weeks	1	No	3–5 days	72–76 °F (22–24 °C)	Required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Covering seed is not necessary, but a light vermiculite coating will help maintain moisture levels in drier climates. Keep pelleted seed at moisture level 5 the first several days to ensure the pellet is completely dissolved. Providing long days in the plug stage will reduce overall time to flower. Low boron levels can induce tip abortion. Spraying an uneven plug tray with B-Nine® WSG at 1,500 ppm may help even the growth in the tray.

Petunia spreading **FOTOFINISH®** F1 *Petunia pendula*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Pelleted	4–5 weeks	1	No	3–5 days	72–76 °F (22–24 °C)	Required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Covering seed is not necessary, but a light vermiculite coating will help maintain moisture levels in drier climates. Keep pelleted seed at moisture level 5 the first several days to ensure the pellet is completely dissolved. Providing long days in the plug stage will reduce overall time to flower. Low boron levels can induce tip abortion. Spraying an uneven plug tray with B-Nine® WSG at 1,500 ppm may help even the growth in the tray.

Petunia spreading grandiflora **SKYBOX™** F1 *Petunia pendula*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Pelleted	4–5 weeks	1	No	3–5 days	72–76 °F (22–24 °C)	Required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Covering seed is not necessary, but a light vermiculite coating will help maintain moisture levels in drier climates. Keep pelleted seed at moisture level 5 the first several days to ensure the pellet is completely dissolved. Providing long days in the plug stage will reduce overall time to flower. Low boron levels can induce tip abortion.

Petunia spreading milliflora **FLASHFORWARD™** F1 *Petunia pendula*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Pelleted	4–5 weeks	1	No	3–5 days	72–76 °F (22–24 °C)	Required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Covering seed is not necessary, but a light vermiculite coating will help maintain moisture levels in drier climates. Keep pelleted seed at moisture level 5 the first several days to ensure the pellet is completely dissolved. Providing long days in the plug stage will reduce overall time to flower. Low boron levels can induce tip abortion. Spraying an uneven plug tray with B-Nine® WSG at 1,500 ppm may help even the growth in the tray.

Phlox **POPSTARS™** F1 *Phlox drummondii*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	4–5 weeks	1	Yes	3–5 days	68–72 °F (20–22 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Keep EC less than 0.75 mS/cm and avoid the dry-growing method of growth control, as *Phlox drummondii* are sensitive to high salts.

Primula **LIBRE™** F1 *Primula obconica*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	6–7 weeks	1	Yes	7 days	72–75 °F (22–24 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Control thrips to avoid Tospovirus.

Primula **PRIMERA™** F1 *Primula acaulis*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw, Primed	6–7 weeks	1	Yes	7 days	64–68 °F (18–20 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Grow plugs on the dry side to avoid excessive algae growth.

Ranunculus **MACHÉ™** F1 *Ranunculus asiaticus*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw, Pelleted	8–10 weeks	1	Yes	14–21 days	50–55 °F (10–13 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Control thrips to avoid Tospovirus.

Ranunculus **MAGIC™** F1 *Ranunculus asiaticus*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw, Pelleted	8–10 weeks	1	Yes	14–21 days	50–55 °F (10–13 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Control thrips to avoid Tospovirus.

Salvia **MOJAVE™** *OP Salvia splendens*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	4–5 weeks	1	Yes	5–7 days	72–75 °F (22–24 °C)	Not required for germination	pH: 5.5–5.8 SME 0.5–0.75 mS/cm

**Comments:** Salvia is sensitive to high salts in the plug tray, so do not let the EC rise above 1.5 mS/cm. After fertilization, rinse the plants off with clear water to avoid burning the young growing tips.

Salvia **SENTRY™** *OP Salvia splendens*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	4–5 weeks	1	Yes	5–7 days	72–75 °F (22–24 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Salvia is sensitive to high salts in the plug tray, so do not let the EC rise above 1.5 mS/cm. After fertilization, rinse the plants off with clear water to avoid burning the young growing tips.

Salvia **SIZZLER™** *OP Salvia splendens*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	4–5 weeks	1	Yes	5–7 days	72–75 °F (22–24 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Salvia is sensitive to high salts in the plug tray so do not let the EC rise above 1.5 mS/cm. After fertilization, rinse the plants off with clear water to avoid burning the young growing tips.

Salvia **VICTORIA™** *OP Salvia farinacea*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	6–7 weeks	1	Yes	5–7 days	72–75 °F (22–24 °C)	Not required for germination	pH: 5.5–5.8 SME 0.5–0.75 mS/cm

**Comments:** Salvia is sensitive to high salts in the plug tray, so do not let the EC rise above 1.5 mS/cm. After fertilization, rinse the plugs off with clear water to avoid burning the young growing tips. Salvia farinacea is a long day crop so extending the day length to 16-hours with HID lights at true leaf stage is beneficial.

Schizanthus **ATLANTIS™** *F1 Schizanthus × wisetonensis*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	4–7 weeks	1	Yes	7–14 days	62–65 °F (17–19 °C)	Not required for germination	pH: 5.8–6.2 SME 0.25–0.5 mS/cm

**Comments:** Keep plugs under short days to avoid premature flowering.

Snapdragon **LIBERTY™ CLASSIC** *F1 Antirrhinum majus*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	6–7 weeks	1	Yes	5 days	72–75 °F (22–24 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** High pH levels (above 6.2) may promote iron deficiency causing chlorotic young leaves. Overly wet conditions or watering late in the day can cause shoot tip abortion. Keeping the media too wet can also lead to root rot diseases such as Pythium.

Snapdragon **MADAME BUTTERFLY™** *F1 Antirrhinum majus*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	6–7 weeks	1	Yes	5 days	72–75 °F (22–24 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** High pH levels (above 6.2) may promote iron deficiency causing chlorotic young leaves. Overly wet conditions or watering late in the day can cause shoot tip abortion. Keeping the media too wet can also lead to root rot diseases such as Pythium.

Snapdragon **SNAPTASTIC™** *F1 Antirrhinum majus*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw, Pelleted	6–7 weeks	1	Yes	5 days	72–75 °F (22–24 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** High pH levels (above 6.2) may promote iron deficiency causing chlorotic young leaves. Overly wet conditions or watering late in the day can cause shoot tip abortion. Keeping the media too wet can also lead to root rot diseases such as Pythium.

Snapdragon Dwarf **SNAPTINI™** *F1 Antirrhinum majus*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw, Pelleted	5–6 weeks	1	Yes	5 days	72–75 °F (22–24 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** High pH levels (above 6.2) may promote iron deficiency causing chlorotic young leaves. Overly wet conditions or watering late in the day can cause shoot tip abortion. Keeping the media too wet can also lead to root rot diseases such as Pythium.

Sunflower **SUNFINITY®** *F1 Helianthus hybrida*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
72-cell	Raw	4 weeks	1	Yes	5–6 days	68–72 °F (20–22 °C)	Not required for germination	pH: 5.5–5.8 SME 1.0–1.5 mS/cm

**Comments:** Apply a Bonzi® (paclobutrazol) sprinch at 2–3 ppm within 48 hours of sowing (3–5 quarts per 100 sq ft.) to control hypocotyl stretch. Plugs must be propagated under long day (+13 hour) photoperiods in order to prevent delays in flowering. For more information on Sunfinity® visit us at [www.syngentaflowers-us.com/sunfinity](http://www.syngentaflowers-us.com/sunfinity).

Torenia **HI-LITE™** *F1 Torenia fourmieri*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Pelleted	4–5 weeks	1	No	4–6 days	75 °F (24 °C)	Required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** High light levels can cause leaf scorch. Very wet conditions will promote damping-off diseases.

Verbena **OBSESSION™** *OP Verbena hybrida*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw, Primed	6–7 weeks	1	Yes	4–7 days	73–76 °F (23–24 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Verbena need to be germinated on the dry side at moisture level 3. It is best to water in plug trays to moisture level 3 prior to sow, sow the seeds and then irrigate lightly only when needed to maintain moisture level 3.

Verbena **OBSESSION™ CASCADE** *OP Verbena hybrida*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw, Primed	6–7 weeks	1	Yes	4–7 days	73–76 °F (23–24 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Verbena needs to be germinated on the dry side at moisture level 3. It is best to water in plug trays to moisture level 3 prior to sow, sow the seeds and then irrigate lightly only when needed to maintain moisture level 3.

Verbena **TUSCANY®** *OP Verbena hybrida*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw, Primed	6–7 weeks	1	Yes	4–7 days	73–76 °F (23–24 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Verbena needs to be germinated on the dry side at moisture level 3. It is best to water in plug trays to moisture level 3 prior to sow, sow the seeds and then irrigate lightly only when needed to maintain moisture level 3.

Vinca **BLOCKBUSTER™** *F1 Catharanthus roseus*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	5 weeks	1	Yes	7–8 days	75–78 °F (24–25 °C)	Not required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Soil temperatures lower than 75 °F (23 °C) during germination may decrease germination rates. Keeping media pH at 5.8 or lower will help reduce the likelihood of Thielaviopsis infections.

Vinca **CORA® CASCADE XDR** *F1 Catharanthus roseus*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	5 weeks	1	Yes	7–8 days	76–78 °F (24–25 °C)	Not required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Soil temperatures lower than 75 °F (23 °C) during germination may decrease germination rates. Keeping media pH at 5.8 or lower will help reduce the likelihood of Thielaviopsis infections.

Vinca **CORA® CLASSIC** *F1 Catharanthus roseus*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	5 weeks	1	Yes	7–8 days	76–78 °F (24–25 °C)	Not required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Soil temperatures lower than 75 °F (23 °C) during germination may decrease germination rates. Keeping media pH at 5.8 or lower will help reduce the likelihood of Thielaviopsis infections.

Vinca **CORA® XDR** *F1 Catharanthus roseus*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	5 weeks	1	Yes	7–8 days	76–78 °F (24–25 °C)	Not required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Soil temperatures lower than 75 °F (23 °C) during germination may decrease germination rates. Keeping media pH at 5.8 or lower will help reduce the likelihood of Thielaviopsis infections.

Vinca **SUNSTORM**<sup>®</sup> *OP Catharanthus roseus*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	5 weeks	1	Yes	7–8 days	76–78 °F (24–25 °C)	Not required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Soil temperatures lower than 75 °F (23 °C) during germination may decrease germination rates. Keeping media pH at 5.8 or lower will help reduce the likelihood of Thielaviopsis infections.

Viola **DELTINI**<sup>™</sup> *F1 Viola cornuta*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw, PreNova <sup>™</sup> 2.0	4–5 weeks	1	Yes	5 days	65–68 °F (18–20 °C)	Required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Keep media pH below 5.8 to help avoid Thielaviopsis infections. Under hot temperatures provide lower light levels to reduce heat stress. Also, if very frequent irrigation occurs due to high temperatures, apply a supplemental feed of Solubor<sup>®</sup> to avoid boron deficiency.

Viola **ENDURIO**<sup>®</sup> *F1 Viola cornuta*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	PreNova <sup>™</sup> 2.0	4–5 weeks	1	Yes	5 days	65–68 °F (18–20 °C)	Required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Keep media pH below 5.8 to help avoid Thielaviopsis infections. Under hot temperatures provide lower light levels to reduce heat stress. Also, if very frequent irrigation occurs due to high temperatures, apply a supplemental feed of Solubor<sup>®</sup> to avoid boron deficiency.

Viola **PENNY**<sup>™</sup> *F1 Viola cornuta*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw, PreNova <sup>™</sup> 2.0	4–5 weeks	1	Yes	5 days	65–68 °F (18–20 °C)	Required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Keep media pH below 5.8 to help avoid Thielaviopsis infections. Under hot temperatures provide lower light levels to reduce heat stress. Also, if very frequent irrigation occurs due to high temperatures, apply a supplemental feed of Solubor<sup>®</sup> to avoid boron deficiency.

Viola **TIGER EYE**<sup>™</sup> *F1 Viola cornuta*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Primed	4–5 weeks	1	Yes	5 days	65–68 °F (18–20 °C)	Required for germination	pH: 5.5–5.9 SME 0.9–1.3 mS/cm

**Comments:** Keep media pH below 5.8 to help avoid Thielaviopsis infections. Under hot temperatures provide lower light levels to reduce heat stress. Also, if very frequent irrigation occurs due to high temperatures, apply a supplemental feed of Solubor<sup>®</sup> to avoid boron deficiency.

Wallflower **SUGAR RUSH**<sup>™</sup> *F1 Cheiranthus cheiri*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Raw	4–5 weeks	1	Yes	9–10 days	68–72 °F (20–22 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** To help prevent stretch and floppiness, sprench with Bonzi<sup>®</sup> at 1 ppm during seedling emergence.

Zinnia **MAGELLAN**<sup>™</sup> *F1 Zinnia elegans*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Detailed, SatinCoat <sup>™</sup>	2–3 weeks	1	Yes	1 day	70–75 °F (21–24 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Transplant Zinnias on time. Stress in the plug can lead to premature flowering.

Zinnia **SHORT STUFF**<sup>™</sup> *F1 Zinnia elegans*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	SatinCoat <sup>™</sup>	2–3 weeks	1	Yes	1 day	70–75 °F (21–24 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Transplant Zinnias on time. Stress in the plug can lead to premature flowering.

Zinnia **SWIZZLE**<sup>™</sup> *F1 Zinnia elegans*

REC TRAY	FORMS	PLUG TIME	SEEDS/CELL	SEED COVER	GERM TIME	SOIL TEMP	GERM LIGHT	MEDIA pH/EC
288-cell tray	Detailed, SatinCoat <sup>™</sup>	2–3 weeks	1	Yes	1 day	70–75 °F (21–24 °C)	Not required for germination	pH: 5.5–5.9 SME 0.5–0.75 mS/cm

**Comments:** Transplant Zinnias on time. Stress in the plug can lead to premature flowering.



Cora® XDR Pink Halo



# Seed Finishing

FotoFinish® Rose Star





Begonia **BADA BING®/BADA BOOM®** *F1 Begonia semperflorens*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	66–68 °F (19–20 °C)	64–66 °F (18–19 °C)	125–175 ppm N	Packs   1 ppp   4–5 weeks Large Packs   1 ppp   4–6 weeks 1 pt.   1 ppp   5–6 weeks 1 qt.   1–2 ppp   5–6 weeks 1.25 qt.   3 ppp   5–7 weeks 2.5 qt.   3 ppp   5–7 weeks 1.5 gal. HB   5–6 ppp   7–8 weeks	Aphids, Thrips	Botrytis

Begonia **BOSSA NOVA™** *F1 Begonia boliviensis*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	2,000–4,000 foot candles (400–800 micro mols)	Obligate long day	66–68 °F (19–20 °C)	58–60 °F (14–16 °C)	200–250 ppm N	1 pt.   1 ppp   7–8 weeks 1 qt.   1 ppp   8–9 weeks 1.25 qt.   1–2 ppp   8–10 weeks 2.5 qt.   1–2 ppp   8–10 weeks 3 qt.   3–5 ppp   8–10 weeks 1.5 gal. HB   3–5 ppp   8–10 weeks 2 gal. HB   5–7 ppp   8–10 weeks	Fungus gnats, Shore flies (during propagation), Thrips	Pythium, Botrytis

Begonia **EUREKA™** *F1 Begonia semperflorens*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	66–68 °F (19–20 °C)	64–66 °F (18–19 °C)	125–175 ppm N	Packs   1 ppp   5–6 weeks Large Packs   1 ppp   5–6 weeks 1 pt.   1 ppp   5–6 weeks 1 qt.   1–2 ppp   6–7 weeks 1.25 qt.   3 ppp   6–8 weeks 2.5 qt.   3 ppp   6–8 weeks 1.5 gal. HB   5–6 ppp   8–9 weeks	Aphids, Thrips	Botrytis

Begonia **TOPSPIN™** *F1 Begonia semperflorens*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	66–68 °F (19–20 °C)	64–66 °F (18–19 °C)	125–175 ppm N	Packs   1 ppp   4–5 weeks 1 pt.   1 ppp   5–6 weeks 1 qt.   1–2 ppp   5–6 weeks 1.25 qt.   3 ppp   5–7 weeks 2.5 qt.   3 ppp   5–7 weeks 1.5 gal. HB   5–6 ppp   7–8 weeks	Aphids, Thrips	Botrytis

Begonia Interspecific **BIONIC™** *F1 Begonia × hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	70–72 °F (21–22 °C)	66–68 °F (19–20 °C)	125–175 ppm N	1 pt.   1 ppp   7–8 weeks 1 qt.   1 ppp   7–8 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1 ppp   8–9 weeks 3 qt.   2–3 ppp   8–9 weeks 1.5 gal. HB   3 ppp   8–9 weeks 1.5 gal. pot   2–3 ppp   8–9 weeks 2 gal. HB   3–4 ppp   9–10 weeks	Aphids, Thrips	Botrytis

Begonia Interspecific **BOWLER™** *F1 Begonia × hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	66–68 °F (19–20 °C)	64–66 °F (18–19 °C)	125–175 ppm N	Large Packs   1 ppp   4–5 weeks 1 pt.   1 ppp   4–5 weeks 1 qt.   1 ppp   4–5 weeks 1.25 qt.   1 ppp   5–6 weeks 2.5 qt.   1 ppp   5–6 weeks 3 qt.   2–3 ppp   6–7 weeks 1.5 gal. HB   3 ppp   7–8 weeks	Aphids, Thrips	Botrytis

FINISH PGRs	TECH TIPS
Cycocel® at 500–1,000 ppm or B-Nine® WSG/Cycocel® tank mixes at 1,500 ppm B-Nine® WSG/300 ppm Cycocel®.	Do not use growing containers that have been used previously and had a crop treated with paclobutrazol grown in them. Most Begonia semperflorens will stop growing if exposed to any level of paclobutrazol. Do not irrigate with recycled water for this reason. It is best to avoid high ammonium fertilizers since these types of fertilizers promote soft, leafy growth and may delay flowering.
FINISH PGRs	TECH TIPS
B-Nine® WSG (1,500–2,500 ppm) alone or in combination with Cycocel® (750–1,000 ppm) are usually sufficient to control growth. A Bonzi® drench (0.25–1 ppm) can also be used to control growth or to hold plants for sale.	Day length is critical to achieving the best quality—maintain a minimum of 14-hour days for more showy plants. Do not bury the plug when transplanting to avoid crown rot. Irrigate early in the day to avoid leaf scorch when high light levels are present. Avoid using high ammonium fertilizers since they will promote larger, softer leaves. If planting multiple plugs per container, make sure the leaves are pointed to the rim of the container so that flowers will be more visible.
FINISH PGRs	TECH TIPS
Usually not required. Cycocel® at 500–1,000 ppm or B-Nine® WSG/Cycocel® tank mixes at 1,500 ppm B-Nine® WSG/300 ppm Cycocel® are effective if needed.	Do not use growing containers that have been used previously and had a crop treated with paclobutrazol grown in them. Most Begonia semperflorens will stop growing if exposed to any level of paclobutrazol. Do not irrigate with recycled water for this reason. It is best to avoid high ammonium fertilizers since these fertilizers promote soft, leafy growth and may delay flowering.
FINISH PGRs	TECH TIPS
Usually not required. If needed due to environmental conditions sprays of Cycocel® at 500–1,000 ppm or B-Nine® WSG/Cycocel® tank mixes at 1,500 ppm B-Nine® WSG/300 ppm Cycocel® are effective.	Topspin Begonia can be finished at cooler temperatures than other series of fibrous Begonia. Dropping the average daily temperature (ADT) by 6 °F (4 °C) will add 1–2 weeks grow time. Minimum night temperature should be 60 °F (16 °C). Do not use growing containers that have been used previously and had a crop treated with paclobutrazol grown in them. Most Begonia semperflorens will stop growing if exposed to any level of paclobutrazol. Do not irrigate with recycled water for this reason. It is best to avoid high ammonium fertilizers since these fertilizers promote soft, leafy growth and may delay flowering.
FINISH PGRs	TECH TIPS
For pint or quart production, a Bonzi® drench at 0.1–0.25 ppm about half way through the finishing cycle will provide excellent control of leaf and plant size. Bonzi® sprays are not recommended as they will reduce flower size. For pints to 10" hanging baskets, sprays of B-Nine® WSG at 2,500 ppm or B-Nine® WSG/Cycocel® tank mixes at 1,500 ppm B-Nine® WSG/300 ppm Cycocel® are effective in reducing leaf size and stem elongation. Plant growth regulator (PGRs) are usually not required for containers larger than 10" hanging baskets. Plant growth can be best controlled through proper moisture, feed, and temperature management.	It is recommended to avoid high ammonium fertilizers since these fertilizers promote soft, leafy growth and may delay flowering.
FINISH PGRs	TECH TIPS
For small containers, such as 306 packs, a Bonzi® drench at 0.25 ppm about halfway through the finishing cycle will provide excellent control of leaf and plant size, but will reduce flower size about 10% temporarily. Bonzi® sprays are not recommended since flower size reduction is significant. For gallons to 10" hanging baskets, sprays of B-Nine® WSG at 2,500 ppm or B-Nine® WSG/Cycocel® tank mixes at 1,500 ppm B-Nine® WSG/300 ppm Cycocel® are effective in reducing leaf size and stem elongation, and will not significantly reduce flower size. Plant growth regulators (PGRs) are usually not required for containers larger than 10" hanging baskets. Plant growth is best controlled through proper moisture, feed, and temperature management.	It is recommended to avoid high ammonium fertilizers since these fertilizers promote soft, leafy growth and may delay flowering.

Begonia Interspecific **TOPHAT™** *F1 Begonia × hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	66–68 °F (19–20 °C)	64–66 °F (18–19 °C)	125–175 ppm N	Large Packs   1 ppp   4–5 weeks 1 pt.   1 ppp   4–5 weeks 1 qt.   1 ppp   4–5 weeks 1.25 qt.   1 ppp   5–6 weeks 2.5 qt.   1 ppp   5–6 weeks 3 qt.   2–3 ppp   6–7 weeks 1.5 gal. HB   3 ppp   7–8 weeks 2 gal. HB   3 ppp   7–8 weeks	Aphids, Thrips	Botrytis

Calendula **COSTA™** *OP Calendula officinalis*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	66–68 °F (19–20 °C)	52–54 °F (11–12 °C)	125–175 ppm N	Packs   1 ppp   4–5 weeks Large Packs   1 ppp   4–5 weeks 1 pt.   1 ppp   5–6 weeks 1 qt.   1 ppp   5–6 weeks 1.25 qt.   1 ppp   6–8 weeks 2.5 qt.   1 ppp   6–8 weeks 3 qt.   2–3 ppp   7–8 weeks 1.5 gal. pot   3–4 ppp   8–10 weeks	Thrips, Whiteflies	Powdery mildew, Botrytis, Pythium

Celosia **BRIGHT SPARKS™** *OP Celosia plumosa erecta*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.8–6.2 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative short day	68–70 °F (20–21 °C)	60–62 °F (16–17 °C)	125–175 ppm N	1 pt.   1 ppp   5–6 weeks 1 qt.   1 ppp   6–8 weeks 1.25 qt.   1 ppp   7–9 weeks 2.5 qt.   1 ppp   7–9 weeks 3 qt.   2–3 ppp   6–7 weeks 1.5 gal. pot   3–4 ppp   6–7 weeks	Spider mites, Thrips, Aphids	Botrytis, Pythium, Powdery mildew

Cleome **SPARKLER™ 2.0** *F1 Cleome hassleriana*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 2.3–2.8 mS/cm, PourThru EC: 3.5–4.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	76–78 °F (24–26 °C)	62–64 °F (17–18 °C)	200–250 ppm N	1.25 qt.   1–2 ppp   10–12 weeks 2.5 qt.   1–2 ppp   10–12 weeks	Fungus gnats	Pythium, Powdery mildew

Cosmos **APOLLO™** *OP Cosmos bipinnatus*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative short day	66–68 °F (19–20 °C)	60–62 °F (16–17 °C)	125–175 ppm N	Packs   1 ppp   4–5 weeks Large Packs   1 ppp   4–5 weeks 1 pt.   1 ppp   6–7 weeks 1 qt.   1 ppp   6–7 weeks 1.25 qt.   1 ppp   7–8 weeks 2.5 qt.   1 ppp   7–8 weeks 3 qt.   3–4 ppp   6–7 weeks 1.5 gal. pot   3–4 ppp   7–8 weeks	Aphids, Thrips	Powdery mildew, Botrytis

Cuphea **SRIRACHA™** *F1 Cuphea llavea*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative short day	78–80 °F (26–27 °C)	68–70 °F (20–21 °C)	125–175 ppm N	1 qt.   1 ppp   8–9 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   2 ppp   8–9 weeks 3 qt.   3 ppp   8–9 weeks	Aphids, Thrips, Whiteflies	Fusarium, Pythium, Thielaviopsis

Dahlia **FRESCO™** *OP Dahlia hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative short day	70–72 °F (21–22 °C)	62–64 °F (17–18 °C)	125–175 ppm N	Large Packs   1 ppp   6–7 weeks 1 pt.   1 ppp   6–8 weeks 1 qt.   1 ppp   6–8 weeks 1.25 qt.   2–3 ppp   6–8 weeks	Aphids, Thrips	Powdery mildew, Pythium, Botrytis

Dahlia **HARLEQUIN™** *OP Dahlia hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative short day	70–72 °F (21–22 °C)	62–64 °F (17–18 °C)	125–175 ppm N	1 pt.   1 ppp   6–7 weeks 1 qt.   1 ppp   6–7 weeks 1.25 qt.   2–3 ppp   6–7 weeks	Aphids, Thrips	Powdery mildew, Pythium, Botrytis.

	FINISH PGRs	TECH TIPS
	For small containers, such as 306 packs, a Bonzi® drench at 0.25 ppm about half way through the finishing cycle will provide excellent control of leaf and plant size, but will reduce flower size about 10% temporarily. Bonzi® sprays are not recommended since flower size reduction is significant. For gallons to 10" hanging baskets, sprays of B-Nine® WSG at 2,500 ppm or B-Nine® WSG/Cycocel® tank mixes at 1,500 ppm B-Nine® WSG/300 ppm Cycocel® are effective in reducing leaf size and stem elongation and will not significantly reduce flower size. Plant growth regulators (PGRs) are usually not required for containers larger than 10" hanging baskets. Plant growth can be best controlled through proper moisture, feed, and temperature management.	It is recommended to avoid high ammonium fertilizers since these fertilizers promote soft, leafy growth and may delay flowering.
	B-Nine® WSG sprays at 2,500–3,500 ppm can be effective to prevent stretch under warmer conditions	Growing cool, on the dry side, and under high light will produce the best quality finished plants. Don't grow too cold though; Costa stops growing when temperatures drop below around 46 °F (8 °C). Avoid using high ammonium fertilizers because they promote soft, leafy growth. A preventative spray program for Powdery Mildew is recommended.
	B-Nine® WSG at 2,500 ppm are effective at reducing stem length and leaf size.	If plugs are budded at transplant, provide 14-hour days for at least 4 weeks to promote bulking of the plants. Keeping soil moist will help prevent premature flowering.
	Recommended are three sprays of Bonzi® at 25 ppm or B-Nine® WSG at 5,000 ppm applied 7–10 days apart, beginning 2 weeks after transplant. B-Nine® WSG may delay flowering by 4–7 days. A Bonzi® drench at 2–4 ppm when the plant has reached the desired height will help prevent stretch at retail.	Cleome grows best in warm days and high light. They are also heavy feeders, so use a constant liquid feed program an ammonium-based fertilizer such as 21–5–20.
	Containers 1 pint and larger, plant growth regulators (PGRs) are usually not necessary. If needed for pack production, spray with B-Nine® WSG at 2,500–5,000 ppm to help control plant height.	Cosmos flower faster under short days. For early spring production, do ensure that the plugs are grown under a 14-hour day length so finished plants will bulk properly.
	To control growth, apply one or two applications of Bonzi® either as a spray at 20–40 ppm or as a drench at 0.5–1.0 ppm.	Cuphea is a facultative short day plant, so it will flower faster and stay more compact under short days. Plants can be finished cool at 50–62 °F (10–17 °C) if desired. If finished cool crop time will increase, but the plants will need less plant growth regulator (PGR) treatments.
	B-Nine® WSG at 2,500-5,000 ppm if needed.	It is critical to provide at least 12 hours or ideally 14 hours of light to help prevent tuber formation and to promote bulking. Planting the plugs deep helps strengthen the main stem. Dahlias are sensitive to overwatering; allow the media to dry between irrigations.
	B-Nine® WSG at 2,500-5,000 ppm if needed.	It is critical to provide at least 12 hours and ideally 14 hours of light to help prevent tuber formation and to promote bulking. Planting the plugs deep will help strengthen the main stem. Dahlias are sensitive to overwatering; allow the media to dry between irrigations.

Dianthus **DIABUNDA®** F1 *Dianthus x barbatus*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	3,500–4,500 foot candles (700–900 micro mols)	Facultative long day	62–64 °F (17–18 °C)	62–64 °F (17–18 °C)	125–175 ppm N	Packs   1 ppp   5–7 weeks 1 pt.   1 ppp   6–8 weeks 1 qt.   1–2 ppp   6–9 weeks 1.25 qt.   3 ppp   6–9 weeks 2.5 qt.   3 ppp   6–9 weeks	Aphids, Thrips, Spider mites	Fusarium, Alternaria, Botrytis

Dianthus **SUPER PARFAIT™** F1 *Dianthus chinensis*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	3,500–4,500 foot candles (700–900 micro mols)	Facultative long day	62–64 °F (17–18 °C)	62–64 °F (17–18 °C)	125–175 ppm N	Packs   1 ppp   9–11 weeks 1 pt.   1 ppp   9–11 weeks 1 qt.   1–2 ppp   10–12 weeks 1.25 qt.   3 ppp   10–12 weeks 2.5 qt.   3 ppp   10–12 weeks	Aphids, Thrips, Spider mites	Fusarium, Alternaria, Botrytis

Dianthus **VENTI PARFAIT™** F1 *Dianthus chinensis*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	3,500–4,500 foot candles (700–900 micro mols)	Facultative long day	62–64 °F (17–18 °C)	62–64 °F (17–18 °C)	125–175 ppm N	Packs   1 ppp   9–11 weeks Large Packs   1 ppp   9–11 weeks 1 pt.   1 ppp   9–11 weeks 1 qt.   1–2 ppp   10–12 weeks 1.25 qt.   3 ppp   10–12 weeks 2.5 qt.   3 ppp   10–12 weeks	Aphids, Thrips, Spider mites	Fusarium, Alternaria, Botrytis

English Daisy / Bellis **BAM BAM™** OP *Bellis perennis*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	62–64 °F (17–18 °C)	48–50 °F (9–10 °C)	125–175 ppm N	Packs   1 ppp   11–13 weeks Large Packs   1 ppp   11–13 weeks 1 pt.   1 ppp   13–15 weeks 1 qt.   1 ppp   13–15 weeks 1.25 qt.   1–2 ppp   13–15 weeks	Aphids, Thrips	Crown Rot, Phoma, Rust

Gazania **BIG KISS™** F1 *Gazania rigens*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	6,000–8,000 foot candles (1,200–1,600 micro mols)	Facultative long day	70–72 °F (21–22 °C)	58–60 °F (14–16 °C)	125–175 ppm N	1 pt.   1 ppp   8–10 weeks 1 qt.   1 ppp   9–11 weeks 1.25 qt.   2–3 ppp   9–11 weeks 2.5 qt.   2–3 ppp   9–11 weeks 3 qt.   3–4 ppp   9–11 weeks	Aphids, Thrips, Spider mites	Botrytis, Rhizoctonia, Sclerotinia

Gazania **FROSTY KISS™** F1 *Gazania rigens*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	6,000–8,000 foot candles (1,200–1,600 micro mols)	Facultative long day	70–72 °F (21–22 °C)	58–60 °F (14–16 °C)	125–175 ppm N	Packs   1 ppp   8–9 weeks Large Packs   1 ppp   8–9 weeks 1 pt.   1 ppp   8–10 weeks 1 qt.   1–2 ppp   9–11 weeks 1.25 qt.   3 ppp   9–11 weeks 2.5 qt.   3 ppp   9–11 weeks	Aphids, Thrips, Spider mites	Botrytis, Rhizoctonia, Sclerotinia

Gazania **GAZOO™** OP *Gazania rigens*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	6,000–8,000 foot candles (1,200–1,600 micro mols)	Facultative long day	70–72 °F (21–22 °C)	58–60 °F (14–16 °C)	125–175 ppm N	1 pt.   1 ppp   8–10 weeks 1 qt.   1–2 ppp   9–11 weeks 1.25 qt.   3 ppp   9–11 weeks 2.5 qt.   3 ppp   9–11 weeks 3 qt.   3–4 ppp   9–11 weeks	Aphids, Thrips, Spider mites	Botrytis, Rhizoctonia, Sclerotinia

Gazania **KISS™** F1 *Gazania rigens*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	6,000–8,000 foot candles (1,200–1,600 micro mols)	Facultative long day	70–72 °F (21–22 °C)	58–60 °F (14–16 °C)	125–175 ppm N	Large Packs   1 ppp   8–9 weeks 1 pt.   1 ppp   8–10 weeks 1 qt.   1–2 ppp   9–11 weeks 1.25 qt.   3 ppp   9–11 weeks 2.5 qt.   3 ppp   9–11 weeks	Aphids, Thrips, Spider mites	Botrytis, Rhizoctonia, Sclerotinia

	FINISH PGRs	TECH TIPS
	If needed spray with Bonzi® at 5–8 ppm.	Providing high light and growing cool will reduce the need for PGRs. Dianthus also responds well to a 5–10 °F (3–6 °C) negative DIF in the early morning. Day extension lighting to 14 hours will hasten flowering.

	FINISH PGRs	TECH TIPS
	If needed, spray with Bonzi® at 5–8 ppm.	Providing high light and growing cool will reduce the need for PGRs. Dianthus also responds well to a 5–10 °F (3–6 °C) negative DIF in the early morning. Day extension lighting to 14 hours will hasten flowering.

	FINISH PGRs	TECH TIPS
	If needed, spray with Bonzi® at 5–8 ppm.	Providing high light and growing cool will reduce the need for PGRs. Dianthus also responds well to a 5–10 °F (3–6 °C) negative DIF in the early morning. Day extension lighting to 14 hours will hasten flowering.

	FINISH PGRs	TECH TIPS
	B-Nine® WSG at 1,000–2,000 ppm are effective in controlling plant growth.	Do not overwater Bellis to avoid crown rot.

	FINISH PGRs	TECH TIPS
	Usually not needed.	Do not bury the crown when transplanting to avoid crown rot. Grow on the dry side.

	FINISH PGRs	TECH TIPS
	Usually not needed.	Do not bury the crown when transplanting to avoid crown rot. Grow on the dry side.

	FINISH PGRs	TECH TIPS
	Usually not needed.	Do not bury the crown when transplanting to avoid crown rot. Grow on the dry side.

	FINISH PGRs	TECH TIPS
	Usually not needed.	Do not bury the crown when transplanting to avoid crown rot. Grow on the dry side.

Geranium **BULLSEYE™** *F1 Pelargonium × hortorum*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 6.1–6.5 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	6,000–8,000 foot candles (1,200–1,600 micro mols)	Day neutral	70–72 °F (21–22 °C)	60–62 °F (16–17 °C)	200–250 ppm N	1 pt. l 1 ppp   7–10 weeks 1 qt. l 1 ppp   8–10 weeks 1.25 qt. l 1 ppp   8–10 weeks 2.5 qt. l 2 ppp   10–12 weeks 3 qt. l 3 ppp   10–12 weeks 1.5 gal. HB   3–5 ppp   10–12 weeks 1.5 gal. pot   3–5 ppp   10–12 weeks 2 gal. HB   5 ppp   10–12 weeks	Aphids, Thrips	Botrytis, Pythium, Alternaria, Rust, Bacterial root and leaf diseases

Geranium **MAVERICK™** *F1 Pelargonium × hortorum*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 6.1–6.5 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	6,000–8,000 foot candles (1,200–1,600 micro mols)	Day neutral	70–72 °F (21–22 °C)	60–62 °F (16–17 °C)	200–250 ppm N	1 qt. l 1 ppp   8–10 weeks 1.25 qt. l 1 ppp   8–10 weeks 2.5 qt. l 2 ppp   10–12 weeks 3 qt. l 3 ppp   10–12 weeks 1.5 gal. HB   3–5 ppp   10–12 weeks 1.5 gal. pot   3–5 ppp   10–12 weeks 2 gal. HB   5 ppp   10–12 weeks	Aphids, Thrips	Botrytis, Pythium, Alternaria, Rust, Bacterial root and leaf diseases

Geranium **MULTIBLOOM™** *F1 Pelargonium × hortorum*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 6.1–6.5 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	6,000–8,000 foot candles (1,200–1,600 micro mols)	Day neutral	70–72 °F (21–22 °C)	60–62 °F (16–17 °C)	200–250 ppm N	Large Packs   1 ppp   6–7 weeks 1 pt. l 1 ppp   6–8 weeks 1 qt. l 1 ppp   7–9 weeks 1.25 qt. l 1 ppp   8–10 weeks	Aphids, Thrips	Botrytis, Pythium, Alternaria, Rust, Bacterial root and leaf diseases

Geranium **PINTO™ PREMIUM** *F1 Pelargonium × hortorum*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 6.1–6.5 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	6,000–8,000 foot candles (1,200–1,600 micro mols)	Day neutral	70–72 °F (21–22 °C)	60–62 °F (16–17 °C)	200–250 ppm N	1 pt. l 1 ppp   7–10 weeks 1 qt. l 1 ppp   8–10 weeks 1.25 qt. l 1 ppp   8–10 weeks 2.5 qt. l 2 ppp   10–12 weeks 3 qt. l 3 ppp   10–12 weeks 1.5 gal. HB   3–5 ppp   10–12 weeks 1.5 gal. pot   3–5 ppp   10–12 weeks 2 gal. HB   5 ppp   10–12 weeks	Aphids, Thrips	Botrytis, Pythium, Alternaria, Rust, Bacterial root and leaf diseases

Geranium **QUANTUM™** *F1 Pelargonium × hortorum*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 6.1–6.5 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	6,000–8,000 foot candles (1,200–1,600 micro mols)	Day neutral	70–72 °F (21–22 °C)	60–62 °F (16–17 °C)	200–250 ppm N	Large Packs   1 ppp   9–11 weeks 1 pt. l 1 ppp   11–12 weeks 1 qt. l 1 ppp   11–12 weeks 1.25 qt. l 1 ppp   12–13 weeks 2.5 qt. l 1 ppp   12–13 weeks 3 qt. l 3–5 ppp   12–13 weeks 1.5 gal. pot   3–5 ppp   12–13 weeks	Aphids, Thrips	Botrytis, Pythium, Alternaria, Rust, Bacterial root and leaf diseases

FINISH PGRs	TECH TIPS
<p>3–5 sprays of Cycocel® at 750 ppm will help control growth and speed flowering. Do not apply more than 750 ppm Cycocel® or leaf edge yellowing may occur. Using a spray adjuvant such as CapSil® will reduce the chance of leaf edge yellowing. Spray every 10–14 days depending on environmental conditions and plant growth. Stop applying Cycocel® when flower buds are visible.</p>	<p>Geraniums are irradiance plants so the more light they receive the faster they will flower. Under short days or cloudy conditions it is beneficial to provide supplemental lighting of around 400 foot candles (4,000 lux) to speed up flowering. All geraniums are especially sensitive to bacterial diseases so be sure to start with clean containers, media and growing areas. Do not subirrigate or use recycled water. Do not grow a hanging Geranium crop over another Geranium crop. Media pH should not drop below 6.0 or the plants may suffer from iron and/or manganese toxicity. Avoid use of ammonium-based fertilizers to help maintain proper media pH. Instead, use nitrate-based Cal-Mag® Plus fertilizers for the entire growth cycle of Geraniums. Keeping media saturated will promote Pythium root rot infections. Proper air circulation is very important at time of flowering to reduce likelihood of Botrytis flower petal blight.</p>

FINISH PGRs	TECH TIPS
<p>3–5 sprays of Cycocel® at 750 ppm will help control growth and speed flowering. Do not apply more than 750 ppm Cycocel® or leaf edge yellowing may occur. Using a spray adjuvant such as CapSil® will reduce the chance of leaf edge yellowing. Spray every 10–14 days depending on environmental conditions and plant growth. Stop applying Cycocel® when flower buds are visible.</p>	<p>Geraniums are irradiance plants so the more light they receive the faster they will flower. Under short days or cloudy conditions it is beneficial to provide supplemental lighting of around 400 foot candles (4,000 lux) to speed up flowering. All geraniums are especially sensitive to bacterial diseases so be sure to start with clean containers, media and growing areas. Do not subirrigate or use recycled water. Do not grow a hanging Geranium crop over another Geranium crop. Media pH should not drop below 6.0 or the plants may suffer from iron and/or manganese toxicity. Avoid use of ammonium-based fertilizers to help maintain proper media pH. Instead, use nitrate-based Cal-Mag® Plus fertilizers for the entire growth cycle of Geraniums. Keeping media saturated will promote Pythium root rot infections. Proper air circulation is very important at time of flowering to reduce likelihood of Botrytis flower petal blight.</p>

FINISH PGRs	TECH TIPS
<p>2–3 sprays of Cycocel® at 750 ppm will help control growth and speed flowering, and is recommended for pack production. Depending on environmental conditions pints may not need any plant growth regulator (PGR) applications except in the plug stage. Do not apply more than 750 ppm Cycocel® or leaf edge yellowing may occur. Using a spray adjuvant such as CapSil® will reduce the chance of leaf edge yellowing. Spray every 10–14 days depending on environmental conditions and plant growth. Stop applying Cycocel® when flower buds are plainly visible.</p>	<p>Geraniums are irradiance plants so the more light they receive the faster they will flower. Under short days or cloudy conditions it is beneficial to provide supplemental lighting of around 400 foot candles (4,000 lux) to speed up flowering. All geraniums are especially sensitive to bacterial diseases so be sure to start with clean containers, media and growing areas. Do not subirrigate or use recycled water. Do not grow a hanging Geranium crop over another Geranium crop. Media pH should not drop below 6.0 or the plants may suffer from iron and/or manganese toxicity. Avoid use of ammonium-based fertilizers to help maintain proper media pH. Instead, use nitrate-based Cal-Mag® Plus fertilizers for the entire growth cycle of Geraniums. Keeping media saturated will promote Pythium root rot infections. Proper air circulation is very important at time of flowering to reduce likelihood of Botrytis flower petal blight.</p>

FINISH PGRs	TECH TIPS
<p>3–5 sprays of Cycocel® at 750 ppm will help control growth and speed flowering. Do not apply more than 750 ppm Cycocel® or leaf edge yellowing may occur. Using a spray adjuvant such as CapSil® will reduce the chance of leaf edge yellowing. Spray every 10–14 days depending on environmental conditions and plant growth. Stop applying Cycocel® when flower buds are visible.</p>	<p>Geraniums are irradiance plants so the more light they receive the faster they will flower. Under short days or cloudy conditions it is beneficial to provide supplemental lighting of around 400 foot candles (4,000 lux) to speed up flowering. All geraniums are especially sensitive to bacterial diseases so be sure to start with clean containers, media and growing areas. Do not subirrigate or use recycled water. Do not grow a hanging Geranium crop over another Geranium crop. Media pH should not drop below 6.0 or the plants may suffer from iron and/or manganese toxicity. Avoid use of ammonium-based fertilizers to help maintain proper media pH. Instead, use nitrate-based Cal-Mag® Plus fertilizers for the entire growth cycle of Geraniums. Keeping media saturated will promote Pythium root rot infections. Proper air circulation is very important at time of flowering to reduce likelihood of Botrytis flower petal blight.</p>

FINISH PGRs	TECH TIPS
<p>3–5 sprays of Cycocel® at 750 ppm will help control growth and speed flowering. Do not apply more than 750 ppm Cycocel® or leaf edge yellowing may occur. Using a spray adjuvant such as CapSil® will reduce the chance of leaf edge yellowing. Spray every 10–14 days depending on environmental conditions and plant growth. Stop applying Cycocel® when flower buds are visible.</p>	<p>Geraniums are irradiance plants; the more light they receive, the faster they will flower. Under short days or cloudy conditions, it is beneficial to provide supplemental lighting of around 400 foot candles (4,000 lux) to speed up flowering. All geraniums are especially sensitive to bacterial diseases, so be sure to start with clean containers, media and growing areas. Do not subirrigate or use recycled water. Do not grow a hanging Geranium crop over another Geranium crop. Media pH should not drop below 6.0, or the plants may suffer from iron and/or manganese toxicity. Avoid the use of ammonium-based fertilizers to help maintain proper media pH. Instead, use nitrate-based Cal-Mag® fertilizers for the entire growth cycle of Geraniums. Keeping media saturated will promote Pythium root rot infections. Proper air circulation is critical at the time of flowering to reduce the likelihood of Botrytis flower petal blight.</p>

Geranium **RINGO 2000™** *F1 Pelargonium × hortorum*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 6.1–6.5 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	6,000–8,000 foot candles (1,200–1,600 micro mols)	Day neutral	70–72 °F (21–22 °C)	60–62 °F (16–17 °C)	200–250 ppm N	Packs   1 ppp   7–8 weeks Large Packs   1 ppp   7–8 weeks 1 pt.   1 ppp   6–8 weeks 1 qt.   1 ppp   8–10 weeks 1.25 qt.   1 ppp   8–10 weeks 1.5 gal. HB   4–5 ppp   10–12 weeks	Aphids, Thrips	Botrytis, Pythium, Alternaria, Rust, Bacterial root and leaf diseases

Geranium Ivy **REACH OUT™** *F1 Pelargonium peltatum*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.8–6.2 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	66–68 °F (19–20 °C)	60–62 °F (16–17 °C)	125–175 ppm N	1 pt.   1 ppp   8–9 weeks 1 qt.   1 ppp   9–10 weeks 1.25 qt.   2–3 ppp   9–10 weeks 2.5 qt.   2–3 ppp   9–10 weeks 3 qt.   2–3 ppp   9–10 weeks 1.5 gal. HB   3–5 ppp   10–12 weeks 2 gal. HB   5–6 ppp   10–12 weeks	Fungus gnats, Shore flies, Thrips	Botrytis, Rhizoctonia, Pythium, Thielaviopsis, Bacterial root and leaf diseases

Geranium Ivy **TORNADO™** *F1 Pelargonium peltatum*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.8–6.2 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	68–70 °F (20–21 °C)	60–62 °F (16–17 °C)	125–175 ppm N	1 qt.   1 ppp   8–9 weeks 1.25 qt.   2–3 ppp   9–10 weeks 2.5 qt.   2–3 ppp   9–10 weeks 3 qt.   3–4 ppp   10–11 weeks 1.5 gal. HB   3–5 ppp   10–11 weeks 2 gal. HB   5–7 ppp   10–11 weeks	Fungus gnats, Shore flies, Thrips	Botrytis, Rhizoctonia, Pythium, Thielaviopsis, Bacterial root and leaf diseases

Gerbera **BENGAL™** *F1 Gerbera jamesonii*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative short day	70–72 °F (21–22 °C)	66–68 °F (19–20 °C)	125–175 ppm N	1.25 qt.   1 ppp   10–11 weeks 2.5 qt.   1 ppp   10–11 weeks 3 qt.   3 ppp   11–12 weeks 1.5 gal. HB   3 ppp   11–12 weeks 1.5 gal. pot.   3 ppp   11–12 weeks	Aphids, Fungus gnats, Shore flies, Broad mites, Cyclamen mites, Spider mites, Thrips, Whiteflies, Leafminers	Alternaria, Botrytis, Powdery mildew, Phytophthora, Rhizoctonia, Pythium

Gerbera **CARTWHEEL®** *F1 Gerbera jamesonii*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative short day	70–72 °F (21–22 °C)	66–68 °F (19–20 °C)	125–175 ppm N	1.25 qt.   1 ppp   10–11 weeks 2.5 qt.   1 ppp   10–11 weeks 3 qt.   3 ppp   11–12 weeks 1.5 gal. pot.   3 ppp   11–12 weeks	Aphids, Fungus gnats, Shore flies, Broad mites, Cyclamen mites, Spider mites, Thrips, Whiteflies, Leafminers	Alternaria, Botrytis, Powdery mildew, Phytophthora, Rhizoctonia, Pythium

Gerbera **ELEPHANT™** *F1 Gerbera jamesonii*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative short day	70–72 °F (21–22 °C)	66–68 °F (19–20 °C)	125–175 ppm N	1.25 qt.   1 ppp   9–10 weeks 2.5 qt.   1 ppp   9–10 weeks 3 qt.   2–3 ppp   10–11 weeks 1.5 gal. pot.   3 ppp   10–11 weeks	Aphids, Fungus gnats, Shore flies, Broad mites, Cyclamen mites, Spider mites, Thrips, Whiteflies, Leafminers	Alternaria, Botrytis, Powdery mildew, Phytophthora, Rhizoctonia, Pythium

FINISH PGRs	TECH TIPS
<p>A total of 2-3 sprays of Cycocel® at 750 ppm will help control growth and speed flowering. Do not apply more than 750 ppm Cycocel® or leaf edge yellowing may occur. Using a spray adjuvant such as CapSil® will reduce the chance of leaf edge yellowing. Spray every ten days to two weeks depending on environmental conditions and plant growth. Stop applying Cycocel® when flower buds are visible.</p>	<p>Geraniums are irradiance plants so the more light they receive the faster they will flower. Under short days or cloudy conditions it is beneficial to provide supplemental lighting of around 400 foot candles (4,000 lux) to speed up flowering. All geraniums are especially sensitive to bacterial diseases so be sure to start with clean containers, media and growing areas. Do not subirrigate or use recycled water. Do not grow a hanging Geranium crop over another Geranium crop. Media pH should not drop below 6.0 or the plants may suffer from iron and/or manganese toxicity. Avoid use of ammonium-based fertilizers to help maintain proper media pH. Instead, use nitrate-based Cal-Mag® Plus fertilizers for the entire growth cycle of Geraniums. Keeping media saturated will promote Pythium root rot infections. Proper air circulation is very important at time of flowering to reduce likelihood of Botrytis flower petal blight.</p>

FINISH PGRs	TECH TIPS
<p>If necessary sprays of Cycocel® at 300–500 ppm will help control growth. Do not apply more than 750 ppm Cycocel® or leaf edge yellowing may occur. Using a spray adjuvant such as CapSil® will reduce the chance of leaf edge yellowing.</p>	<p>Ivy Geraniums are irradiance plants so the more light they receive the faster they will flower. Under short days or cloudy conditions it is beneficial to provide supplemental lighting of around 400 foot candles (4,000 lux) to speed up flowering. All geraniums are especially sensitive to bacterial diseases so be sure to start with clean containers, media and growing areas. Do not subirrigate or use recycled water. Do not grow a hanging Geranium crop over another Geranium crop. Keeping media saturated will promote Pythium root rot infections. Proper air circulation is very important at time of flowering to reduce likelihood of Botrytis flower petal blight.</p>

FINISH PGRs	TECH TIPS
<p>If necessary sprays of Cycocel® at 300–500 ppm will help control growth. Do not apply more than 750 ppm Cycocel® or leaf edge yellowing may occur. Using a spray adjuvant such as CapSil® will reduce the chance of leaf edge yellowing.</p>	<p>Ivy Geraniums are irradiance plants so the more light they receive the faster they will flower. Under short days or cloudy conditions it is beneficial to provide supplemental lighting of around 400 foot candles (4,000 lux) to speed up flowering. All geraniums are especially sensitive to bacterial diseases so be sure to start with clean containers, media and growing areas. Do not subirrigate or use recycled water. Do not grow a hanging Geranium crop over another Geranium crop. Keeping media saturated will promote Pythium root rot infections. Proper air circulation is very important at time of flowering to reduce likelihood of Botrytis flower petal blight.</p>

FINISH PGRs	TECH TIPS
<p>B-Nine® WSG at 2,500–5,000 ppm or A-Rest® at 1–3 ppm</p>	<p>It is critical to not plant the plug too deep so as to bury the crown. Buried crowns can lead to hard, distorted growth or crown rot. Space plants on time so the leaves from one plant will not cover the center of another; shading the crown will delay flowering.</p>

FINISH PGRs	TECH TIPS
<p>B-Nine® WSG at 2,500–5,000 ppm or A-Rest® at 1–3 ppm are effective if needed.</p>	<p>It is critical to not plant the plug too deep so as to bury the crown. Buried crowns can lead to hard, distorted growth or crown rot. Space plants on time so the leaves from one plant will not cover the center of another; shading the crown will delay flowering.</p>

FINISH PGRs	TECH TIPS
<p>B-Nine® WSG at 2,500–5,000 ppm or A-Rest® at 1–3 ppm are effective if needed.</p>	<p>It is critical to not plant the plug too deep so as to bury the crown. Buried crowns can lead to hard, distorted growth or crown rot. Space plants on time so the leaves from one plant will not cover the center of another; shading the crown will delay flowering.</p>

Gerbera **JAGUAR™** F1 *Gerbera jamesonii*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative short day	70–72 °F (21–22 °C)	66–68 °F (19–20 °C)	125–175 ppm N	1 pt.   1 ppp   9–10 weeks 1 qt.   1 ppp   9–11 weeks 1.25 qt.   1–2 ppp   9–11 weeks 2.5 qt.   2–3 ppp   9–11 weeks 3 qt.   3–5 ppp   10–12 weeks 1.5 gal. HB   3–5 ppp   10–12 weeks	Aphids, Fungus gnats, Shore flies, Broad mites, Cyclamen mites, Spider mites, Thrips, Whiteflies, Leafminers	Alternaria, Botrytis, Powdery mildew, Phytophthora, Rhizoctonia, Pythium.

Hibiscus **HONEYMOON™** F1 *Hibiscus moscheutos*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 6.1–6.5 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	6,000–8,000 foot candles (1,200–1,600 micro mols)	Obligate long day	76–78 °F (24–26 °C)	68–70 °F (20–21 °C)	200–250 ppm N	1 pt.   1 ppp   7–9 weeks 1 qt.   1 ppp   7–9 weeks 1.25 qt.   1 ppp   8–10 weeks 2.5 qt.   1 ppp   8–10 weeks 3 qt.   1 ppp   9–11 weeks 1.5 gal. pot   1 ppp   9–11 weeks	Whiteflies, Spider mites, Thrips, Aphids	Botrytis

Impatiens **ACCENT™** F1 *Impatiens walleriana*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.8–6.2 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	2,000–4,000 foot candles (400–800 micro mols)	Day neutral	72–74 °F (22–23 °C)	62–64 °F (17–18 °C)	75–125 ppm N	Packs   1 ppp   5–6 weeks Large Packs   1 ppp   5–6 weeks 1 pt.   1 ppp   6–7 weeks 1 qt.   1–2 ppp   6–7 weeks 1.25 qt.   2–3 ppp   7–8 weeks 2.5 qt.   3–4 ppp   7–8 weeks 3 qt.   5–7 ppp   9–10 weeks 1.5 gal. HB   5–7 ppp   9–10 weeks 1.5 gal. pot   5–7 ppp   9–10 weeks	Thrips, Fungus gnats, Aphids, Spider mites	Impatiens downy mildew, Pythium root rot, Botrytis blight, INSV, TSWW, Pseudomonas, Rhizoctonia, Alternaria leaf spot

Impatiens **ACCENT™ PREMIUM** F1 *Impatiens walleriana*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.8–6.2 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	2,000–4,000 foot candles (400–800 micro mols)	Day neutral	72–74 °F (22–23 °C)	62–64 °F (17–18 °C)	75–125 ppm N	Packs   1 ppp   5–6 weeks Large Packs   1 ppp   5–6 weeks 1 pt.   1 ppp   6–7 weeks 1 qt.   1–2 ppp   6–7 weeks 1.25 qt.   2–3 ppp   7–8 weeks 2.5 qt.   3–4 ppp   7–8 weeks 3 qt.   5–7 ppp   9–10 weeks 1.5 gal. HB   5–7 ppp   9–10 weeks 1.5 gal. pot   5–7 ppp   9–10 weeks	Thrips, Fungus gnats, Aphids, Spider mites	Impatiens downy mildew, Pythium root rot, Botrytis blight, INSV, TSWW, Pseudomonas, Rhizoctonia, Alternaria leaf spot

Impatiens **ATHENA™** F1 *Impatiens walleriana*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.8–6.2 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	2,000–4,000 foot candles (400–800 micro mols)	Day neutral	72–74 °F (22–23 °C)	62–64 °F (17–18 °C)	75–125 ppm N	Large Packs   1 ppp   5–6 weeks 1 pt.   1 ppp   5–6 weeks 1 qt.   1 ppp   6–7 weeks 1.25 qt.   1–3 ppp   7–8 weeks 2.5 qt.   1–3 ppp   7–8 weeks 3 qt.   5–7 ppp   8–10 weeks 1.5 gal. HB   5–7 ppp   8–10 weeks 1.5 gal. pot   5–7 ppp   8–10 weeks 2 gal. HB   5–7 ppp   8–10 weeks	Thrips, Fungus gnats, Aphids, Spider mites	Impatiens Downy Mildew, Pythium root rot, Botrytis blight, INSV, TSWW, Pseudomonas, Rhizoctonia and Alternaria leaf spot

Impatiens **IMARA® XDR** F1 *Impatiens walleriana*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.8–6.2 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	2,000–4,000 foot candles (400–800 micro mols)	Day neutral	72–74 °F (22–23 °C)	62–64 °F (17–18 °C)	75–125 ppm N	Packs   1 ppp   4–5 weeks Large Packs   1 ppp   4–5 weeks 1 pt.   1 ppp   6–7 weeks 1 qt.   1–2 ppp   6–7 weeks 1.25 qt.   1–3 ppp   7–8 weeks 2.5 qt.   3–4 ppp   7–8 weeks 3 qt.   5–7 ppp   9–10 weeks 1.5 gal. HB   5–7 ppp   9–10 weeks 1.5 gal. pot   5–7 ppp   9–10 weeks	Thrips, Fungus gnats, Aphids, Spider mites	Pythium root rot, Botrytis blight, INSV, TSWW, Pseudomonas, Rhizoctonia, Alternaria leaf spot

FINISH PGRs	TECH TIPS
B-Nine® WSG at 2,500–5,000 ppm or A-Rest® at 1–3 ppm are effective if needed. Under long day conditions leaves will be larger so more frequent PGR applications may be necessary.	It is critical to not plant the plug too deep so as to bury the crown. Buried crowns can lead to hard, distorted growth or crown rot. Space plants on time so the leaves from one plant will not cover the center of another; shading the crown will delay flowering.
FINISH PGRs	TECH TIPS
B-Nine® WSG at 2,500 ppm and Cycocel® at 800 ppm two weeks after transplant is highly effective for reducing height and producing a compact, well-branched plant. In warmer conditions, a second application is beneficial.	Avoid drying the media too much since this can cause premature flower bud abortion. Grow under high light levels for top quality. Leaves may show chlorosis if plants are grown too cool.
FINISH PGRs	TECH TIPS
Responsive to B-Nine® WSG, Bonzi®, and Sumagic®.	Use a calcium-based fertilizer and feed once a week at most to avoid soft growth and stretching of plants. Do not let plants go into the night with wet foliage or tip abortion may occur, especially during early stages of growth. Downward cupping or twisting of immature leaves may be caused by overuse of plant growth regulators (PGRs). It is better to use less water and fertilizer than PGRs to control growth. Preventive fungicide applications for foliar and root disease are recommended, especially in high humidity environments. Subdue Maxx®, Mural®, Micora®, and Segovis® fungicides can be used in a rotation program to control the common disease problems of Impatiens.
FINISH PGRs	TECH TIPS
Responsive to B-Nine® WSG, Bonzi®, and Sumagic®.	Use a calcium-based fertilizer and feed once a week at most to avoid soft growth and stretching of plants. Do not let plants go into the night with wet foliage or tip abortion may occur, especially during early stages of growth. Downward cupping or twisting of immature leaves may be caused by overuse of plant growth regulators (PGRs). It is better to use less water and fertilizer than PGRs to control growth. Preventive fungicide applications for foliar and root disease are recommended, especially in high humidity environments. Subdue Maxx®, Mural®, Micora®, and Segovis® fungicides can be used in a rotation program to control the common disease problems of Impatiens.
FINISH PGRs	TECH TIPS
Responsive to B-Nine® WSG, Bonzi®, and Sumagic®.	Use a calcium-based fertilizer and feed once a week at most to avoid soft growth and stretching of plants. Do not let plants go into the night with wet foliage or tip abortion may occur, especially during the early stages of growth. Downward cupping or twisting of immature leaves may be caused by overuse of plant growth regulators (PGRs). It is better to use less water and fertilizer than PGRs to control growth. Preventive fungicide applications for foliar and root disease are recommended, especially in high humidity environments. Subdue Maxx®, Mural®, Micora®, and Segovis® fungicides can be used in a rotation program to control the common disease problems of Impatiens.
FINISH PGRs	TECH TIPS
Responsive to B-Nine® WSG, Bonzi®, and Sumagic®.	Use a calcium-based fertilizer and feed once a week at most to avoid soft growth and stretching of plants. Do not let plants go into the night with wet foliage or tip abortion may occur, especially during early stages of growth. Downward cupping or twisting of immature leaves may be caused by overuse of plant growth regulators (PGRs). It is better to use less water and fertilizer than PGRs to control growth. Preventive fungicide applications for foliar and root disease are recommended, especially in high humidity environments. Subdue Maxx®, Mural®, Micora®, and Segovis® fungicides can be used in a rotation program to control the common disease problems of Impatiens.

Impatiens **XTREME™** *F1 Impatiens walleriana*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.8–6.2 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	2,000–4,000 foot candles (400–800 micro mols)	Day neutral		62–64 °F (17–18 °C)	75–125 ppm N	Packs   1 ppp   5–6 weeks Large Packs   1 ppp   5–6 weeks 1 pt.   1 ppp   6–7 weeks 1 qt.   1–2 ppp   6–7 weeks 1.25 qt.   2–3 ppp   7–8 weeks 1.5 gal. HB   5–7 ppp   9–10 weeks 1.5 gal. pot   5–7 ppp   9–10 weeks	Thrips, Fungus gnats, Aphids, Spider mites	Impatiens downy mildew, Pythium root rot, Botrytis blight, INSV, TSWV, Pseudomonas, Rhizoctonia, Alternaria leaf spot

Impatiens New Guinea **FLORIFIC®** *F1 Impatiens hawkeri*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.8–6.2 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	2,000–4,000 foot candles (400–800 micro mols)	Day neutral	76–78 °F (24–26 °C)	66–68 °F (19–20 °C)	75–125 ppm N	Large Packs   1 ppp   7–9 weeks 1 pt.   1 ppp   7–9 weeks 1 qt.   1 ppp   7–9 weeks 1.25 qt.   1–2 ppp   7–9 weeks 2.5 qt.   2–3 ppp   8–10 weeks 1.5 gal. HB   3–5 ppp   8–10 weeks	Fungus gnats, Spider mites, Thrips	Botrytis, Pythium, Rhizoctonia, Tomato Spotted Wilt Virus, Impatiens Necrotic Spot Virus. Florific New Guinea Impatiens are highly resistant to Impatiens downy mildew.

Marigold African **ANTIGUA™** *F1 Tagetes erecta*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 0 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative short day	68–70 °F (20–21 °C)	58–60 °F (14–16 °C)	125–175 ppm N	Packs   1 ppp   6–7 weeks Large Packs   1 ppp   7–8 weeks 1 qt.   1 ppp   7–8 weeks	Spider mites, Thrips, Leafminers, Aphids, Whiteflies	Alternaria leaf spot, Botrytis, Pythium

Marigold African **BIG TOP™** *F1 Tagetes erecta*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 6.1–6.5 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative short day	68–70 °F (20–21 °C)	58–60 °F (14–16 °C)	125–175 ppm N	1 pt.   1 ppp   7–8 weeks 1 qt.   1 ppp   7–8 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1 ppp   8–9 weeks 3 qt.   3 ppp   8–9 weeks 1.5 gal. pot   3–4 ppp   8–10 weeks	Spider mites, Thrips, Leafminers, Aphids, Whiteflies	Alternaria leaf spot, Botrytis and Pythium.

Marigold African **INCA II™** *F1 Tagetes erecta*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 0 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative short day	68–70 °F (20–21 °C)	58–60 °F (14–16 °C)	125–175 ppm N	Large Packs   1 ppp   7–8 weeks 1 qt.   1 ppp   8–9 weeks 1.25 qt.   1 ppp   9–10 weeks	Spider mites, Thrips, Leafminers, Aphids, Whiteflies	Alternaria leaf spot, Botrytis, Pythium

Marigold African **PERFECTION™** *F1 Tagetes erecta*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 0 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative short day	68–70 °F (20–21 °C)	58–60 °F (14–16 °C)	125–175 ppm N	1 qt.   1 ppp   9–10 weeks 1.25 qt.   1 ppp   9–10 weeks 2.5 qt.   1–2 ppp   9–10 weeks	Spider mites, Thrips, Leafminers, Aphids, Whiteflies	Alternaria leaf spot, Botrytis and Pythium.

Marigold French anemone **ALUMIA™** *OP Tagetes patula nana*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 6.1–6.5 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	66–68 °F (19–20 °C)	62–64 °F (17–18 °C)	125–175 ppm N	Packs   1 ppp   3–4 weeks Large Packs   1 ppp   3–4 weeks 1 pt.   1 ppp   3–4 weeks 1 qt.   1–2 ppp   5–6 weeks 1.25 qt.   2–3 ppp   5–6 weeks 2.5 qt.   2–3 ppp   5–6 weeks	Spider mites, Thrips, Leafminers, Aphids, Whiteflies	Pythium, Botrytis, Bacterial leaf spot, Alternaria leaf spot

FINISH PGRs	TECH TIPS
<p>Responsive to B-Nine® WSG, Bonzi® and Sumagic®. Xtreme Impatiens are bred to be more compact than standard Impatiens so may require less plant growth regulators (PGRs).</p>	<p>Use a calcium-based fertilizer and feed once a week at most to avoid soft growth and stretching of plants. Do not let plants go into the night with wet foliage or tip abortion may occur, especially during early stages of growth. Downward cupping or twisting of immature leaves may be caused by overuse of plant growth regulators (PGRs). It is better to use less water and fertilizer than PGRs to control growth. Preventive fungicide applications for foliar and root disease are recommended, especially in high humidity environments. Subdue Maxx®, Mural®, Micora®, and Segovis® fungicides can be used in a rotation program to control the common disease problems of Impatiens.</p>
FINISH PGRs	TECH TIPS
<p>Usually not required in larger containers. In small pots/packs or under low light conditions spray with Bonzi® at 1–3 ppm as needed.</p>	<p>Ensure a good scouting program for Thrips is in place. Do not try to grow cool; plant growth will stall under 60 °F (16 °C).</p>
FINISH PGRs	TECH TIPS
<p>B-Nine® WSG at 5,000 ppm if needed.</p>	<p>Stretched plugs can be buried if necessary. Maintain media pH above 6.2 to avoid iron/manganese toxicity. Short days will shorten time to flower.</p>
FINISH PGRs	TECH TIPS
<p>If necessary under low light or high temperature/humidity conditions, spray with B-Nine® WSG at 5,000 ppm before buds are wider than 1 cm (pea size).</p>	<p>Stretched plugs can be buried if necessary. Maintain media pH above 6.2 to avoid iron/manganese toxicity. Short days will shorten time to flower.</p>
FINISH PGRs	TECH TIPS
<p>Usually not required. B-Nine® WSG at 5,000 ppm before buds are wider than 1 cm (pea size). Later plant growth regulator (PGR) sprays may reduce flower size or cause flowering in the foliage.</p>	<p>Stretched plugs can be buried if necessary. Maintain media pH above 6.2 to avoid iron/manganese toxicity. Short days will shorten time to flower.</p>
FINISH PGRs	TECH TIPS
<p>If necessary under low light or high temperature/humidity conditions, spray with B-Nine® WSG at 5,000 ppm before buds are wider than 1 cm (pea size).</p>	<p>Stretched plugs can be buried if necessary. Maintain media pH above 6.2 to avoid iron/manganese toxicity. Short days will shorten time to flower.</p>
FINISH PGRs	TECH TIPS
<p>B-Nine® WSG at 2,500–5,000 ppm if needed.</p>	<p>To avoid iron and/or manganese toxicity, monitor and maintain media pH above 6.1. If plugs are stretched, plant them deep, up to the cotyledon, to prevent floppiness.</p>

Marigold French dwarf crested **HAPPY™** *OP Tagetes patula nana*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 6.1–6.5 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	66–68 °F (19–20 °C)	62–64 °F (17–18 °C)	125–175 ppm N	Packs   1 ppp   3–4 weeks Large Packs   1 ppp   3–4 weeks 1 pt.   1 ppp   3–4 weeks 1 qt.   1–2 ppp   4–5 weeks 1.25 qt.   2–3 ppp   4–5 weeks	Spider mites, Thrips, Leafminers, Aphids, Whiteflies	Pythium, Botrytis, Bacterial leaf spot, Alternaria leaf spot

Marigold Interspecific **ENDURANCE™** *F1 Tagetes triploid*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 6.1–6.5 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative short day	66–68 °F (19–20 °C)	62–64 °F (17–18 °C)	125–175 ppm N	Large Packs   1 ppp   4–5 weeks 1 qt.   1 ppp   5–6 weeks 1.25 qt.   2–3 ppp   5–6 weeks 2.5 qt.   2–3 ppp   5–6 weeks 3 qt.   4–5 ppp   6–7 weeks 1.5 gal. pot   4–5 ppp   6–7 weeks	Spider mites, Thrips, Leafminers, Aphids, Whiteflies	Pythium, Botrytis, Bacterial leaf spot, Alternaria leaf spot

Marigold Interspecific **ZENITH™** *F1 Tagetes triploid*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 6.1–6.5 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	66–68 °F (19–20 °C)	62–64 °F (17–18 °C)	125–175 ppm N	Packs   1 ppp   4–5 weeks Large Packs   1 ppp   4–5 weeks 1 pt.   1 ppp   5–6 weeks 1 qt.   1 ppp   5–6 weeks 1.25 qt.   2–2 ppp   6–7 weeks 2.5 qt.   2–3 ppp   6–7 weeks 3 qt.   3 ppp   6–7 weeks 1.5 gal. pot   3–4 ppp   6–7 weeks	Spider mites, Thrips, Leafminers, Aphids, Whiteflies	Pythium, Botrytis, Bacterial leaf spot, Alternaria leaf spot

Mimulus **MAGIC™** *F1 Mimulus × hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	2,000–4,000 foot candles (400–800 micro mols)	Obligate long day	58–60 °F (14–16 °C)	52–54 °F (11–12 °C)	125–175 ppm N	Packs   1 ppp   4–5 weeks Large Packs   1 ppp   4–5 weeks 1 pt.   1 ppp   5–6 weeks 1 qt.   1 ppp   5–6 weeks 1.25 qt.   1–3 ppp   5–6 weeks 2.5 qt.   1–3 ppp   5–6 weeks 3 qt.   3 ppp   6–7 weeks 1.5 gal. HB   4–5 ppp   6–7 weeks 1.5 gal. pot   3–4 ppp   7–8 weeks 2 gal. HB   4–5 ppp   7–8 weeks	Thrips, Whiteflies	Pythium, Rhizoctonia, INSV, Botrytis

Nicotiana **PERFUME™** *F1 Nicotiana × sandrea*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	66–68 °F (19–20 °C)	66–68 °F (19–20 °C)	125–175 ppm N	Packs   1 ppp   4–5 (green plant) weeks Large Packs   1 ppp   4–5 (green plant) weeks 1 pt.   1 ppp   5–6 (green plant) weeks 1 qt.   1 ppp   5–6 (green plant) weeks 1.25 qt.   1 ppp   9–11 (flowering plant) weeks 2.5 qt.   1 ppp   9–11 (flowering plant) weeks 3 qt.   1–3 ppp   9–11 weeks 1.5 gal. pot   3 ppp   10–12 weeks	Aphids, Whiteflies, Thrips, Cutworms	Downy mildew

Nicotiana **SARATOGA™** *F1 Nicotiana × alata*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	66–68 °F (19–20 °C)	66–68 °F (19–20 °C)	125–175 ppm N	Packs   1 ppp   5–6 weeks 1 qt.   1 ppp   6–7 weeks 1.25 qt.   1–2 ppp   7–8 weeks 2.5 qt.   2–3 ppp   7–8 weeks	Aphids, Whiteflies, Thrips, Cutworms	Downy mildew

Osteospermum **ASTI™** *F1 Osteospermum ecklonis*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	60–62 °F (16–17 °C)	52–54 °F (11–12 °C)	125–175 ppm N	1 qt.   1 ppp   10–14 weeks 1.25 qt.   2–3 ppp   12–15 weeks 2.5 qt.   2–3 ppp   12–15 weeks	Fungus gnats, Shore flies, Thrips, Aphids	Pythium, Rhizoctonia, Botrytis

	FINISH PGRs	TECH TIPS
	B-Nine® WSG at 2,500–5,000 ppm if needed.	To avoid iron and/or manganese toxicity, monitor and maintain media pH above 6.1. If plugs are stretched, plant them deep, up to the cotyledon, to prevent floppiness.
	Plant growth regulator (PGRs) are not usually necessary. If needed spray with B-Nine® WSG at 2,500–5,000 ppm.	To avoid iron and/or manganese toxicity, monitor and maintain media pH above 6.1. If plugs are stretched, plant them deep, up to the cotyledon, to prevent floppiness.
	If needed to control height, spray with B-Nine® WSG at 2,500–5,000 ppm, Bonzi® at 15–30 ppm, or Sumagic® at 5–10 ppm. To help control growth in the retail environment, drench with Bonzi® at 2–5 ppm or Sumagic® at 1–2 ppm when plants are up to size and flowering.	If plugs are stretched, plant them deep (up to the cotyledons is ok) to prevent floppiness. Maintain soil pH above 6.1 to avoid iron and/or manganese toxicity.
	Under proper growing conditions, plant growth regulators (PGRs) are usually not needed. If warm and/or dark conditions exist, sprays of B-Nine® WSG at 2,500 ppm are effective.	If plugs were provided 14 hour days, then day extension lighting isn't required after transplant. Growing Magic Mimulus in cool conditions will give the best quality plants. Control thrips to reduce the chance of INSV infections.
	If needed to control height, spray with B-Nine® WSG at 2,500–5,000 ppm, A-Rest® at 3–7 ppm, Bonzi® at 10–30 ppm, or Sumagic® at 5–10 ppm.	Under low light conditions supplemental light at 300–400 foot candles (60–80 micro mols) will induce earlier flowering. An overapplication of Bonzi® can cause the foliage to crinkle.
	If needed to control height spray with B-Nine® WSG at 2,500–5,000 ppm, A-Rest® at 3–7 ppm, Bonzi® at 10–30 ppm or Sumagic® at 5–10 ppm.	Under low light conditions, supplemental light at 300–400 foot candles (60–80 micro mols) will induce earlier flowering. An overapplication of Bonzi® can cause the foliage to crinkle.
	B-Nine® at 2,500–5,000 ppm or Cycocel® at 750–1,000 ppm as needed	Do not apply plant growth regulators (PGRs) after buds have set to avoid reduction in flower size. Asti Osteospermum does not require vernalization to flower but will have the highest bud count grown under high light coupled with cool temperatures.

Pansy **COLOSSUS™** *F1 Viola × wittrockiana*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	64–66 °F (18–19 °C)	64–66 °F (18–19 °C)	75–125 ppm N	Packs   1 ppp   4–7 weeks Large Packs   1 ppp   5–7 weeks 1 pt.   1 ppp   5–7 weeks 1 qt.   1 ppp   5–7 weeks 1.25 qt.   2–3 ppp   6–8 weeks 1.5 gal. HB   5–6 ppp   6–8 weeks	Aphids, Thrips	Alternaria, Downy mildew, Thielaviopsis, Cercospora, Botrytis

Pansy **DELTA™** *F1 Viola × wittrockiana*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	64–66 °F (18–19 °C)	64–66 °F (18–19 °C)	75–125 ppm N	Packs   1 ppp   4–5 weeks Large Packs   1 ppp   5–6 weeks 1 pt.   1 ppp   5–6 weeks 1 qt.   1 ppp   5–6 weeks 1.25 qt.   2–3 ppp   5–6 weeks 1.5 gal. HB   5–6 ppp   5–7 weeks	Aphids, Thrips	Alternaria, Downy mildew, Thielaviopsis, Cercospora, Botrytis

Pansy **DELTA™ PREMIUM** *F1 Viola × wittrockiana*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	64–66 °F (18–19 °C)	64–66 °F (18–19 °C)	75–125 ppm N	Packs   1 ppp   4–5 weeks Large Packs   1 ppp   5–6 weeks 1 pt.   1 ppp   5–6 weeks 1 qt.   1 ppp   5–6 weeks 1.25 qt.   2–3 ppp   5–6 weeks 1.5 gal. HB   5–6 ppp   5–7 weeks	Aphids, Thrips	Alternaria, Downy mildew, Thielaviopsis, Cercospora, Botrytis

Pansy **DELTA™ SPEEDY** *F1 Viola × wittrockiana*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	64–66 °F (18–19 °C)	64–66 °F (18–19 °C)	75–125 ppm N	Packs   1 ppp   4–5 weeks Large Packs   1 ppp   5–6 weeks 1 pt.   1 ppp   5–6 weeks 1 qt.   1 ppp   5–6 weeks	Aphids, Thrips	Alternaria, Downy mildew, Thielaviopsis, Cercospora, Botrytis

Pansy **SELECT** *F1 Viola × wittrockiana*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	64–66 °F (18–19 °C)	64–66 °F (18–19 °C)	75–125 ppm N	Packs   1 ppp   5–6 weeks Large Packs   1 ppp   5–6 weeks 1 pt.   1 ppp   6–7 weeks 1 qt.   1 ppp   6–7 weeks 1.25 qt.   2–3 ppp   6–7 weeks 2.5 qt.   2–3 ppp   6–7 weeks 1.5 gal. HB   5–6 ppp   6–7 weeks	Aphids, Thrips	Alternaria, Downy mildew, Thielaviopsis, Cercospora, Botrytis

Pansy Spreading **FREEFALL™** *F1 Viola × wittrockiana*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	64–66 °F (18–19 °C)	64–66 °F (18–19 °C)	75–125 ppm N	Large Packs   1 ppp   4–5 weeks 1 pt.   1 ppp   5–6 weeks 1 qt.   1 ppp   5–6 weeks 1.25 qt.   2–3 ppp   6–7 weeks 2.5 qt.   2–3 ppp   6–7 weeks 1.5 gal. HB   6–7 ppp   7–9 weeks	Aphids, Thrips	Alternaria, Downy mildew, Thielaviopsis, Cercospora, Botrytis

Pansy Spreading **FREEFALL™ XL** *F1 Viola × wittrockiana*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	64–66 °F (18–19 °C)	64–66 °F (18–19 °C)	75–125 ppm N	Large Packs   1 ppp   4–5 weeks 1 pt.   1 ppp   5–6 weeks 1 qt.   1 ppp   5–6 weeks 1.25 qt.   2–3 ppp   6–7 weeks 2.5 qt.   2–3 ppp   6–7 weeks 1.5 gal. HB   6–7 ppp   7–9 weeks	Aphids, Thrips	Alternaria, Downy mildew, Thielaviopsis, Cercospora, Botrytis

	FINISH PGRs	TECH TIPS
	B-Nine® WSG at 2,500–5,000 ppm.	Keep media pH below 5.8 to help avoid Thielaviopsis infections. Under hot temperatures provide lower light levels to reduce heat stress. Do not hold Pansy plugs—transplant before plugs get root bound. Malformed and puckered leaves indicate calcium or boron deficiencies. To prevent this, fertilize with plug special (13–2–13) or a cal-mag fertilizer (14–4–14). Boron deficiencies can be distinguished by tip abortion, upper leaf stunting, puckering and thickening of leaves, along with shortened internodes and/or a gnarled mass of lateral shoots. Boron deficiency is more prevalent during warm weather with frequent watering. A borax or Solubor® drench will help overcome these problems.
	Usually not required if growing cool. If conditions are warmer or darker than ideal spray with B-Nine® WSG at 2,500–5,000 ppm.	Keep media pH below 5.8 to help avoid Thielaviopsis infections. Under hot temperatures provide lower light levels to reduce heat stress. Do not hold Pansy plugs—transplant before plugs get root bound. Malformed and puckered leaves indicate calcium or boron deficiencies. To prevent this, fertilize with plug special (13–2–13) or a cal-mag fertilizer (14–4–14). Boron deficiencies can be distinguished by tip abortion, upper leaf stunting, puckering and thickening of leaves, along with shortened internodes and/or a gnarled mass of lateral shoots. Boron deficiency is more prevalent during warm weather with frequent watering. A borax or Solubor® drench will help overcome these problems.
	Usually not required if growing cool. If conditions are warmer or darker than ideal spray with B-Nine® WSG at 2,500–5,000 ppm.	Keep media pH below 5.8 to help avoid Thielaviopsis infections. Under hot temperatures provide lower light levels to reduce heat stress. Do not hold Pansy plugs—transplant before plugs get root bound. Malformed and puckered leaves indicate calcium or boron deficiencies. To prevent this, fertilize with plug special (13–2–13) or a cal-mag fertilizer (14–4–14). Boron deficiencies can be distinguished by tip abortion, upper leaf stunting, puckering and thickening of leaves, along with shortened internodes and/or a gnarled mass of lateral shoots. Boron deficiency is more prevalent during warm weather with frequent watering. A borax or Solubor® drench will help overcome these problems.
	Usually not required if growing cool. If conditions are warmer or darker than ideal, spray with B-Nine® WSG at 2,500–5,000 ppm.	Keep media pH below 5.8 to help avoid Thielaviopsis infections. Under hot temperatures provide lower light levels to reduce heat stress. Do not hold Pansy plugs—transplant before plugs get root bound. Malformed and puckered leaves indicate calcium or boron deficiencies. To prevent this, fertilize with plug special (13–2–13) or a cal-mag fertilizer (14–4–14). Boron deficiencies can be distinguished by tip abortion, upper leaf stunting, puckering and thickening of leaves, along with shortened internodes and/or a gnarled mass of lateral shoots. Boron deficiency is more prevalent during warm weather with frequent watering. A borax or Solubor® drench will help overcome these problems.
	For packs or small containers, sprays of B-Nine® WSG at 3,000–5,000 ppm can be effective in controlling vigor. Plant growth regulators (PGRs) may not be necessary for finishing in larger containers unless conditions are not ideal and may lead to stretch.	Keep media pH below 5.8 to help avoid Thielaviopsis infections. Under hot temperatures provide lower light levels to reduce heat stress. Do not hold Pansy plugs—transplant before plugs get root bound. Malformed and puckered leaves indicate calcium or boron deficiencies. To prevent this, fertilize with plug special (13–2–13) or a Cal-Mag® Plus fertilizer (14–4–14). Boron deficiencies can be distinguished by tip abortion, upper leaf stunting, puckering and thickening of leaves, along with shortened internodes and/or a gnarled mass of lateral shoots. Boron deficiency is more prevalent during warm weather with frequent watering. A borax or Solubor® drench will help overcome these problems.
	Usually not required if growing cool. If conditions are warmer or darker than ideal spray with B-Nine® WSG at 2,500–5,000 ppm.	Keep media pH below 5.8 to help avoid Thielaviopsis infections. Under hot temperatures, provide lower light levels to reduce heat stress. If frequent irrigation occurs due to high temperatures, apply a supplemental feed of Solubor® to avoid boron deficiency.
	Usually not required if growing cool. If conditions are warmer or darker than ideal spray with B-Nine® WSG at 2,500–5,000 ppm.	Keep media pH below 5.8 to help avoid Thielaviopsis infections. Under hot temperatures, provide lower light levels to reduce heat stress. If frequent irrigation occurs due to high temperatures, apply a supplemental feed of Solubor® to avoid boron deficiency.

Penstemon **ARABESQUE®** F1 *Penstemon hartwegii*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.8–6.2 SME 2.3–2.8 mS/cm, PourThru EC: 3.5–4.2 mS/cm	6,000–8,000 foot candles (1,200–1,600 micro mols)	Facultative long day	68–70 °F (20–21 °C)	60–62 °F (16–17 °C)	200–250 ppm N	1 qt. l 1 ppp   11–13 weeks 1.25 qt. l 2 ppp   11–13 weeks 2.5 qt. l 2 ppp   11–13 weeks 3 qt. l 3 ppp   11–13 weeks 1.5 gal. pot   3–5 ppp   11–13 weeks	Aphids, Fungus gnats, Thrips	Botrytis, Pythium, Rhizoctonia, Thielaviopsis, INSV (Impatiens Necrotic Spot Virus)

Penstemon **PARTYBELLS™** F1 *Penstemon hartwegii*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.8–6.2 SME 2.3–2.8 mS/cm, PourThru EC: 3.5–4.2 mS/cm	6,000–8,000 foot candles (1,200–1,600 micro mols)	Facultative long day	68–70 °F (20–21 °C)	60–62 °F (16–17 °C)	125–175 ppm N	1 qt. l 1 ppp   11–12 weeks 1.25 qt. l 1–2 ppp   11–12 weeks 2.5 qt. l 1–2 ppp   11–12 weeks 3 qt. l 3–4 ppp   11–12 weeks 1.5 gal. pot   3–4 ppp   11–12 weeks	Aphids, Fungus gnats, Thrips	Botrytis, Pythium, Rhizoctonia, Thielaviopsis, INSV (Impatiens Necrotic Spot Virus)

Pentas **BEEBRIGHT™** F1 *Pentas lanceolata*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 6.1–6.5 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	70–72 °F (21–22 °C)	66–68 °F (19–20 °C)	75–125 ppm N	Packs   1 ppp   7–8 weeks Large Packs   1 ppp   7–8 weeks 1 pt. l 1 ppp   7–8 weeks 1 qt. l 1 ppp   7–8 weeks 1.25 qt. l 2 ppp   7–8 weeks 2.5 qt. l 2–3 ppp   7–8 weeks	Thrips, Whiteflies, Aphids, Spider mites	Pythium, Botrytis, Rhizoctonia

Pentas **BEEHIVE™** F1 *Pentas lanceolata*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 6.1–6.5 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	70–72 °F (21–22 °C)	66–68 °F (19–20 °C)	75–125 ppm N	1 qt. l 1 ppp   5–6 weeks 1.25 qt. l 1 ppp   6–7 weeks 2.5 qt. l 1 ppp   6–7 weeks 3 qt. l 3 ppp   6–7 weeks 1.5 gal. HB   3 ppp   6–7 weeks 2 gal. HB   4–5 ppp   7–8 weeks	Thrips, Whiteflies, Aphids, Spider mites	Pythium, Botrytis, Rhizoctonia

Pentas **HONEYCLUSTER™** F1 *Pentas lanceolata*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 6.1–6.5 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	70–72 °F (21–22 °C)	66–68 °F (19–20 °C)	75–125 ppm N	1 qt. l 1 ppp   7–8 weeks 1.25 qt. l 1 ppp   7–8 weeks 2.5 qt. l 1 ppp   7–8 weeks 3 qt. l 2–3 ppp   8–9 weeks	Thrips, Whiteflies, Aphids, Spider mites	Pythium, Botrytis, Rhizoctonia

Petunia grandiflora **DUVET™** F1 *Petunia grandiflora*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	68–70 °F (20–21 °C)	58–60 °F (14–16 °C)	125–175 ppm N	Packs   1 ppp   4–5 weeks Large Packs   1 ppp   5–6 weeks 1 pt. l 1 ppp   5–6 weeks 1 qt. l 1 ppp   5–6 weeks 1.25 qt. l 2–3 ppp   6–7 weeks 2.5 qt. l 3 ppp   6–7 weeks 1.5 gal. HB   3–4 ppp   7–8 weeks	Aphids, Thrips	Botrytis, Rhizoctonia

Petunia grandiflora **FROST™** F1 *Petunia grandiflora*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	68–70 °F (20–21 °C)	58–60 °F (14–16 °C)	125–175 ppm N	Packs   1 ppp   4–5 weeks Large Packs   1 ppp   5–6 weeks 1 pt. l 1 ppp   5–6 weeks 1 qt. l 1 ppp   5–6 weeks 1.25 qt. l 2–3 ppp   6–7 weeks 2.5 qt. l 3 ppp   6–7 weeks 3 qt. l 3–4 ppp   7–8 weeks 1.5 gal. HB   3–4 ppp   7–8 weeks 1.5 gal. pot   3–4 ppp   7–8 weeks	Aphids, Thrips	Botrytis, Rhizoctonia

FINISH PGRs	TECH TIPS
Sumagic® at 5–10 ppm or a tank mix of B-Nine® WSG at 1,500 ppm plus Cycocel® at 750 ppm. Alternatively, drench with Bonzi® at 0.5–2.0 ppm. One to two applications are generally needed.	Pinching Arabesque Penstemon will result in more blooms at the finishing stage but will delay flowering by 2–3 weeks.

FINISH PGRs	TECH TIPS
If grown cool will likely not require plant growth regulator (PGR) applications. However, if needed spray applications of Bonzi® at 10–15 ppm or Sumagic® at 5 ppm are effective in controlling stem elongation.	Provide long days and 68 °F (20 °C) average daily temperature for fastest flowering and finishing.

FINISH PGRs	TECH TIPS
B-Nine® WSG at 2,500–5,000 ppm, Cycocel® at 750–1,000 ppm, Bonzi® at 5–10 ppm or A-Rest® at 3–5 ppm.	Use calcium and nitrate-based fertilizers to maintain pH above 6.1 to prevent iron toxicity symptoms. Additional applications of magnesium sulfate at 1 lb. per 100 gallons every three weeks is recommended to help maintain healthy, green color. Warm temperatures and high light levels will accelerate growth and flowering.

FINISH PGRs	TECH TIPS
B-Nine® WSG at 2,500–5,000 ppm, Cycocel® at 750–1,000 ppm, Bonzi® at 5–10 ppm or A-Rest® at 3–5 ppm.	Use calcium and nitrate-based fertilizers to maintain pH above 6.1 to prevent iron toxicity symptoms. Additional applications of magnesium sulfate at 1 lb. per 100 gallons every three weeks is recommended to help maintain healthy, green color. Warm temperatures and high light levels will accelerate growth and flowering.

FINISH PGRs	TECH TIPS
B-Nine® WSG at 2,500–5,000 ppm, Cycocel® at 750–1,000 ppm, Bonzi® at 5–10 ppm or A-Rest® at 3–5 ppm.	Use calcium and nitrate-based fertilizers to maintain pH above 6.1 to prevent iron toxicity symptoms. Additional applications of magnesium sulfate at 1 lb. per 100 gallons every three weeks is recommended to help maintain healthy, green color. Warm temperatures and high light levels will accelerate growth and flowering.

FINISH PGRs	TECH TIPS	VARIETY	VIGOR	TIMING	MPR
B-Nine® WSG at 2,500–3,500 ppm or Bonzi® at 5–15 ppm. Bonzi® drenches are not recommended.	Providing cool temperatures, high light and 'growing on the dry side' will help keep Petunias more compact. Early morning DIF treatments also help. Providing long day lighting during short days will shorten time to flower.	Duvel™ Blue 70040974 Duvel™ Burgundy 70059297 Duvel™ Mix 70048780 Duvel™ Pink 70040978 Duvel™ Red 70040981 Duvel™ Salmon 70040985 Duvel™ White 70040988		M M M M E-M E-M	11.5 hrs. 10.5 hrs. 11.5 hrs. 13.5 hrs. 10.5 hrs. 10.5 hrs.

\*MPR is Minimum Photoperiod Recommendation.

FINISH PGRs	TECH TIPS
Responds well to B-Nine® WSG sprays at 2,500–3,500 ppm. Bonzi® drenches at 1–2 ppm during later stages in the crop will reduce stretch and will not affect flowering as much as B-Nine® WSG.	Providing cool temperatures, high light and 'growing on the dry side' will help keep Petunias more compact. Early morning DIF treatments also help. Providing long day lighting during short days will shorten time to flower.

# SEED FINISHING

## Petunia grandiflora **PRISM™** F1 *Petunia grandiflora*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	68–70 °F (20–21 °C)	58–60 °F (14–16 °C)	125–175 ppm N	Packs   1 ppp   4–5 weeks Large Packs   1 ppp   5–6 weeks 1 pt.   1 ppp   5–6 weeks 1 qt.   1 ppp   5–6 weeks 1.25 qt.   2–3 ppp   6–7 weeks 2.5 qt.   3 ppp   6–7 weeks 3 qt.   3–4 ppp   7–8 weeks 1.5 gal. HB   3–4 ppp   7–8 weeks 1.5 gal. pot   3–4 ppp   7–8 weeks	Aphids, Thrips	Botrytis, Rhizoctonia

## Petunia grandiflora **TRITUNIA™** F1 *Petunia grandiflora*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	68–70 °F (20–21 °C)	58–60 °F (14–16 °C)	125–175 ppm N	Packs   1 ppp   4–5 weeks Large Packs   1 ppp   4–5 weeks 1 pt.   1 ppp   5–6 weeks 1 qt.   1 ppp   5–6 weeks 1.25 qt.   2–3 ppp   6–7 weeks 2.5 qt.   3 ppp   6–7 weeks 3 qt.   3–4 ppp   7–8 weeks 1.5 gal. HB   3–4 ppp   7–8 weeks 1.5 gal. pot   3–4 ppp   7–8 weeks	Aphids, Thrips	Botrytis, Rhizoctonia

## Petunia milliflora **PICOBELLA™** F1 *Petunia milliflora*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	68–70 °F (20–21 °C)	58–60 °F (14–16 °C)	125–175 ppm N	Packs   1 ppp   4–5 weeks Large Packs   1 ppp   5–6 weeks 1 qt.   1 ppp   5–6 weeks	Aphids, Thrips	Botrytis, Rhizoctonia

## Petunia multiflora **DAMASK™** F1 *Petunia multiflora*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	68–70 °F (20–21 °C)	58–60 °F (14–16 °C)	125–175 ppm N	Packs   1 ppp   4–5 weeks Large Packs   1 ppp   5–6 weeks 1 pt.   1 ppp   5–6 weeks 1 qt.   1 ppp   5–6 weeks 1.25 qt.   2–3 ppp   6–7 weeks 2.5 qt.   3 ppp   6–7 weeks 1.5 gal. HB   3–4 ppp   7–8 weeks	Aphids, Thrips	Botrytis, Rhizoctonia

FINISH PGRs	TECH TIPS
Responds well to B-Nine® WSG sprays at 2,500–3,500 ppm. Bonzi® drenches at 1–2 ppm during later stages in the crop will reduce stretch and will not affect flowering as much as B-Nine® WSG.	Providing cool temperatures, high light and 'growing on the dry side' will help keep Petunias more compact. Early morning DIF treatments also help. Providing long day lighting during short days will shorten time to flower.

FINISH PGRs	TECH TIPS	VARIETY	VIGOR	TIMING	MPR
Responds well to B-Nine® WSG sprays at 2,500–3,500 ppm. Bonzi® drenches at 1–2 ppm during later stages in the crop will reduce stretch and will not affect flowering as much as B-Nine® WSG.	Providing cool temperatures, high light and 'growing on the dry side' will help keep Petunias more compact. Early morning DIF treatments also help. Providing long day lighting during short days will shorten time to flower.	TriTunia™ Blue 70065664		M-L	12.5 hrs.
		TriTunia™ Blue Star 70065668		M-L	11.5 hrs.
		TriTunia™ Blue Veined 70065676		M-L	10.5 hrs.
		TriTunia™ Burgundy 70065667		L	11.5 hrs.
		TriTunia™ Crimson Star 70065681		L	13.5 hrs.
		TriTunia™ Fresh White 70007924		E	10.5 hrs.
		TriTunia™ Lavender 70065666		M-L	10.5 hrs.
		TriTunia™ Mix 70065675			
		TriTunia™ Pink 70065685		E-M	10.5 hrs.
		TriTunia™ Pink Morn 70065679		M	10.5 hrs.
		TriTunia™ Pink Veined 70037057		M	10.5 hrs.
		TriTunia™ Plum 70065678		M	10.5 hrs.
		TriTunia™ ProFormula Mix 70067443			
		TriTunia™ Purple 70000762		E	10.5 hrs.
		TriTunia™ Purple Star 70065677		M-L	11.5 hrs.
		TriTunia™ Red 70065673		M-L	10.5 hrs.
		TriTunia™ Red Star 70065669		M-L	11.5 hrs.
		TriTunia™ Rose 70065670		M	10.5 hrs.
		TriTunia™ Rose Star 70065671		M-L	10.5 hrs.
		TriTunia™ Salmon 70040996		M	10.5 hrs.
		TriTunia™ Salmon Veined 70065674		M-L	12.5 hrs.
		TriTunia™ Sky Blue 70065684		M-L	12.5 hrs.
		TriTunia™ Star Mix 70065672			
		TriTunia™ Veined Mix 70065665			
		TriTunia™ Violet 70065680		M-L	12.5 hrs.
		TriTunia™ White 70000745		E	10.5 hrs.

\*MPR is Minimum Photoperiod Recommendation.

FINISH PGRs	TECH TIPS	VARIETY	VIGOR	TIMING	MPR
If grown too warm or under low light conditions a spray of B-Nine® WSG at 1,500–2,500 ppm will help keep the growth more compact. Do not spray with B-Nine® WSG after bud formation; Picobellas is a milliflora Petunia so has many small flowers and late PGR applications may reduce flower size unacceptably.	Providing cool temperatures, high light and 'growing on the dry side' will help keep Picobella more compact. Early morning DIF treatments also help. This is a better way to grow Picobella Petunia than using PGRs. Providing long day lighting during short days will shorten time to flower.	Picobella™ Blue 70007665		E	10.5 hrs.
		Picobella™ Carmine 70007666		E-M	10.5 hrs.
		Picobella™ Lavender 70054309			
		Picobella™ Mix 70007838			
		Picobella™ Pink 70054306		M	9.5 hrs.
		Picobella™ Red 70035048		M	12.5 hrs.
		Picobella™ Rose 70007668		E-M	10.5 hrs.
		Picobella™ Rose Morn 70024118		M	10.5 hrs.
		Picobella™ Rose Star 70024119		M	10.5 hrs.
		Picobella™ Salmon 70035049			
		Picobella™ White 70007670		M	10.5 hrs.

\*MPR is Minimum Photoperiod Recommendation.

FINISH PGRs	TECH TIPS
Responds well to B-Nine® WSG at 2,500–3,500 ppm or Bonzi® at 5–15 ppm. Bonzi® drenches are not recommended.	Providing cool temperatures, high light and 'growing on the dry side' will help keep Petunias more compact. Early morning DIF treatments also help. Providing long day lighting during short days will shorten time to flower.

Petunia multiflora **HURRAH™** F1 *Petunia multiflora*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	68–70 °F (20–21 °C)	58–60 °F (14–16 °C)	125–175 ppm N	Packs   1 ppp   4–5 weeks Large Packs   1 ppp   5–6 weeks 1 pt.   1 ppp   5–6 weeks 1 qt.   1 ppp   5–6 weeks 1.25 qt.   2–3 ppp   6–7 weeks 2.5 qt.   3 ppp   6–7 weeks 3 qt.   3–4 ppp   7–8 weeks 1.5 gal. HB   3–4 ppp   7–8 weeks 1.5 gal. pot   3–4 ppp   7–8 weeks	Aphids, Thrips	Botrytis, Rhizoctonia

Petunia spreading **FOTOFINISH®** F1 *Petunia pendula*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	68–70 °F (20–21 °C)	58–60 °F (14–16 °C)	125–175 ppm N	Large Packs   1 ppp   4–5 weeks 1 qt.   1 ppp   4–5 weeks 1.25 qt.   1–2 ppp   5–6 weeks 2.5 qt.   1–2 ppp   5–6 weeks 3 qt.   1–3 ppp   6–8 weeks 1.5 gal. HB   3–4 ppp   7–8 weeks 2 gal. HB   4–5 ppp   7–8 weeks	Aphids, Thrips	Botrytis, Rhizoctonia

Petunia spreading grandiflora **SKYBOX™** F1 *Petunia pendula*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	68–70 °F (20–21 °C)	58–60 °F (14–16 °C)	125–175 ppm N	1 pt.   1 ppp   5–6 weeks 1 qt.   1 ppp   5–6 weeks 1.25 qt.   1 ppp   5–8 weeks 2.5 qt.   1 ppp   6–8 weeks 3 qt.   1–3 ppp   6–8 weeks 1.5 gal. HB   3–4 ppp   7–8 weeks 2 gal. HB   4–5 ppp   7–8 weeks	Aphids, Thrips	Botrytis, Rhizoctonia

Petunia spreading milliflora **FLASHFORWARD™** F1 *Petunia pendula*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	68–70 °F (20–21 °C)	58–60 °F (14–16 °C)	125–175 ppm N	Large Packs   1 ppp   5–6 weeks 1 pt.   1 ppp   5–6 weeks 1 qt.   1 ppp   5–6 weeks 1.25 qt.   1–2 ppp   6–7 weeks 2.5 qt.   2–3 ppp   6–7 weeks 3 qt.   3–5 ppp   7–8 weeks 1.5 gal. HB   3–5 ppp   7–8 weeks 2 gal. HB   4–5 ppp   9–10 weeks	Aphids, Thrips	Botrytis, Rhizoctonia

Phlox **POPSTARS™** F1 *Phlox drummondii*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	60–62 °F (16–17 °C)	56–58 °F (13–14 °C)	125–175 ppm N	Packs   1 ppp   5–6 weeks Large Packs   1 ppp   5–6 weeks 1 pt.   1 ppp   5–6 weeks 1 qt.   1 ppp   5–6 weeks 1.25 qt.   3 ppp   5–5 weeks 2.5 qt.   3 ppp   5–6 weeks 3 qt.   3–4 ppp   5–6 weeks 1.5 gal. HB   5 ppp   6–7 weeks	Thrips	Powdery mildew, Rhizoctonia, Pythium

FINISH PGRs	TECH TIPS
Respond well to B-Nine® WSG sprays at 2,500–3,500 ppm. Bonzi® drenches at 1–2 ppm during later stages in the crop will reduce stretch and will not affect flowering as much as B-Nine® WSG.	Providing cool temperatures, high light and 'growing on the dry side' will help keep Petunias more compact. Early morning DIF treatments also help. Providing long day lighting during short days will shorten time to flower.

FINISH PGRs	TECH TIPS	VARIETY	VIGOR	TIMING	MPR
Responds well to B-Nine® WSG sprays at 2,500–3,500 ppm. Do not apply B-Nine® WSG after bud formation or flowers may reduce in size and/or become distorted. Bonzi® drenches at 1–2 ppm during later stages in the crop will reduce stretch and will not affect flowering as much as B-Nine® WSG.	Providing cool temperatures, high light, and 'growing on the dry side' will help keep Petunias more compact. Early morning DIF treatments also help. Providing long day lighting during short days will shorten time to flower.	FotoFinish® Blue 70061717		E-M	12.5 hrs.
		FotoFinish® Burgundy 70061720		E-M	12.5 hrs.
		FotoFinish® Mix 70099727		M	12.5 hrs.
		FotoFinish® Patriot Mix 70099524			
		FotoFinish® Pink 70067220			
		FotoFinish® Red 70067221		M-L	12.5 hrs.
		FotoFinish® Rose Morn 70083160		M-L	12.5 hrs.
		FotoFinish® Rose Star 70083162		E-M	11.5 hrs.
		FotoFinish® Salmon 70065697		E-M	10.5 hrs.
		FotoFinish® White 70083138		E-M	12.5 hrs.

\*MPR is Minimum Photoperiod Recommendation.

FINISH PGRs	TECH TIPS	VARIETY	VIGOR	TIMING	MPR
Responds well to B-Nine® WSG sprays at 2,500–3,500 ppm. Bonzi® drenches at 1–2 ppm during later stages in the crop will reduce stretch and will not affect flowering as much as B-Nine® WSG.	Providing cool temperatures, high light and 'growing on the dry side' will help keep Petunias more compact. Early morning DIF treatments also help. Providing long day lighting during short days will shorten time to flower.	Skybox™ Rose Star 70067243		E-M	10.5 hrs.

\*MPR is Minimum Photoperiod Recommendation.

FINISH PGRs	TECH TIPS	VARIETY	VIGOR	TIMING	MPR
Responds well to B-Nine® WSG sprays at 1,500–2,500 ppm. Do not apply B-Nine® WSG after bud formation or flowers may reduce in size and/or become distorted. Bonzi® drenches at 0.5–1.0 ppm during later stages in the crop will reduce stretch and will not affect flowering as much as B-Nine® WSG.	Providing cool temperatures, high light, and 'growing on the dry side' will help keep Petunias more compact. Early morning DIF treatments also help. Providing long day lighting during short days will shorten time to flower.	FlashForward™ Blue 70099066		E-M	11.5 hrs.
		FlashForward™ Burgundy 70099091		L	12.5 hrs.
		FlashForward™ Cool Waters Mix 70099093		M	10.5 hrs.
		FlashForward™ Coral 70099064			
		FlashForward™ Lavender 70099068			
		FlashForward™ Mix 70099092		M	11 hrs.
		FlashForward™ Patriot Mix 70099069			
		FlashForward™ Pink 70099065		M	12.5 hrs.
		FlashForward™ Pink Glo 70098898		M	11 hrs.
		FlashForward™ Purple 70099067		M	12.5 hrs.
		FlashForward™ Red 70098899		E-M	12.5 hrs.
		FlashForward™ Salmon 70098897		M	12.5 hrs.
		FlashForward™ Sky Blue 70098900		M-L	10.5 hrs.
FlashForward™ White 70099063	E-M	10.5 hrs.			

\*MPR is Minimum Photoperiod Recommendation.

FINISH PGRs	TECH TIPS
Plant growth regulators (PGRs) are usually not necessary under proper (cool with high light) growing conditions. If needed due to low light and/or high temperatures, sprays of Bonzi® at 15–20 ppm or B-Nine® WSG at 5,000 ppm are effective. The best time to apply PGRs is about 2 weeks after transplant; later treatments will give more height control but will delay flowering. Popstars Phlox also respond well to a negative DIF.	Do not let plants wilt severely. Too much water stress will damage the plants and they will not recover.

Primula **LIBRE™** *F1 Primula obconica*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	2,000–4,000 foot candles (400–800 micro mols)	Facultative short day	62–64 °F (17–18 °C)	60–62 °F (16–17 °C)	75–125 ppm N	1 qt.   1 ppp   8–9 weeks 1.25 qt.   1 ppp   10–12 weeks 2.5 qt.   1 ppp   10–12 weeks 3 qt.   2–3 ppp   10–12 weeks	Whiteflies, Leafminers, Aphids, Thrips	Pythium, Tospovirus

Primula **PRIMERA™** *F1 Primula acaulis*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	2,000–4,000 foot candles (400–800 micro mols)	Facultative long day	50–52 °F (10–11 °C)	54–56 °F (12–13 °C)	75–125 ppm N	1 pt.   1 ppp   13–14 weeks 1 qt.   1 ppp   13–14 weeks	Whiteflies, Fungus gnats, Leafminers, Aphids, Thrips	Ramularia, Botrytis

Ranunculus **MACHÉ™** *F1 Ranunculus asiaticus*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	52–54 °F (11–12 °C)	50–52 °F (10–11 °C)	125–175 ppm N	1 qt.   1 ppp   12–15 weeks 1.25 qt.   1 ppp   13–16 weeks 2.5 qt.   1–2 ppp   13–16 weeks	Aphids, Whiteflies, Leafminers, Thrips, Fungus gnats	Cercospora, Pythium, Botrytis, Tospovirus, Xanthomonas

Ranunculus **MAGIC™** *F1 Ranunculus asiaticus*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	52–54 °F (11–12 °C)	50–52 °F (10–11 °C)	125–175 ppm N	1 pt.   1 ppp   14–16 weeks 1 qt.   1 ppp   14–16 weeks	Aphids, Whiteflies, Leafminers, Thrips, Fungus gnats	Cercospora, Pythium, Botrytis, Tospovirus, Xanthomonas

Salvia **MOJAVE™** *OP Salvia splendens*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	66–68 °F (19–20 °C)	62–64 °F (17–18 °C)	125–175 ppm N	Large Packs   1 ppp   5–6 weeks 1 pt.   1 ppp   5–6 weeks 1 qt.   1–2 ppp   6–7 weeks 1.25 qt.   2–3 ppp   6–7 weeks 2.5 qt.   2–3 ppp   6–7 weeks 3 qt.   3–4 ppp   5–6 weeks 1.5 gal. pot   4 ppp   6–7 weeks	Aphids, Thrips, Spider mites, Leafminers, Whiteflies	Botrytis, Alternaria leaf spot, Corynespora leaf spot, Rust

Salvia **SENTRY™** *OP Salvia splendens*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	66–68 °F (19–20 °C)	62–64 °F (17–18 °C)	125–175 ppm N	Packs   1 ppp   3–4 weeks Large Packs   1 ppp   4–5 weeks 1 pt.   1 ppp   4–5 weeks 1 qt.   1–2 ppp   5–6 weeks 1.25 qt.   2–3 ppp   5–6 weeks 2.5 qt.   2–3 ppp   5–6 weeks 1.5 gal. pot   4–5 ppp   6–7 weeks	Aphids, Thrips, Spider mites, Leafminers, Whiteflies	Botrytis, Alternaria leaf spot, Corynespora leaf spot, Rust

Salvia **SIZZLER™** *OP Salvia splendens*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	66–68 °F (19–20 °C)	62–64 °F (17–18 °C)	125–175 ppm N	Packs   1 ppp   4–5 weeks Large Packs   1 ppp   4–5 weeks 1 pt.   1 ppp   5–6 weeks 1 qt.   1–2 ppp   5–6 weeks 1.25 qt.   2–3 ppp   5–6 weeks 2.5 qt.   2–3 ppp   5–6 weeks 1.5 gal. pot   4–5 ppp   6–7 weeks	Aphids, Thrips, Spider mites, Leafminers, Whiteflies	Botrytis, Alternaria leaf spot, Corynespora leaf spot, Rust

Salvia **VICTORIA™** *OP Salvia farinacea*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	66–68 °F (19–20 °C)	62–64 °F (17–18 °C)	125–175 ppm N	Packs   1 ppp   8–9 weeks Large Packs   1 ppp   8–9 weeks 1 pt.   1 ppp   5–6 weeks 1 qt.   1 ppp   9–10 weeks 1.25 qt.   1–3 ppp   10–11 weeks 2.5 qt.   1–3 ppp   10–11 weeks 3 qt.   3 ppp   11–12 weeks 1.5 gal. pot   3–4 ppp   11–12 weeks	Aphids, Thrips, Whiteflies	Pythium, Botrytis

FINISH PGRs	TECH TIPS
If needed sprays of B-Nine® WSG at 2,500–5,000 are effective.	Control thrips to avoid Tospovirus.

FINISH PGRs	TECH TIPS
If grown at the recommended temperatures PGR applications should not be necessary. If needed sprays of B-Nine® WSG at 2,500–5,000 are effective in helping control leaf size.	Avoid direct sunlight as leaf scorch may occur.

FINISH PGRs	TECH TIPS
B-Nine® WSG at 2,500–5,000 ppm. If grown cool PGR applications are usually not necessary but under warm conditions one to three sprays of B-Nine® WSG may be beneficial to control leaf size.	Control thrips to avoid Tospovirus.

FINISH PGRs	TECH TIPS
Since Magic Ranunculus is a genetically compact plant, plant growth regulators (PGRs) are not needed.	Control thrips to avoid Tospovirus.

FINISH PGRs	TECH TIPS
If needed to control height, spray with B-Nine® WSG at 2,500 ppm, Bonzi® at 10–30 ppm, or A-Rest® at 5–10 ppm.	If needed to control height when plants are starting to flower, a drench with Bonzi® at 2–3 ppm or Sumagic® at 0.5–1 ppm can be applied without delaying flowering. Practice a good wet/dry moisture cycle but avoid extremes of wet and dry. Salvias are sensitive to high salts, best to maintain EC levels below 2.0 mS/cm.

FINISH PGRs	TECH TIPS
If needed to control height, spray with B-Nine® WSG at 2,500 ppm, Bonzi® at 10–30 ppm, or A-Rest® at 5–10 ppm.	If needed, to control height when plants are starting to flower, a drench with Bonzi® at 2–3 ppm or Sumagic® at 0.5–1 ppm can be used without delaying flowering. Practice a good wet/dry moisture cycle but avoid extremes of wet and dry. Salvias are sensitive to high salts, so maintain EC levels below 2.0 mS/cm.

FINISH PGRs	TECH TIPS
If needed to control height, spray with B-Nine® WSG at 2,500 ppm, Bonzi® at 10–30 ppm, or A-Rest® at 5–10 ppm.	If needed to control height when plants are starting to flower, a drench with Bonzi® at 2–3 ppm or Sumagic® at 0.5–1 ppm can be used without delaying flowering. Practice a good wet/dry moisture cycle but avoid extremes of wet and dry. Salvias are sensitive to high salts so maintain EC levels below 2.0 mS/cm.

FINISH PGRs	TECH TIPS
If needed to control height, spray with B-Nine® WSG at 2,500 ppm, Bonzi® at 5–15 ppm, or A-Rest® at 3–10 ppm.	If needed to control height when plants are starting to flower, a drench with Bonzi® at 2–3 ppm or Sumagic® at 0.5–1 ppm can be used without delaying flowering. Practice a good wet/dry moisture cycle, but avoid extremes of wet and dry. Salvias are sensitive to high salts, be sure to maintain EC levels below 2.0 mS/cm.

Schizanthus **ATLANTIS™** F1 *Schizanthus × wisetonensis*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.8–6.2 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	2,000–4,000 foot candles (400–800 micro mols)	Obligate long day	60–62 °F (16–17 °C)	56–58 °F (13–14 °C)	125–175 ppm N	1 qt.   1 ppp   7–9 weeks 1.25 qt.   1 ppp   8–10 weeks 2.5 qt.   1 ppp   8–10 weeks	Thrips, Whiteflies, Aphids, Spider mites	Botrytis, Tospovirus

Snapdragon **LIBERTY™ CLASSIC** F1 *Antirrhinum majus*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	64–66 °F (18–19 °C)	56–58 °F (13–14 °C)	125–175 ppm N	Large Packs   1 ppp   6–8 weeks 1 qt.   1–2 ppp   10–12 weeks 1.25 qt.   2–3 ppp   10–12 weeks 2.5 qt.   3 ppp   10–12 weeks 3 qt.   3–5 ppp   10–12 weeks	Thrips, Aphids, Spider mites	Botrytis, Downy Mildew, Powdery mildew, Pythium, Rust, TSWV, INSV

Snapdragon **MADAME BUTTERFLY™** F1 *Antirrhinum majus*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	64–66 °F (18–19 °C)	56–58 °F (13–14 °C)	125–175 ppm N	1 qt.   1–2 ppp   10–12 weeks 1.25 qt.   2–3 ppp   10–12 weeks 2.5 qt.   3 ppp   10–12 weeks 3 qt.   3–5 ppp   10–12 weeks	Thrips, Aphids, Spider mites	Botrytis, Downy mildew, Powdery mildew, Pythium, Rust, TSWV, INSV

Snapdragon **SNAPTASTIC™** F1 *Antirrhinum majus*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	64–66 °F (18–19 °C)	56–58 °F (13–14 °C)	125–175 ppm N	Large Packs   1 ppp   5–7 weeks 1 pt.   1 ppp   7–8 weeks 1 qt.   1 ppp   7–8 weeks 1.25 qt.   1–2 ppp   7–8 weeks 2.5 qt.   1–2 ppp   7–8 weeks 3 qt.   3 ppp   7–8 weeks 1.5 gal. pot   3–5 ppp   7–8 weeks	Thrips, Aphids, Spider mites	Botrytis, Downy mildew, Powdery mildew, Pythium, Rust, TSWV, and INSV

Snapdragon Dwarf **SNAPTINI™** F1 *Antirrhinum majus*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	64–66 °F (18–19 °C)	64–66 °F (18–19 °C)	125–175 ppm N	Packs   1 ppp   4–5 weeks Large Packs   1 ppp   5–6 weeks 1 pt.   1 ppp   5–6 weeks	Thrips, Aphids, Spider mites	Botrytis, Downy mildew, Powdery mildew, Pythium, Rust, TSWV and INSV

Sunflower **SUNFINITY®** F1 *Helianthus hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–6 SME 1.2–1.75 mS/cm	3,500–4,500 foot candles (700–900 micro mols)	Facultative long day	70–75 °F (21–24 °C)	65–68 °F (20–24 °C)	150–200 ppm N	2.5 qt.   1 ppp   7–8 weeks 3 qt.   1 ppp   7–8 weeks 1.5 gal. pot   1–2 ppp   7–8 weeks	Aphids, Spider mites, Thrips, Whiteflies, Caterpillars	Botrytis, Pythium, Powdery mildew, Downy mildew, Rust

Torenia **HI-LITE™** F1 *Torenia fournieri*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	68–70 °F (20–21 °C)	68–70 °F (20–21 °C)	75–125 ppm N	Packs   1 ppp   6–7 weeks Large Packs   1 ppp   6–7 weeks 1 pt.   1 ppp   6–7 weeks 1 qt.   1 ppp   6–7 weeks 1.25 qt.   2–3 ppp   6–7 weeks 1.5 gal. HB   3–5 ppp   8–9 weeks	Aphids, Thrips	Botrytis, Pythium

Verbena **OBSESSION™** OP *Verbena hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	70–72 °F (21–22 °C)	64–66 °F (18–19 °C)	125–175 ppm N	Packs   1 ppp   5–6 weeks 1 pt.   1 ppp   5–6 weeks 1 qt.   1 ppp   6–8 weeks	Fungus gnats, Shore flies, Thrips, Aphids, Spider mites	Pythium, Rhizoctonia, Powdery Mildew, Tospovirus (Tomato Spotted Wilt Virus or Impatiens Necrotic Spot Virus)

	FINISH PGRs	TECH TIPS
	B-Nine® WSG at 1,500–3,000 ppm if needed	Keep under short days for 2 weeks after transplant to allow plants to bulk, then extend the day length to 14 hours to induce flowering. Keep plants on the dry side to avoid soft growth that is prone to Botrytis and soft rots. Highly sensitive to Tospoviruses (INSV and TSWV), so it is imperative to control thrips.
	FINISH PGRs	TECH TIPS
	B-Nine® WSG at 2,500–5,000 ppm, Bonzi® at 15–20 ppm or Sumagic® at 10–15 ppm are effective to control growth; 1–2 applications are usually sufficient.	Handle plugs gently when transplanting since Snapdragons have relatively weak root systems. Do not bury the stem to avoid stem rot diseases. Control Thrips to avoid TSWV or INSV infections. For early crops grown under short days, provide day extension lighting. Grow cool and under high light for the strongest stems.
	FINISH PGRs	TECH TIPS
	B-Nine® WSG at 2,500–5,000 ppm, Bonzi® at 15–20 ppm or Sumagic® at 10–15 ppm are effective to control growth; 1–2 applications are usually sufficient.	Handle plugs gently when transplanting, as Snapdragons have relatively weak root systems. Do not bury the stem to avoid stem rot diseases. Control thrips to avoid TSWV or INSV infections. For early crops grown under short days, provide day extension lighting. Grow cool and under high light for the strongest stems.
	FINISH PGRs	TECH TIPS
	If needed, spray B-Nine® WSG at 2,500–5,000 ppm, Bonzi® at 15–20 ppm or Sumagic® at 10–15 ppm are effective to reduce stretch under suboptimal environmental conditions. Do not apply Bonzi® drenches after visible buds to prevent clubby flowers.	Handle plugs gently when transplanting since Snapdragons have relatively weak root systems. Do not bury the stem to avoid stem rot diseases. Control Thrips to avoid TSWV or INSV infections. For early crops grown under short days, provide day extension lighting.
	FINISH PGRs	TECH TIPS
	If needed sprays B-Nine® WSG at 1,500–2,500 ppm, Bonzi® at 5–10 ppm or Sumagic® at 2.5–5 ppm are effective in reducing stretch under suboptimal environmental conditions. Bonzi® can also be drenched at 1–2 ppm. Do not apply Bonzi® after visible buds to prevent clubby flowers.	Handle plugs gently when transplanting since Snapdragons have relatively weak root systems. Do not bury the stem to avoid stem rot diseases. Control thrips to avoid TSWV or INSV infections.
	FINISH PGRs	TECH TIPS
	Apply 3–4 ppm Bonzi® (paclobutrazol) drench 1–2 weeks after pinch; 3–4 ppm drench at first sign of visible buds; 3–4 ppm drench when flowers start cracking color to hold for finish. Higher concentrations may be necessary under high temperature and long day conditions, but do not exceed 6 ppm for each drench.	A pinch is required to promote branching and control vigor. After 6–7 nodes develop on the stem, pinch shoot tips leaving 4 nodes. The nodes of Sunfinity are opposite so a pinch to 4 nodes would leave 8 leaves. This is a hard pinch. The top 2 leaves left after the pinch can be removed to help promote even branching.
	FINISH PGRs	TECH TIPS
	Usually not needed, but if needed B-Nine® WSG sprays of 1,250–2,500 ppm are effective.	Do not bury the seedling to avoid stem rot. Provide good air circulation and do not irrigate late in the day to avoid Botrytis stem infections.
	FINISH PGRs	TECH TIPS
	Spray with B-Nine® WSG® at 2,500–5,000 ppm as needed.	Verbena is very attractive to thrips and they can infect the plants with Tospovirus (Tomato Spotted Wilt Virus or Impatiens Necrotic Spot Virus) so start with an effective scouting program and start a thrips control program as soon as any population is detected. Supplemental HID lighting under short days or during cloudy weather will hasten flowering.

Verbena **OBSESSION™ CASCADE** *OP Verbena hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	70–72 °F (21–22 °C)	64–66 °F (18–19 °C)	125–175 ppm N	1 qt.   1 ppp   7–8 weeks 1.25 qt.   1–2 ppp   7–8 weeks 2.5 qt.   1–2 ppp   7–8 weeks 3 qt.   2–3 ppp   8–9 weeks 1.5 gal. HB   3–4 ppp   8–9 weeks 1.5 gal. pot   3–4 ppp   8–9 weeks	Fungus gnats, Shore flies, Thrips, Aphids, Spider mites	Pythium, Rhizoctonia, Powdery mildew, Tospovirus (Tomato Spotted Wilt Virus or Impatiens Necrotic Spot Virus)

Verbena **TUSCANY®** *OP Verbena hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	70–72 °F (21–22 °C)	64–66 °F (18–19 °C)	125–175 ppm N	Large Packs   1 ppp   6–7 weeks 1 pt.   1 ppp   6–8 weeks 1 qt.   1 ppp   7–9 weeks 2.5 qt.   2–3 ppp   9–10 weeks	Fungus gnats, Shore flies, Thrips, Aphids, Spider mites	Pythium, Rhizoctonia, Powdery mildew, Tospovirus (Tomato Spotted Wilt Virus or Impatiens Necrotic Spot Virus)

Vinca **BLOCKBUSTER™** *F1 Catharanthus roseus*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	6,000–8,000 foot candles (1,200–1,600 micro mols)	Day neutral	76–78 °F (24–26 °C)	64–66 °F (18–19 °C)	125–175 ppm N	Packs   1 ppp   3–4 weeks Large Packs   1 ppp   4–5 weeks 1 pt.   1 ppp   4–5 weeks 1 qt.   1 ppp   5–6 weeks 1.25 qt.   1–3 ppp   6–8 weeks 2.5 qt.   1–3 ppp   6–8 weeks 3 qt.   2–3 ppp   7–8 weeks 1.5 gal. pot   3–4 ppp   7–8 weeks	Thrips, Fungus gnats, Shore flies	Thielaviopsis, Rhizopus, Rhizoctonia, Pythium, Tospovirus (INSV and TSWV)

Vinca **CORA® CASCADE XDR** *F1 Catharanthus roseus*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	6,000–8,000 foot candles (1,200–1,600 micro mols)	Day neutral	76–78 °F (24–26 °C)	64–66 °F (18–19 °C)	125–175 ppm N	1 qt.   1–2 ppp   8–9 weeks 1.25 qt.   2–3 ppp   8–9 weeks 2.5 qt.   2–3 ppp   8–9 weeks 3 qt.   3 ppp   9–10 weeks 1.5 gal. HB   3–5 ppp   10–11 weeks 2 gal. HB   4–6 ppp   12–13 weeks	Thrips, Fungus gnats, Shore flies	Thielaviopsis, Rhizopus, Rhizoctonia, Pythium, and Tospovirus (INSV and TSWV)

Vinca **CORA® CLASSIC** *F1 Catharanthus roseus*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	6,000–8,000 foot candles (1,200–1,600 micro mols)	Day neutral	76–78 °F (24–26 °C)	64–66 °F (18–19 °C)	125–175 ppm N	Packs   1 ppp   5–8 weeks Large Packs   1 ppp   5–8 weeks 1 pt.   1 ppp   7–8 weeks 1 qt.   1–2 ppp   8–9 weeks 1.25 qt.   3 ppp   8–9 weeks 2.5 qt.   3 ppp   8–9 weeks	Thrips, Fungus gnats, Shore flies	Thielaviopsis, Rhizopus, Rhizoctonia, Pythium, and Tospovirus (INSV and TSWV)

Vinca **CORA® XDR** *F1 Catharanthus roseus*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	6,000–8,000 foot candles (1,200–1,600 micro mols)	Day neutral	76–78 °F (24–26 °C)	64–66 °F (18–19 °C)	125–175 ppm N	Packs   1 ppp   3–4 weeks Large Packs   1 ppp   3–4 weeks 1 pt.   1 ppp   4–5 weeks 1 qt.   1–2 ppp   4–5 weeks 1.25 qt.   3 ppp   4–6 weeks 2.5 qt.   3 ppp   4–6 weeks 1.5 gal. HB   4–5 ppp   8–9 weeks	Thrips, Fungus gnats, Shore Flies	Thielaviopsis, Rhizopus, Rhizoctonia, Pythium and Tospovirus (INSV and TSWV)

FINISH PGRs	TECH TIPS
Drench with Bonzi® at 1–3 ppm as needed to control growth. Also responds to sprays of Bonzi® at 10–20 ppm or B-Nine® WSG at 3,500–5,000 ppm.	Verbena is very attractive to Thrips and they can infect the plants with Tospovirus (Tomato Spotted Wilt Virus or Impatiens Necrotic Spot Virus) so start with an effective scouting program and start a thrips control program as soon as any population is detected. Supplemental HID lighting under short days or during cloudy weather will hasten flowering. Pinching Obsession Cascade Verbena will create the fullest looking plant but will increase crop time by about ten days.

FINISH PGRs	TECH TIPS
Spray with B-Nine® WSG at 2,500–5,000 ppm as needed.	Verbena is very attractive to thrips and they can infect the plants with Tospovirus (Tomato Spotted Wilt Virus or Impatiens Necrotic Spot Virus) so start with an effective scouting program and start a thrips control program as soon as any population is detected. Supplemental HID lighting under short days or during cloudy weather will hasten flowering.

FINISH PGRs	TECH TIPS
If needed sprays of B-Nine® WSG at 2,500–5,000 ppm or A-Rest® at 2–4 ppm may be applied.	Start with a disinfected growing area and keep media pH below 5.8 to help avoid Thielaviopsis infections. Control thrips to prevent INSV or TSWW infections. Do not try to finish Vinca early in the North since the plants need high light and warm temperatures to grow adequately. Plant growth regulators (PGRs) are usually not required except in pack production. Never apply Bonzi® to vinca as leaf spotting may occur.

FINISH PGRs	TECH TIPS
If needed sprays of B-Nine® WSG at 2,500–5,000 ppm or A-Rest® at 2–4 ppm may be applied.	Start with a disinfected growing area and keep media pH below 5.8 to help avoid Thielaviopsis infections. Cora Cascade's disease resistance is targeted to aerial Phytophthora which is a serious landscape disease in southern climates. It may have higher resistance to other diseases but is still susceptible to Thielaviopsis. Control Thrips to prevent INSV or TSWW infections. Do not try to finish Vinca early in the North since the plants need high light and warm temperatures to grow adequately. PGRs are usually not required except in pack production. Never apply Bonzi® to Vinca since leaf spotting may occur.

FINISH PGRs	TECH TIPS
If needed sprays of B-Nine® WSG at 2,500–5,000 ppm or A-Rest® at 2–4 ppm may be applied.	Start with a disinfected growing area and keep media pH below 5.8 to help avoid Thielaviopsis infections. Cora's disease resistance is targeted to aerial Phytophthora which is a serious landscape disease in southern climates. It may have higher resistance to other diseases but is still susceptible to Thielaviopsis. Control Thrips to prevent INSV or TSWW infections. Do not try to finish Vinca early in the North since the plants need high light and warm temperatures to grow adequately. PGRs are usually not required except in pack production. Never apply Bonzi® to Vinca since leaf spotting may occur.

FINISH PGRs	TECH TIPS
If needed sprays of B-Nine® WSG at 2,500–5,000 ppm or A-Rest® at 2–4 ppm may be applied.	Start with a disinfected growing area and keep media pH below 5.8 to help avoid Thielaviopsis infections. Cora® XDR's disease resistance is targeted to aerial Phytophthora which is a serious landscape disease in southern climates. It may have higher resistance to other diseases but is still susceptible to Thielaviopsis. Control Thrips to prevent INSV or TSWW infections. Do not try to finish Vinca early in the North since the plants need high light and warm temperatures to grow adequately. PGRs are usually not required except in pack production. Never apply Bonzi® to Vinca since leaf spotting may occur.

Vinca **SUNSTORM**<sup>®</sup> *OP Catharanthus roseus*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 2.3–3.2 mS/cm	6,000–8,000 foot candles (1,200–1,600 micro mols)	Day neutral	76–78 °F (24–26 °C)	64–66 °F (18–19 °C)	125–175 ppm N	Packs   1 ppp   4–6 weeks 1 pt.   1 ppp   5–8 weeks 1 qt.   1–2 ppp   6–8 weeks 1.25 qt.   3 ppp   7–8 weeks	Thrips, Fungus gnats, Shore flies	Aerial Phytophthora, Thielaviopsis, Rhizopus, Rhizoctonia, Pythium, Tospovirus (INSV and TSWV)

Viola **DELTINI**<sup>™</sup> *F1 Viola cornuta*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	64–66 °F (18–19 °C)	64–66 °F (18–19 °C)	75–125 ppm N	Packs   1 ppp   3–4 weeks Large Packs   1 ppp   4–5 weeks 1 pt.   1–2 ppp   5–6 weeks 1 qt.   1–2 ppp   5–6 weeks	Aphids, Thrips	Alternaria, Downy mildew, Thielaviopsis, Cercospora, Botrytis

Viola **ENDURIO**<sup>®</sup> *F1 Viola cornuta*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	64–66 °F (18–19 °C)	64–66 °F (18–19 °C)	75–125 ppm N	Large Packs   1–2 ppp   5–6 weeks 5–6 weeks 1 qt.   1–2 ppp   5–6 weeks 1.25 qt.   2–3 ppp   6–7 weeks 2.5 qt.   2–3 ppp   6–7 weeks 1.5 gal. HB   5 ppp   7–9 weeks	Aphids, Thrips	Alternaria, Downy mildew, Thielaviopsis, Cercospora, Botrytis

Viola **PENNY**<sup>™</sup> *F1 Viola cornuta*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	64–66 °F (18–19 °C)	64–66 °F (18–19 °C)	75–125 ppm N	Packs   1 ppp   4–5 weeks Large Packs   1–2 ppp   5–6 weeks 1 pt.   1–2 ppp   5–6 weeks 1 qt.   1–2 ppp   5–6 weeks 1.25 qt.   3 ppp   6–7 weeks	Aphids, Thrips	Alternaria, Downy mildew, Thielaviopsis, Cercospora, Botrytis

Viola **TIGER EYE**<sup>™</sup> *F1 Viola cornuta*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	64–66 °F (18–19 °C)	64–66 °F (18–19 °C)	75–125 ppm N	Packs   1 ppp   4–5 weeks Large Packs   1–2 ppp   5–6 weeks 1 pt.   1–2 ppp   5–6 weeks 1 qt.   1–2 ppp   5–6 weeks 1.25 qt.   3 ppp   5–6 weeks 1.5 gal. pot   4–5 ppp   7–8 weeks	Aphids, Thrips	Alternaria, Downy mildew, Thielaviopsis, Cercospora, Botrytis

Wallflower **SUGAR RUSH**<sup>™</sup> *F1 Cheiranthus cheiri*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	60–62 °F (16–17 °C)	58–60 °F (14–16 °C)	125–175 ppm N	Packs   1 ppp   5–6 weeks Large Packs   1 ppp   5–6 weeks 1 pt.   1 ppp   6–7 weeks 1 qt.   1 ppp   6–7 weeks 1.25 qt.   3 ppp   6–7 weeks 2.5 qt.   3 ppp   6–7 weeks 3 qt.   3–4 ppp   7–8 weeks 1.5 gal. pot   4–5 ppp   7–8 weeks	Thrips, Spider mites, Aphids	Botrytis, Sclerotinia, Powdery mildew, Pythium, Rhizoctonia

Zinnia **MAGELLAN**<sup>™</sup> *F1 Zinnia elegans*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative short day	74–76 °F (23–24 °C)	62–64 °F (17–18 °C)	200–250 ppm N	1 qt.   1 ppp   7–8 weeks 1.25 qt.   2–3 ppp   7–8 weeks 2.5 qt.   3 ppp   7–8 weeks	Aphids, Whiteflies, Thrips	Powdery mildew, Botrytis, Bacterial leaf spot, Alternaria leaf spot

FINISH PGRs	TECH TIPS
If needed sprays of B-Nine® WSG at 2,500–5,000 ppm or A-Rest® at 2–4 ppm may be applied.	Start with a disinfected growing area and keep media pH below 5.8 to help avoid Thielaviopsis infections. Control Thrips to prevent INSV or TSWV infections. Do not try to finish Vinca early in the North since the plants need high light and warm temperatures to grow adequately. Plant growth regulators (PGRs) are usually not required except in pack production. Never apply Bonzi® to Vinca since leaf spotting may occur.
FINISH PGRs	TECH TIPS
Usually not required if growing cool. If conditions are warmer or darker than ideal, spray with B-Nine® WSG at 2,500–5,000 ppm.	Keep media pH below 5.8 to help avoid Thielaviopsis infections. Under hot temperatures provide lower light levels to reduce heat stress. Also, if very frequent irrigation occurs due to high temperatures, apply a supplemental feed of Solubor® to avoid boron deficiency.
FINISH PGRs	TECH TIPS
Usually not required if growing cool. If conditions are warmer or darker than ideal spray with B-Nine® WSG at 2,500–5,000 ppm.	Keep media pH below 5.8 to help avoid Thielaviopsis infections. Under hot temperatures provide lower light levels to reduce heat stress. Also, if very frequent irrigation occurs due to high temperatures, apply a supplemental feed of Solubor® to avoid Boron deficiency.
FINISH PGRs	TECH TIPS
Usually not required if growing cool. If conditions are warmer or darker than ideal spray with B-Nine® WSG at 2,500–5,000 ppm.	Keep media pH below 5.8 to help avoid Thielaviopsis infections. Under hot temperatures provide lower light levels to reduce heat stress. Also, if very frequent irrigation occurs due to high temperatures apply a supplemental feed of Solubor® to avoid boron deficiency.
FINISH PGRs	TECH TIPS
Usually not required if growing cool. If conditions are warmer or darker than ideal, spray with B-Nine® WSG at 2,500–5,000 ppm.	Keep media pH below 5.8 to help avoid Thielaviopsis infections. Under hot temperatures provide lower light levels to reduce heat stress. Also, if frequent irrigation occurs due to high temperatures, apply a supplemental feed of Solubor® to avoid boron deficiency.
FINISH PGRs	TECH TIPS
Fall crops usually require a plant growth regulator (PGR) application due to the warmer temperatures. Start PGR applications early—about one week after transplant. Sprays of B-Nine® WSG at 2,500 ppm plus Cycocel® at 1,000 ppm are effective as are sprays of Bonzi® at 20 ppm.	Providing day length of longer than 13 hours in the spring will promote faster flowering. Do not let media stay saturated during periods of low light levels or root rot may occur.
FINISH PGRs	TECH TIPS
B-Nine® WSG at 2,500–5,000 ppm 1–3 times depending on container size and environmental conditions. Start PGR applications early—about one week after transplant. To prevent late flower stem, stretch drench with Bonzi® at 1–2 ppm when flowers start to show color.	Extending the day length during short days to 14 hours will help ensure the first flowers will be fully double. Do not overwater—Zinnias are susceptible to root rot diseases. Growing at lower than recommended temperatures can also lead to root disease issues. Proper air circulation will help reduce the likelihood of powdery mildew infections.

Zinnia **SHORT STUFF™** *F1 Zinnia elegans*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative short day	74–76 °F (23–24 °C)	62–64 °F (17–18 °C)	200–250 ppm N	Packs   1 ppp   6–7 weeks 1 qt.   1 ppp   7–8 weeks	Aphids, Whiteflies, Thrips	Powdery Mildew, Botrytis, Bacterial Leaf Spot, Alternaria Leaf Spot

Zinnia **SWIZZLE™** *F1 Zinnia elegans*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative short day	74–76 °F (23–24 °C)	62–64 °F (17–18 °C)	200–250 ppm N	1 qt.   1 ppp   7–8 weeks 1.25 qt.   2–3 ppp   7–8 weeks 2.5 qt.   3 ppp   7–8 weeks	Aphids, Whiteflies, Thrips	Powdery mildew, Botrytis, Bacterial leaf spot, Alternaria leaf spot

Zinnia **UPROAR™** *F1 Zinnia elegans*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative short day	74–76 °F (23–24 °C)	62–64 °F (17–18 °C)	200–250 ppm N	1.25 qt.   2–3 ppp   7–8 weeks 2.5 qt.   3 ppp   7–8 weeks 1.5 gal. pot   5 ppp   8–9 weeks	Aphids, Whiteflies, Thrips	Powdery mildew, Botrytis, Bacterial leaf spot, Alternaria leaf spot

Zinnia **ZOWIE!™** *F1 Zinnia elegans*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative short day	74–76 °F (23–24 °C)	62–64 °F (17–18 °C)	200–250 ppm N	1.25 qt.   2–3 ppp   7–8 weeks 2.5 qt.   3 ppp   7–8 weeks 1.5 gal. pot   5 ppp   8–9 weeks	Aphids, Whiteflies, Thrips	Powdery mildew, Botrytis, Bacterial leaf spot, Alternaria leaf spot

Zinnia **ZYDECO™** *OP Zinnia marylandica*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	FINISHING PROGRAM	PESTS	DISEASES
pH: 5.5–5.9 SME 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative short day	74–76 °F (23–24 °C)	62–64 °F (17–18 °C)	200–250 ppm N	Large Packs   1 ppp   6–7 weeks 1 pt.   1 ppp   7–8 weeks 1 qt.   1 ppp   7–8 weeks 1.25 qt.   1–2 ppp   7–8 weeks 2.5 qt.   1–2 ppp   7–8 weeks 3 qt.   3–4 ppp   7–8 weeks 1.5 gal. HB   3–4 ppp   7–8 weeks	Aphids, Whiteflies, Thrips	Powdery mildew, Botrytis, Bacterial leaf spot, Alternaria leaf spot

FINISH PGRs	TECH TIPS
B-Nine® WSG at 2,500–5,000 ppm if needed.	Extending the day length during short days to 14 hours will help ensure the first flowers will be fully double. Do not overwater—Zinnias are susceptible to root rot diseases. Growing at lower than recommended temperatures can also lead to root disease issues. Proper air circulation will help reduce the likelihood of powdery mildew infections.
FINISH PGRs	TECH TIPS
Spray with B-Nine® WSG at 2,500–5,000 ppm 1–3 times depending on container size and environmental conditions. Start plant growth regulator (PGR) applications early—about one week after transplant. To prevent late flower stem stretch drench with Bonzi® at 1–2 ppm when flowers start to show color.	Extending the day length during short days to 14 hours will help ensure the first flowers will be fully double. Do not overwater—Zinnias are susceptible to root rot diseases. Growing at lower than recommended temperatures can also lead to root disease issues. Proper air circulation will help reduce the likelihood of powdery mildew infections.
FINISH PGRs	TECH TIPS
Spray with B-Nine® WSG at 2,500–5,000 ppm 1–3 times depending on container size and environmental conditions. Start plant growth regulator (PGR) applications early—about one week after transplant. To prevent late flower stem stretch drench with Bonzi® at 1–2 ppm when flowers start to show color.	Extending the day length during short days to 14 hours will help ensure the first flowers will be fully double. Do not overwater—Zinnias are susceptible to root rot diseases. Growing at lower than recommended temperatures can also lead to root disease issues. Proper air circulation will help reduce the likelihood of powdery mildew infections.
FINISH PGRs	TECH TIPS
Spray with B-Nine® WSG at 2,500–5,000 ppm 1–3 times depending on container size and environmental conditions. Start PGR applications about 10–14 days after transplant. To prevent late flower stem stretch drench with Bonzi® at 0.5–1 ppm when flowers start to show color.	Extending the day length during short days to 14 hours will help ensure the first flowers will be fully double. Do not overwater—Zinnias are susceptible to root rot diseases. Growing at lower than recommended temperatures can also lead to root disease issues. Proper air circulation will help reduce the likelihood of powdery mildew infections.



Callie® Hot Pink Spark

# Vegetative Propagation

Hot Blooded® Red



Angelonia **CARITA™** *Angelonia angustifolia*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Recommended	3.5–4 weeks	72–74 °F (22–23 °C)

**Comments:** Carita Angelonia has moderate vigor and will generally need a plant growth regulator (PGR) treatment in propagation. To control growth after rooting, sprays of B-Nine® WSG (1,500 ppm), or a tank-mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (1,500 ppm) are sufficient. Do not spray Florel® on Angelonia since this can burn foliage and cause significant flower delay. For all sprays listed above, the mist should be off for a minimum of one hour for the PGR to absorb into the leaf tissue.

Angelonia **CARITA™ CASCADE** *Angelonia angustifolia*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Recommended	3.5–4 weeks	72–74 °F (22–23 °C)

**Comments:** Carita Cascade Angelonia has moderate vigor and will generally need a plant growth regulator (PGR) treatment in propagation. To control growth after rooting, sprays of B-Nine® WSG (1,500 ppm) or a tank-mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (1,500 ppm) are normally sufficient. Do not spray Florel® on Angelonia since this can burn foliage and cause significant flower delay. For all sprays listed above, the mist should be off for a minimum of one hour for the PGR to absorb into the leaf tissue.

Argyranthemum **SASSY®** *Argyranthemum frutescens*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Not recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** Sassy Argyranthemum have moderate vigor and will generally need a plant growth regulator (PGR) treatment in propagation. To control growth after rooting, a tank-mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm) is normally sufficient. It is also becoming popular for growers to combine Florel® at 350–500 ppm with the B-Nine® WSG solution listed above to increase growth control and to improve branching. These Florel® + B-Nine® WSG combo sprays should be applied to actively growing plants. Do not spray B-Nine® WSG or Florel® + B-Nine® WSG tank mixes on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the PGR to absorb into the leaf tissue.

Bacopa **CALYPSO™** *Sutera cordata*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** Calypso Bacopa has moderate vigor and will generally need a plant growth regulator (PGR) treatment in propagation. To control growth after rooting, a spray of B-Nine® WSG (1,500 ppm) is sufficient. It is also becoming popular for growers to combine Florel® (200 ppm) with the B-Nine® WSG (1,500 ppm) to increase growth control and to improve branching. These Florel® + B-Nine® WSG combo sprays should be applied to actively growing plants. Do not spray B-Nine® WSG or Florel® + B-Nine® WSG tank mixes on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

Begonia **FLORENCIO™** *Begonia hybrida*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
72-cell	URC	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Recommended	6 weeks	72–75 °F (22–24 °C)

**Comments:** Cycocel® at 500–1,000 ppm.

Begonia **GRACE™** *Begonia hybrida*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC	Not Recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Recommended	6 weeks	72–75 °F (22–24 °C)

**Comments:** Cycocel® at 500–1,000 ppm.

Bidens **BRAZEN™** *Bidens ferulifolia*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** Brazen Samurai, Eternal Flame, and Rising Sun Bidens have moderate-to-high vigor and will generally need a plant growth regulator (PGR) treatment in propagation. To control growth after rooting, a spray of B-Nine® WSG (1,500–2,500 ppm) is effective. It is also becoming popular for growers to combine Florel® (350 ppm) with the B-Nine® WSG (1,500 ppm) to increase growth control and improve branching. These Florel® + B-Nine® WSG combo sprays should be applied to actively growing plants. Do not spray B-Nine® WSG or Florel® + B-Nine® WSG tank mixes on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the PGR to absorb into the leaf tissue. Brazen Imperial Luck Bidens has relatively low vigor and generally needs little PGR treatment in propagation.

## VEGETATIVE PROPAGATION

### Bidens **MEXICAN GOLD™** *Bidens ferulifolia*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSii® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** Mexican Gold and Mexican Gold Jumbo Bidens have moderate vigor and will generally need a PGR treatment in propagation. To control growth after rooting, a spray of B-Nine® WSG (1,500–2,500 ppm) is sufficient. It is also becoming popular for growers to combine Florel® (350 ppm) with the B-Nine® WSG (1,500 ppm) to increase growth control and to improve branching. These Florel® + B-Nine® WSG combo sprays should be applied to actively growing plants. Do not spray B-Nine® WSG or Florel® + B-Nine® WSG tank mixes on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue. Mexican Gold Compact Bidens has very low vigor and generally needs little PGR treatment in propagation.

### Calibrachoa **CABRIO™** *Calibrachoa hybrida*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Recommended	CapSii® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Recommended	4.5–5 weeks	72–74 °F (22–23 °C)

**Comments:** Cabrio Calibrachoa are compact-medium growers and should not need the typical growth regular in propagation that other more vigorous varieties require. To keep plants under control, a spray of B-Nine® WSG at 1,500–2,500 ppm can be applied after cuttings are well-rooted and vegetative growth begins. It is also becoming popular for growers to combine Florel® at 350–500 ppm with the B-Nine® WSG solution listed above to increase growth control and to improve branching. These Florel® + B-Nine® WSG combo sprays should be applied to actively growing plants and done ideally before pinching. Do not spray B-Nine® WSG or Florel® + B-Nine® WSG tank mixes on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

### Calibrachoa **CALLIE®** *Calibrachoa hybrida*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Recommended	CapSii® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Recommended	4.5–5 weeks	72–74 °F (22–23 °C)

**Comments:** Callie Calibrachoa have a range of vigor, with some being relatively compact to others having more of a medium to medium-vigorous habit. To keep plants under control, a spray of B-Nine® WSG at 1,500–2,500 ppm can be applied after cuttings are well-rooted and vegetative growth begins. It is also becoming popular for growers to combine Florel® at 350–500 ppm with the B-Nine® WSG solution listed above to increase growth control and to improve branching. These Florel® + B-Nine® WSG combo sprays should be applied to actively growing plants and done ideally before pinching. Do not spray B-Nine® WSG or Florel® + B-Nine® WSG tank mixes on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to be absorbed into the leaf tissue.

### Calocephalus **WHIMSY™** *Calocephalus brownii*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not Recommended	CapSii® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Not recommended	4.5–5 weeks	70–74 °F (21–23 °C)

**Comments:** Whimsy Calocephalus is a compact, dense-growing plant. It should not require any chemical growth regulation.

### Curry Plant **HELICHRYSUM ITALICUM** *Helichrysum italicum*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSii® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Not recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** Helichrysum italicum is a bushy, dense-growing plant. It typically does not require any chemical growth regulation in propagation. Transplant on time to avoid stretched growth. Use plastic tenting or Reemay® fabric during propagation if needed to keep high humidity and to minimize excess water on the foliage.

### Dahlia **CAFÉ AU LAIT** *Dahlia hybrida*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC	Recommended	CapSii® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Not recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** Café Au Lait Dahlia has a moderately vigorous habit and may require a plant growth regulator (PGR) treatment in propagation. If needed to control growth after rooting, sprays of B-Nine® WSG (1,500 ppm) are usually sufficient. A tank-mix spray of Florel® (350–500 ppm) + B-Nine® WSG (1,500 ppm) can also be used to control growth and improve branching. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the PGR to absorb into the leaf tissue.

### Dahlia **DAHLEGRIA®** *Dahlia hybrida*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not Recommended	CapSii® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Not recommended	3.5–4 weeks	72–74 °F (22–23 °C)

**Comments:** Dahlegria Dahlia has a vigorous habit, and it will need a plant growth regulator (PGR) treatment in propagation. To control growth after rooting, sprays of B-Nine® WSG (2,500–3,500 ppm) are usually sufficient. A tank-mix spray of Florel® (350–500 ppm) + B-Nine® WSG (2,500 ppm) can also be used to control growth and improve branching. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the PGR to absorb into the leaf tissue.

Dahlia **GRANDALIA™** *Dahlia hybrida*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Not recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** Grandalia Dahlia has moderate to high vigor and will generally need plant growth regulator (PGR) use in propagation. To control growth after rooting, sprays of B-Nine® WSG (1,500–2,500 ppm) are usually sufficient. A tank-mix spray of Florel® (350–500 ppm) + B-Nine® WSG (1,500–2,500 ppm) can also be used to control growth and improve branching. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the PGR to absorb into the leaf tissue.

Dahlia **HAPPY DAYS™** *Dahlia hybrida*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Not recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** Happy Days Dahlia has moderate vigor and will generally need a plant growth regulator (PGR) treatment in propagation. To control growth after rooting, sprays of B-Nine® WSG (1,500–2,500 ppm) are usually sufficient. A tank-mix spray of Florel® (350–500 ppm) + B-Nine® WSG (1,500–2,500 ppm) can also be used to control growth and improve branching. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the PGR to absorb into the leaf tissue.

Dahlia **KARMA** *Dahlia hybrida*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC	Recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Not recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** Karma Dahlia has a moderately vigorous habit and may require a plant growth regulator (PGR) treatment in propagation. If needed to control growth after rooting, sprays of B-Nine® WSG (1,500 ppm) are usually sufficient. A tank-mix spray of Florel® (350–500 ppm) + B-Nine® WSG (1,500 ppm) can also be used to control growth and improve branching. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the PGR to absorb into the leaf tissue.

Dahlia **MOON LADY** *Dahlia hybrida*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC	Recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Not recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** Moon Lady Dahlia has a moderately vigorous habit and may require a plant growth regulator (PGR) treatment in propagation. If needed to control growth after rooting, sprays of B-Nine® WSG (1,500 ppm) are usually sufficient. A tank-mix spray of Florel® (350–500 ppm) + B-Nine® WSG (1,500 ppm) can also be used to control growth and improve branching. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the PGR to absorb into the leaf tissue.

Dahlia **SINCERITY** *Dahlia hybrida*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Not recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** Sincerity Dahlia has a moderately vigorous habit and may require a plant growth regulator (PGR) treatment in propagation. If needed to control growth after rooting, sprays of B-Nine® WSG (1,500 ppm) are usually sufficient. A tank-mix spray of Florel® (350–500 ppm) + B-Nine® WSG (1,500 ppm) can also be used to control growth and improve branching. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the PGR to absorb into the leaf tissue.

Diascia **DARLA®** *Diascia barberae*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** Darla Diascia has moderate vigor and will generally need a plant growth regulator (PGR) treatment in propagation. To control growth after rooting, sprays of B-Nine® WSG (2,500 ppm) or Florel® (350 ppm) are sufficient. It is also becoming popular for growers to combine Florel® (350 ppm) with the B-Nine® WSG (1,500 ppm) to increase growth control and to improve branching. These Florel® + B-Nine® WSG combo sprays should be applied to actively growing plants. Do not spray B-Nine® WSG or Florel® + B-Nine® WSG tank mixes on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the PGR to absorb into the leaf tissue.

Dipladenia **MADINIA®** *Mandevilla hybrida*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC	Recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Recommended	5–6 weeks	72–74 °F (22–23 °C)

**Comments:** To control growth after rooting, a spray of B-Nine® WSG (3,500–4,000 ppm) can be used. Sprays of Configure® (150–300 ppm) or Atrimmec® (200 ppm) can also be used to improve branching on the young rooted plants. These Configure® or Atrimmec® sprays should be applied to actively growing plants and done ideally before pinching. Do not spray B-Nine® WSG, Configure®, or Atrimmec® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

## VEGETATIVE PROPAGATION

### Dipladenia **MADINIA® MAXIMO** *Mandevilla hybrida*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC	Recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Recommended	5–6 weeks	72–74 °F (22–23 °C)

**Comments:** To control growth after rooting, a spray of B-Nine® WSG (3,500–4,000 ppm) can be used. Sprays of Configure® (150–300 ppm) or Atrimmec® (200 ppm) can also be used to improve branching on the young rooted plants. These Configure® or Atrimmec® sprays should be applied to actively growing plants and done ideally before pinching. Do not spray B-Nine® WSG, Configure®, or Atrimmec® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

### Dorotheanthus **MEZOO™** *Dorotheanthus bellidiformis*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Recommended	4.5–5 weeks	72–74 °F (22–23 °C)

**Comments:** Not needed. Control by pinching if needed.

### Euphorbia **EUPHORIC™** *Euphorbia hypericifolia*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Recommended	3.5–4 weeks	72–74 °F (22–23 °C)

**Comments:** To control growth after rooting, a spray of B-Nine® WSG (1,500–2,500 ppm) can be used.

### Geranium Interspecific **CALDERA™** *Pelargonium interspecific*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC, AutoStix®	Recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Not recommended	4.5–5 weeks	70–74 °F (21–23 °C)

**Comments:** To help reduce bottom leaf yellowing during propagation (e.g., on delayed shipments or where cuttings have gotten warm during shipping), Fascination® can be sprayed on the cuttings at 2.0–2.5 ppm within 24 hours after sticking. Caldera Interspecific Geranium growth can be controlled using sprays of Cycocel® at 750–1,000 ppm and under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm). Bonzi® sprays are not recommended in propagation because of the chance of getting into the rooting media and stunting the plant. Florel® can also be sprayed at 300–350 ppm 2.5–3 weeks after sticking and after good root formation to improve branching, reduce premature flowering, and to control growth. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

### Geranium Interspecific **CALIENTE®** *Pelargonium interspecific*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Not recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** To help reduce bottom leaf yellowing during propagation (e.g., on delayed shipments or where cuttings have gotten warm during shipping), Fascination® can be sprayed on the cuttings at 2.0–2.5 ppm within 24 hours after sticking. Caliente Interspecific Geranium growth can be controlled using sprays of Cycocel® at 1,000 ppm and under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm). Bonzi® sprays are not recommended in propagation because of the chance of getting into the rooting media and stunting the plant. Florel® can also be sprayed at 300–350 ppm 2.5–3 weeks after sticking and after good root formation to improve branching, reduce premature flowering, and to control growth. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

### Geranium Interspecific **CALLIOPE® CASCADE** *Pelargonium interspecific*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Not recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** To help reduce bottom leaf yellowing during propagation (e.g., on delayed shipments or where cuttings have gotten warm during shipping), Fascination® can be sprayed on the cuttings at 2.0–2.5 ppm within 24 hours after sticking. Calliope Cascade Interspecific Geranium growth can be controlled using sprays of Cycocel® at 1,000 ppm and under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm). Bonzi® sprays are not recommended in propagation because of the chance of getting into the rooting media and stunting the plant. Florel® can also be sprayed at 300–350 ppm 2.5–3 weeks after sticking and after good root formation to improve branching, reduce premature flowering, and to control growth. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the PGR to absorb into the leaf tissue.

Geranium Interspecific **CALLIOPE® LARGE** *Pelargonium interspecific*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Not recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** To help reduce bottom leaf yellowing during propagation (e.g., on delayed shipments or where cuttings have gotten warm during shipping), Fascination® can be sprayed on the cuttings at 2.0–2.5 ppm within 24 hours after sticking. Calliope Large Interspecific Geranium growth can be controlled using sprays of Cycocel® at 1,000 ppm and under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm). Bonzi® sprays are not recommended in propagation because of the chance of getting into the rooting media and stunting the plant. Florel® can also be sprayed at 300–350 ppm 2.5–3 weeks after sticking and after good root formation to improve branching, reduce premature flowering, and to control growth. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

Geranium Interspecific **CALLIOPE® MEDIUM** *Pelargonium interspecific*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Not recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** To help reduce bottom leaf yellowing during propagation (e.g., on delayed shipments or where cuttings have gotten warm during shipping), Fascination® can be sprayed on the cuttings at 2.0–2.5 ppm within 24 hours after sticking. Calliope Medium Interspecific Geranium growth can be controlled using sprays of Cycocel® at 750–1,000 ppm and under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm). Bonzi® sprays are not recommended in propagation because of the chance of getting into the rooting media and stunting the plant. Florel® can also be sprayed at 300–350 ppm 2.5–3 weeks after sticking and after good root formation to improve branching, reduce premature flowering, and to control growth. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

Geranium Interspecific **MANTRA™** *Pelargonium interspecific*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Not recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** To help reduce bottom leaf yellowing during propagation (e.g., on delayed shipments or where cuttings have gotten warm during shipping), Fascination® can be sprayed on the cuttings at 2.0–2.5 ppm within 24 hours after sticking. Mantra Interspecific Geranium growth can be controlled using sprays of Cycocel® at 1,000 ppm and under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm). Bonzi® sprays are not recommended in propagation because of the chance of getting into the rooting media and stunting the plant. Florel® can also be sprayed at 300–350 ppm 2.5–3 weeks after sticking and after good root formation to improve branching, reduce premature flowering, and to control growth. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the PGR to absorb into the leaf tissue.

Geranium Interspecific **MOJO™** *Pelargonium interspecific*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Not recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** To help reduce bottom leaf yellowing during propagation (e.g., on delayed shipments or where cuttings have gotten warm during shipping), Fascination® can be sprayed on the cuttings at 2.0–2.5 ppm within 24 hours after sticking. Mojo Interspecific Geranium growth can be controlled using sprays of Cycocel® at 750–1,000 ppm and under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm). Bonzi® sprays are not recommended in propagation because of the chance of getting into the rooting media and stunting the plant. Florel® can also be sprayed at 300–350 ppm 2.5–3 weeks after sticking and after good root formation to improve branching, reduce premature flowering, and to control growth. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

Geranium Interspecific **MOXIE!™** *Pelargonium interspecific*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Not recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** To help reduce bottom leaf yellowing during propagation (e.g., on delayed shipments or where cuttings have gotten warm during shipping), Fascination® can be sprayed on the cuttings at 2.0–2.5 ppm within 24 hours after sticking. Moxie! Interspecific Geranium growth can be controlled using sprays of Cycocel® at 750–1,000 ppm and under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm). Bonzi® sprays are not recommended in propagation because of the chance of getting into the rooting media and stunting the plant. Florel® can also be sprayed at 300–350 ppm 2.5–3 weeks after sticking and after good root formation to improve branching, reduce premature flowering, and to control growth. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

Geranium Interspecific **PRETTY LITTLE™** *Pelargonium interspecific*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Not recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** To help reduce bottom leaf yellowing during propagation (e.g., on delayed shipments or where cuttings have gotten warm during shipping), Fascination® can be sprayed on the cuttings at 2.0–2.5 ppm within 24 hours after sticking. Pretty Little Interspecific Geranium growth can be controlled using sprays of Cycocel® at 750–1,000 ppm. Bonzi® sprays are not recommended in propagation because of the chance of getting into the rooting media and stunting the plant. Florel® can also be sprayed at 300–350 ppm 2.5–3 weeks after sticking and after good root formation to improve branching, reduce premature flowering, and to control growth. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

Geranium Ivy **CASCADE** *Pelargonium peltatum*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC, AutoStix®	Recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Not recommended	4.5–5 weeks	70–74 °F (21–23 °C)

**Comments:** To help reduce bottom leaf yellowing during propagation (e.g., on delayed shipments or where cuttings have gotten warm during shipping), Fascination® can be sprayed on the cuttings at 2.0–2.5 ppm within 24 hours after sticking. Cascade Ivy Geranium growth can be controlled using sprays of Cycocel® at 750–1,000 ppm and under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm). Bonzi® sprays are not recommended in propagation because of the chance of getting into the rooting media and stunting the plant. Florel® can also be sprayed at 300–350 ppm 2.5–3 weeks after sticking and after good root formation to improve branching, reduce premature flowering, and to control growth. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

Geranium Ivy **IVY LEAGUE™** *Pelargonium peltatum*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC, AutoStix®	Recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Not recommended	4.5–5 weeks	70–74 °F (21–23 °C)

**Comments:** To help reduce bottom leaf yellowing during propagation (e.g., on delayed shipments or where cuttings have gotten warm during shipping), Fascination® can be sprayed on the cuttings at 2.0–2.5 ppm within 24 hours after sticking. Ivy League Ivy Geranium growth can be controlled using sprays of Cycocel® at 750–1,000 ppm and under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm). Bonzi® sprays are not recommended in propagation because of the chance of getting into the rooting media and stunting the plant. Florel® can also be sprayed at 300–350 ppm 2.5–3 weeks after sticking and after good root formation to improve branching, reduce premature flowering, and to control growth. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

Geranium Zonal **AMERICANA®** *Pelargonium zonale*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Not recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** To help reduce bottom leaf yellowing during propagation (e.g., on delayed shipments or where cuttings have gotten warm during shipping), Fascination® can be sprayed on the cuttings at 2.0–2.5 ppm within 24 hours after sticking. Americana Zonal Geranium growth can be controlled using sprays of Cycocel® at 750–1,000 ppm and under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm). Bonzi® sprays are not recommended in propagation because of the chance of getting into the rooting media and stunting the plant. Florel® can also be sprayed at 300–350 ppm 2.5–3 weeks after sticking and after good root formation to improve branching, reduce premature flowering, and to control growth. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

Geranium Zonal **NOVELTY COLLECTION** *Pelargonium zonale*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Not recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** To help reduce bottom leaf yellowing during propagation (e.g., on delayed shipments or where cuttings have gotten warm during shipping), Fascination® can be sprayed on the cuttings at 2.0–2.5 ppm within 24 hours after sticking. Growth can be controlled using sprays of Cycocel® at 750–1,000 ppm and under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm). Bonzi® sprays are not recommended in propagation because of the chance of getting into the rooting media and stunting the plant. Florel® can also be sprayed at 300–350 ppm 2.5–3 weeks after sticking and after good root formation to improve branching, reduce premature flowering, and to control growth. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

Geranium Zonal **ROCKY MOUNTAIN™** *Pelargonium zonale*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Not recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** To help reduce bottom leaf yellowing during propagation (e.g., on delayed shipments or where cuttings have gotten warm during shipping), Fascination® can be sprayed on the cuttings at 2.0–2.5 ppm within 24 hours after sticking. Rocky Mountain Zonal Geranium growth can be controlled using sprays of Cycocel® at 750–1,000 ppm and under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm). Bonzi® sprays are not recommended in propagation because of the chance of getting into the rooting media and stunting the plant. Florel® can also be sprayed at 300–350 ppm 2.5–3 weeks after sticking and after good root formation to improve branching, reduce premature flowering, and to control growth. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

Geranium Zonal **TANGO™** *Pelargonium zonale*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Not recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** To help reduce bottom leaf yellowing during propagation (e.g., on delayed shipments or where cuttings have gotten warm during shipping), Fascination® can be sprayed on the cuttings at 2.0–2.5 ppm within 24 hours after sticking. Tango Zonal Geranium growth can be controlled using sprays of Cycocel® at 750–1,000 ppm and under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm). Bonzi® sprays are not recommended in propagation because of the chance of getting into the rooting media and stunting the plant. Florel® can also be sprayed at 300–350 ppm 2.5–3 weeks after sticking and after good root formation to improve branching, reduce premature flowering, and to control growth. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

Heliotrope **SCENTROPIA™** *Heliotropium arborescens*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC	Recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Not recommended	4.5–5 weeks	72–74 °F (22–23 °C)

**Comments:** To control growth after rooting, a spray of B-Nine® WSG (1,500–2,500 ppm) can be used. A tank-mix spray of Florel® (350 ppm) + B-Nine® WSG (1,500–2,500 ppm) can also be applied to control growth and improve branching. Cuttings of Scentropia Heliotrope are sensitive to chilling, so avoid storing cuttings <50 °F (10 °C). Stick unrooted cuttings immediately upon arrival—they do not like to be stored. Avoid over-misting during propagation.

Impatiens **SILHOUETTE®** *Impatiens walleriana*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Not recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** To control growth, sprays of Bonzi® (5 ppm) can be applied. Growers can also try a combo spray of Florel® (350 ppm) + B-Nine® WSG (1,500 ppm) to control growth and improve branching. Silhouette Impatiens are fast rooters and will be ready to transplant from propagation relatively quickly. Unrooted cuttings are sensitive to chilling, so avoid storing cuttings <50°F (10 °C).

Impatiens Interspecific New Guinea **SPECTRA™** *Impatiens interspecific*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Not recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** To control growth, sprays of Bonzi® (1–2 ppm) are generally used. Growers can also spray Florel® (250–300 ppm) at 1–2 days after sticking unrooted cuttings to reduce premature flower bud development and help provide more uniform (but delayed) flowering during finishing. This is a good strategy for baskets or large patio pots where early flowering is not desired.

Impatiens New Guinea **SONIC®** *Impatiens hawkeri*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Not recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** To control growth, sprays of Bonzi® (1–2 ppm) are generally used. Growers can also spray Florel® (250–300 ppm) at 1–2 days after sticking unrooted cuttings to reduce premature flower bud development and help provide more uniform (but delayed) flowering during finishing. This is a good strategy for baskets or large patio pots where early flowering is not desired.

Impatiens New Guinea **SUPER SONIC®** *Impatiens hawkeri*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Not recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** To control growth, sprays of Bonzi® (1–2 ppm) are generally used. Growers can also spray Florel® (250–300 ppm) at 1–2 days after sticking unrooted cuttings to reduce premature flower bud development and help provide more uniform (but delayed) flowering during finishing. This is a good strategy for baskets or large patio pots where early flowering is not desired.

Ipomoea **SIDEKICK™** *Ipomoea batatas*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** The use of plant growth regulators (PGRs) is generally not needed in propagation. Stick unrooted cuttings immediately to prevent dehydration. Plants are chilling sensitive, so avoid storing cuttings <50 °F (10 °C).

Lantana **BANDANA®** *Lantana camara*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC, AutoStix®	Recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Not recommended	4.5–5 weeks	72–74 °F (22–23 °C)

**Comments:** To control growth after rooting, a spray of B-Nine® WSG (2,500 ppm) can be used. A tank-mix spray of Florel® (350 ppm) + B-Nine® WSG (2,500 ppm) can also be used to control growth and improve branching.

## VEGETATIVE PROPAGATION

### Lantana **BANDITO™** *Lantana camara*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC, AutoStix®	Recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Not recommended	4.5–5 weeks	72–74 °F (22–23 °C)

**Comments:** Bandito Lantana has low vigor and should need little plant growth regulator (PGR) during propagation. If growth control is needed after rooting, a spray of B-Nine® WSG (2,500 ppm) can be used. A tank-mix spray of Florel® (350 ppm) + B-Nine® WSG (2,500 ppm) can also be used to control growth and improve branching.

### Lantana **BANDOLERO™** *Lantana camara*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC, AutoStix®	Recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Not recommended	4.5–5 weeks	72–74 °F (22–23 °C)

**Comments:** To control growth after rooting, a tank-mix spray of B-Nine® WSG (2,500–3,500 ppm) + Cycocel® (1,000 ppm) can be used. A tank-mix spray of Florel® (350 ppm) + B-Nine® WSG (2,500–3,500 ppm) can also be used to control growth and improve branching.

### Lantana **BANDOLISTA™** *Lantana camara*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC, AutoStix®	Recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Not recommended	4.5–5 weeks	72–74 °F (22–23 °C)

**Comments:** To control growth after rooting, a tank-mix spray of B-Nine® WSG (2,500–3,500 ppm) + Cycocel® (1,000 ppm) can be used. A tank-mix spray of Florel® (350 ppm) + B-Nine® WSG (2,500–3,500 ppm) can also be used to control growth and improve branching.

### Lantana **HOT BLOODED®** *Lantana camara*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC, AutoStix®	Recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Not recommended	4.5–5 weeks	72–74 °F (22–23 °C)

**Comments:** To control growth after rooting, a tank-mix spray of B-Nine® WSG (2,500–3,500 ppm) + Cycocel® (1,000 ppm) can be used. A tank-mix spray of Florel® (350 ppm) + B-Nine® WSG (2,500–3,500 ppm) can also be used to control growth and improve branching.

### Lantana **LANDSCAPE BANDANA®** *Lantana camara*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC, AutoStix®	Recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Not recommended	4.5–5 weeks	72–74 °F (22–23 °C)

**Comments:** To control growth after rooting, a tank-mix spray of B-Nine® WSG (2,500–3,500 ppm) + Cycocel® (1,000 ppm) can be used. A tank-mix spray of Florel® (350 ppm) + B-Nine® WSG (2,500–3,500 ppm) can also be used to control growth and improve branching. Landscape Bandana Lantana varieties can be relatively vigorous and will typically need chemical growth control.

### Licorice Plant **HELICHRYSUM PETIOLARE** *Helichrysum petiolare*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Not recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** Helichrysum petiolare is a relatively compact, semi-trailing plant. It typically does not require any chemical growth regulation in propagation. Transplant on time to avoid stretched growth.

### Lobelia **TECHNO®** *Lobelia erinus*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** To control growth after rooting, sprays of B-Nine® WSG (1,500–2,500 ppm) is sufficient. It is also becoming popular for growers to combine Florel® (350 ppm) with the B-Nine® WSG (1,500 ppm) to increase growth control and to improve branching. These Florel® + B-Nine® WSG combo sprays should be applied to actively growing plants. Do not spray B-Nine® WSG or Florel® + B-Nine® WSG tank mixes on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

Lobelia **TECHNO® UPRIGHT** *Lobelia erinus*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** To control growth after rooting, sprays of B-Nine® WSG (1,500–2,500 ppm) is sufficient. It is also becoming popular for growers to combine Florel® (350 ppm) with the B-Nine® WSG (1,500 ppm) to increase growth control and to improve branching. These Florel® + B-Nine® WSG combo sprays should be applied to actively growing plants. Do not spray B-Nine® WSG or Florel® + B-Nine® WSG tank mixes on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

Lysimachia **GOLDII** *Lysimachia nummularia*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Recommended	4 weeks	70–74 °F (21–23 °C)

**Comments:** Goldii Lysimachia is a trailing plant that is typically pinched once in propagation to control growth. Transplant on time to avoid stretched growth and over-grown liners.

Osteospermum **TRADEWINDS®** *Osteospermum ecklonis*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC, AutoStix®	Recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Not recommended	4.5–5 weeks	70–74 °F (21–23 °C)

**Comments:** Do not reduce mist too soon during propagation. Continue light misting until all cuttings are rooted into the media. Reducing mist too early can result in slow and uneven rooting across the bench. To keep plants under control, a spray of B-Nine® WSG (2,500 ppm) or B-Nine® WSG (2,500 ppm) + Cycocel® (1,000 ppm) can be applied after cuttings are well-rooted and vegetative growth begins. It is also becoming popular for growers to combine Florel® (350 ppm) with the B-Nine® WSG (1,500–2,500 ppm) to increase growth control and to improve branching. These Florel® + B-Nine® WSG combo sprays should be applied to actively growing plants and done ideally before pinching. Do not spray B-Nine® WSG or Florel® + B-Nine® WSG tank mixes on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

Pentas **STARCLUSTER™** *Pentas lanceolata*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC	Recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Recommended	5 weeks	72–74 °F (22–23 °C)

**Comments:** Starcluster Pentas are slow rooters, so provide sufficient temperature during propagation. Sprays of B-Nine® WSG (2,500 ppm) are generally sufficient. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

Pentas **STARCLUSTER™ CASCADE** *Pentas lanceolata*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC	Recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Recommended	5 weeks	72–74 °F (22–23 °C)

**Comments:** Vegetative Pentas typically do not need plant growth regulator (PGR) applications during propagation. If growth control is needed, sprays of B-Nine® WSG (2,500 ppm) are generally sufficient. For all sprays listed above, the mist should be off for a minimum of one hour for the PGR to absorb into the leaf tissue.

Petunia **DEKKO™** *Petunia hybrida*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Not recommended	3–3.5 weeks	70–74 °F (21–23 °C)

**Comments:** Dekko Petunia have moderate vigor and are generally less vigorous than many full-trailing petunia types. To control growth after rooting, sprays of B-Nine® WSG (2,500 ppm) are usually sufficient. A tank-mix spray of Florel® (350 ppm) + B-Nine® WSG (2,500 ppm) can also be used to control growth and improve branching. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the PGR to absorb into the leaf tissue.

Petunia **FUN HOUSE™** *Petunia hybrida*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Not recommended	3–3.5 weeks	70–74 °F (21–23 °C)

**Comments:** Fun House Petunia has good vigor and generally will need chemical growth regulation in propagation. To control growth after rooting, sprays of B-Nine® WSG (2,500–3,500 ppm) are effective. A tank-mix spray of Florel® (350 ppm) + B-Nine® WSG (2,500 ppm) can also be used to control growth and improve branching. Do not spray Florel® on stressed or weak cuttings. For Fun House Potpourri Petunia applying B-Nine® WSG alone or in combo (1,250 ppm) with Florel® may impact the bicolor floral pattern to have a greater yellow expression at finish. For all sprays listed above, the mist should be off for a minimum of one hour for the PGR to absorb into the leaf tissue.

## VEGETATIVE PROPAGATION

### Petunia **ITSY™** *Petunia hybrida*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Not recommended	3–3.5 weeks	70–74 °F (21–23 °C)

**Comments:** Itsy Petunia has moderate vigor and generally is not as vigorous as many full-trailing petunia types. To control growth after rooting, sprays of B-Nine® WSG (2,500 ppm) are usually sufficient. A tank-mix spray of Florel® (350 ppm) + B-Nine® WSG (2,500 ppm) can also be used to control growth and improve branching. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

### Petunia **SANGUNA®** *Petunia hybrida*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Not recommended	3–3.5 weeks	70–74 °F (21–23 °C)

**Comments:** Sanguna® and Sanguna® Mega Petunias have good vigor and generally will need chemical growth regulation in propagation. To control growth after rooting, sprays of B-Nine® WSG (2,500-3,500 ppm) are usually sufficient. A tank-mix spray of Florel® (350 ppm) + B-Nine® WSG (2,500 ppm) can also be used to control growth and improve branching. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

### Petunia **SANGUNA®/SANGUNA® MEGA** *Petunia hybrida*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Not recommended	3–3.5 weeks	70–74 °F (21–23 °C)

**Comments:** Sanguna® and Sanguna® Mega Petunias have good vigor and generally will need chemical growth regulation in propagation. To control growth after rooting, sprays of B-Nine® WSG (2,500-3,500 ppm) are usually sufficient. A tank-mix spray of Florel® (350 ppm) + B-Nine® WSG (2,500 ppm) can also be used to control growth and improve branching. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

### Petunia **SANGUNA® PATIO** *Petunia hybrida*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Not recommended	3–3.5 weeks	70–74 °F (21–23 °C)

**Comments:** Sanguna Patio Petunia have compact-medium vigor and generally will need only moderate amounts of chemical growth regulation in propagation. To control growth after rooting, sprays of B-Nine® WSG (2,500 ppm) are usually sufficient. A tank-mix spray of Florel® (350 ppm) + B-Nine® WSG (2,500 ppm) can also be used to control growth and improve branching. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

### Petunia **SHORTCAKE™** *Petunia hybrida*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Not recommended	3–3.5 weeks	70–74 °F (21–23 °C)

**Comments:** Shortcake Petunia has moderate vigor and generally is not as vigorous as many full-trailing petunia types. To control growth after rooting, sprays of B-Nine® WSG (2,500–3,500 ppm) are usually sufficient. A tank-mix spray of Florel® (350 ppm) + B-Nine® WSG (2,500–3,500 ppm) can also be used to control growth and improve branching. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

### Salvia **VELOCITY™** *Salvia farinacea*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Recommended	3.5–4 weeks	70–74 °F (21–23 °C)

**Comments:** Velocity Salvia growth can be controlled in propagation using a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (1,500 ppm). For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

### Scaevola **BOMBAY®** *Scaevola aemula*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC, AutoStix®	Recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Recommended	4.5–5 weeks	72–74 °F (22–23 °C)

**Comments:** Bombay Scaevola is typically slow rooting during propagation, especially Bombay Blue. Do not reduce mist too soon and continue to provide misting until all cuttings are rooted. To control growth after rooting, sprays of B-Nine® WSG (1,500–2,500 ppm) are usually sufficient. A tank-mix spray of Florel® (350–500 ppm) + B-Nine® WSG (1,500 ppm) can also be used to control growth and improve branching. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

Swedish Ivy Variegated **PLECTRANTHUS** *Plectranthus coleoides*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Recommended	2–3 weeks	68–70 °F (20–21 °C)

**Comments:** B-Nine® WSG at 1,500–2,500 ppm can be used to control stem stretch.

Verbena **LANAI**® *Verbena hybrida*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Recommended	3–3.5 weeks	70–74 °F (21–23 °C)

**Comments:** Lanai Verbena has a range of vigor, with most varieties having medium to medium-vigorous growth habits. To control growth after rooting, sprays of B-Nine® WSG (2,500 ppm) are usually sufficient. A tank-mix spray of Florel® (350 ppm) + B-Nine® WSG (1,500–2,500 ppm) can also be used to control growth and improve branching. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

Verbena **LANAI**® **COMPACT** *Verbena hybrida*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Recommended	3–3.5 weeks	70–74 °F (21–23 °C)

**Comments:** Lanai Compact Verbena has compact-medium vigor and should require only moderate amounts of chemical growth retardants in propagation. To control growth after rooting, sprays of B-Nine® WSG (1,500–2,500 ppm) are usually sufficient. A tank-mix spray of Florel® (350 ppm) + B-Nine® WSG (1,500 ppm) can also be used to control growth and improve branching. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.–

Verbena **LANAI**® **UPRIGHT** *Verbena hybrida*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Recommended	3–3.5 weeks	70–74 °F (21–23 °C)

**Comments:** Lanai Upright Verbena has compact-medium to medium vigor and should require moderate amounts of chemical growth retardants in propagation. To control growth after rooting, sprays of B-Nine® WSG (1,500–2,500 ppm) are usually sufficient. A tank-mix spray of Florel® (350 ppm) + B-Nine® WSG (1,500–2,500 ppm) can also be used to control growth and improve branching. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

Verbena **MAGELANA**® *Verbena hybrida*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, AutoStix®	Not recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 2–3 days and after cuttings become fully hydrated.	Recommended	3–3.5 weeks	70–74 °F (21–23 °C)

**Comments:** Magelana Verbena has compact-medium vigor and should require only moderate amounts of chemical growth retardants in propagation. To control growth after rooting, sprays of B-Nine® WSG (1,500–2,500 ppm) are usually sufficient. A tank-mix spray of Florel® (350 ppm) + B-Nine® WSG (1,500 ppm) can also be used to control growth and improve branching. Do not spray Florel® on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the plant growth regulator (PGR) to absorb into the leaf tissue.

Vinca **NIRVANA**® **CASCADE** *Catharanthus roseus*

REC TRAY	PRODUCT FORM	ROOTING HORMONE	MIST TIME	PINCH	PROP TIME	BOTTOM HEAT
105-cell (30 mm) or larger	URC, CC, AutoStix®	Recommended	CapSil® (spray adjuvant) can be sprayed on the cuttings at a rate of 2–4 oz/100 gal within 1–2 days after sticking to help rehydrate the cuttings. Misting should be significantly reduced after 3–4 days and after cuttings become fully hydrated.	Not recommended	4.5–5 weeks	72–74 °F (22–23 °C)

**Comments:** Avoid excessively cold mist water during propagation, or distorted young foliage can occur. Keep young plants fertilized during propagation to prevent bottom leaf yellowing. To control growth after rooting, sprays of Cycocel® (750 ppm), B-Nine® WSG (2,500 ppm), or Cycocel® (750 ppm) + B-Nine® WSG (2,500 ppm) can be used depending on the growth rate and vigor of the plant. The Cycocel® + B-Nine® WSG combo spray will have a more growth regulating effect than either the Cycocel® or B-Nine® WSG spray alone.



Mantra™ Bright Red

# Vegetative Finishing

Itsy™ Magenta





Angelonia **CARITA™** *Angelonia angustifolia*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	76–78 °F (24–26 °C)	70–72 °F (21–22 °C)	200–250 ppm N	1 pinch	1 qt.   1 ppp   6–7 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1 ppp   9–10 weeks 3 qt.   2–3 ppp   9–10 weeks 1.5 gal. pot   4 ppp   10–11 weeks

**Tech Tips:** Provide warm temperatures early on in finishing to allow plants to establish after transplant. Cold temperatures lead to bottom leaf yellowing, slow growth, basal stem and root rots. Avoid over-watering the young transplants, especially in large patios and baskets. Apply a preventative fungicide drench if needed to prevent fungal root diseases. Scout and treat for thrips.

Angelonia **CARITA™ CASCADE** *Angelonia angustifolia*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	76–78 °F (24–26 °C)	70–72 °F (21–22 °C)	200–250 ppm N	1 pinch	1 qt.   1 ppp   6–7 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1 ppp   9–10 weeks 3 qt.   2–3 ppp   9–10 weeks 1.5 gal. HB   4 ppp   10–11 weeks 1.5 gal. pot   4 ppp   10–11 weeks 2 gal. HB   5 ppp   10–11 weeks

**Tech Tips:** Provide warm temperatures early on in finishing to allow plants to establish after transplant. Cold temperatures lead to bottom leaf yellowing, slow growth, basal stem and root rots. Avoid over-watering the young transplants, especially in large patios and baskets. Apply a preventative fungicide drench if needed to prevent fungal root diseases. Scout and treat for thrips.

Argyranthemum **SASSY®** *Argyranthemum frutescens*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	70–72 °F (21–22 °C)	62–64 °F (17–18 °C)	200–250 ppm N	1 pinch	1 qt.   1 ppp   6–7 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1 ppp   9–10 weeks 3 qt.   2–3 ppp   9–10 weeks

**Tech Tips:** Growing under relatively cool temperatures and high light levels will produce high-quality Argyranthemum. If grown cool, little chemical growth regulators are needed during production. Scout and treat for Thrips, which can cause streaking and browning of the flower petals.

Bacopa **CALYPSO™** *Sutera cordata*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	70–72 °F (21–22 °C)	62–64 °F (17–18 °C)	125–175 ppm N	1–2 pinches	1 qt.   1 ppp   6–7 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1 ppp   9–10 weeks 3 qt.   2–3 ppp   9–10 weeks 1.5 gal. HB   4 ppp   10–11 weeks 2 gal. HB   5 ppp   10–11 weeks

**Tech Tips:** Calypso Bacopa should be pinched during propagation, which results in a well-branched, mounded plug. Avoid keeping plants too wet and cold early on after transplant, which can result in root rot and tip chlorosis (iron deficiency), especially in large baskets and containers. High DLIs and cool finishing temperatures produce high-quality bacopa. Plants can be pinched twice for baskets and large containers, which results in full, uniform plants. Monitor media pH and EC closely and avoid high EC levels to prevent damage roots. Do not let plants get extremely dry which results in necrotic foliage and root loss. Calypso Bacopa has moderate vigor and will generally need a plant growth regulator (PGR) treatment in propagation. To control growth after rooting, a spray of B-Nine® WSG (1,500 ppm) is sufficient. It is also becoming popular for growers to combine Florel® (200 ppm) with the B-Nine® WSG (1,500 ppm) to increase growth control and to improve branching. These Florel® + B-Nine® WSG combo sprays should be applied to actively growing plants. Do not spray B-Nine® WSG or Florel® + B-Nine® WSG tank mixes on stressed or weak cuttings. For all sprays listed above, the mist should be off for a minimum of one hour for the PGR to absorb into the leaf tissue.

Begonia **FLORENCIO™** *Begonia hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	6,000–8,000 foot candles (1,200–1,600 micro mols)	Facultative short day	72–74 °F (22–23 °C)	72–74 °F (22–23 °C)	200–250 ppm N	1 pinch	1 qt.   1 ppp   6–9 weeks 1.25 qt.   2–3 ppp   9–12 weeks 2.5 qt.   2–3 ppp   9–12 weeks 3 qt.   2–3 ppp   10–12 weeks 1.5 gal. HB   4–5 ppp   10–14 weeks 1.5 gal. pot   3–4 ppp   10–14 weeks 2 gal. HB   4–5 ppp   12–14 weeks

**Tech Tips:** Day extension lighting to 14 hours is recommended for the first weeks of finished production to bulk plant size. Lighting should be discontinued at least four weeks prior to shipping flowering plants.

Begonia **GRACE™** *Begonia hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	6,000–8,000 foot candles (1,200–1,600 micro mols)	Facultative long day	72–74 °F (22–23 °C)	72–74 °F (22–23 °C)	200–250 ppm N	1 pinch	1 qt.   1 ppp   7–8 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1 ppp   8–9 weeks 3 qt.   1 ppp   8–9 weeks 1.5 gal. HB   3 ppp   10–11 weeks 1.5 gal. pot   3 ppp   10–11 weeks 2 gal. HB   3 ppp   12–13 weeks

**Tech Tips:** Day extension lighting to 14 hours is recommended for the first weeks of finished production to bulk plant size. Lighting should be discontinued at least four weeks prior to shipping flowering plants.

	PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
	Thrips, Whiteflies	Root rot, Botrytis	B-Nine® WSG (2,500 ppm) or a tank-mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm). Do not spray Florel® on Angelonia since this can burn foliage and cause significant flower delay.	Carita™ Purple 70003174 Carita™ Raspberry 70003177 Carita™ White 70003175	C-M C C-M	E E E

	PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
	Thrips, Whiteflies	Root rot, Botrytis	B-Nine® WSG (2,500 ppm) or a tank-mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm). Do not spray Florel® on Angelonia since this can burn foliage and cause significant flower delay.	Carita™ Cascade Deep Purple 70003172 Carita™ Cascade Raspberry 70018119 Carita™ Cascade White 70003173	M C-M M	M M M

	PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
	Thrips, Aphids, Whiteflies, Leafminers	Botrytis	Bonzi® (5–10 ppm), Sumagic® (4–5 ppm), and Cycocel® (1,000 ppm) + B-Nine® (2,500 ppm) tank-mix work to control growth. It is also becoming popular for growers to combine Florel® at 350–500 ppm with B-Nine® WSG (2,500 ppm) early on in production to control growth and improve branching. These Florel® + B-Nine® WSG combo sprays should be applied to actively growing plants.	Sassy® Double Deep Rose 70036131 Sassy® Double Yellow 70051319 Sassy® Red 70006552 Sassy® Rose 70003326 Sassy® White 70066240	M-V C-M M M M	E E-M M-L E E

	PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
	Thrips, Aphids, Whiteflies	Botrytis, Fungal root rot	B-Nine® WSG (1,500–2,500 ppm). A tank-mix spray of Florel® (200 ppm) + B-Nine® WSG (1,500 ppm) can also be used to control growth and improve branching early in production. Bonzi® drench (1 ppm) can be given 3–4 weeks before finishing.	Calypso™ Jumbo Deep Lavender 70060753 Calypso™ Jumbo Lilac 70071572 Calypso™ Jumbo Pink 70060755 Calypso™ Jumbo Rose 70071583 Calypso™ Jumbo White 70060751	C-M M C-M M C-M	E E E E E

	PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
	Thrips, Broad mites	Botrytis, Tospovirus, Xanthomonas	Cycocel® at 500–1,000 ppm.	Florencio™ Cerise 70105044 Florencio™ Orange 70091480 Florencio™ Pink 70091479 Florencio™ Red 70091476 Florencio™ White 70091478 Florencio™ Yellow 70091477	M M M M M M	M M M M M M

	PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
	Thrips, Broad mites	Botrytis, Tospovirus, Xanthomonas	Cycocel® at 500–1,000 ppm.	Grace™ Dark Red 70086288 Grace™ Orange 70086283 Grace™ Pink 70086285	M-V M-V M-V	M M M

## VEGETATIVE FINISHING

### Bidens **BRAZEN™** *Bidens ferulifolia*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	70–72 °F (21–22 °C)	62–64 °F (17–18 °C)	125–175 ppm N	1 pinch	1 pt.   1 ppp   5–7 weeks 1 qt.   1 ppp   6–7 weeks 1.25 qt.   1 ppp   8–10 weeks 2.5 qt.   1 ppp   8–10 weeks 3 qt.   2–4 ppp   9–10 weeks 1.5 gal. HB   3–4 ppp   10–11 weeks 1.5 gal. pot   4–5 ppp   10–11 weeks 2 gal. HB   4–5 ppp   10–11 weeks

**Tech Tips:** Brazen Bidens cuttings root quickly and should be transplanted on time. Plants have adequate vigor and flower relatively quickly allowing the plants to fill in containers quickly. Brazen Bidens forms a well-branched, upright to mounding plant with just one pinch.

### Bidens **MEXICAN GOLD™** *Bidens ferulifolia*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	70–72 °F (21–22 °C)	62–64 °F (17–18 °C)	125–175 ppm N	1 pinch	1 pt.   1 ppp   6 weeks 1 qt.   1 ppp   6–7 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1 ppp   9–10 weeks 3 qt.   3 ppp   9–10 weeks 1.5 gal. HB   3–4 ppp   10–11 weeks 1.5 gal. pot   4–5 ppp   10–11 weeks 2 gal. HB   4–5 ppp   10–11 weeks

**Tech Tips:** Mexican Gold Bidens cuttings root quickly and should be transplanted on time. Plants are moderately vigorous and early flowering, and will fill out containers quickly.

### Calibrachoa **CABRIO™** *Calibrachoa hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	70–72 °F (21–22 °C)	62–64 °F (17–18 °C)	200–250 ppm N	1 pinch	1 qt.   1 ppp   6–7 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1 ppp   9–10 weeks 3 qt.   2–3 ppp   9–10 weeks 1.5 gal. HB   4 ppp   10–11 weeks 1.5 gal. pot   5 ppp   10–11 weeks 2 gal. HB   5 ppp   10–11 weeks

**Tech Tips:** Keep the pH down in the mid 5.0's to avoid tip yellowing—drench with iron chelate if necessary. Avoid overwatering of young plants. Plants can be pinched twice on baskets and larger containers (once in prop, once after transplant). An early Florel® or Florel® + B-Nine® WSG spray improves branching. Mid-season Bonzi® drenches are the key to beautiful mounded baskets. Watch for Aphids. High DLIs and moderate-to-cool finishing temperatures produce high-quality calibrachoa. Cabrio Calibrachoa is bred and selected to flower under day lengths of 10.5 hours. Use proper sanitation when pinching or shearing calibrachoa to prevent possible virus spread.

### Calibrachoa **CALLIE®** *Calibrachoa hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.5–5.9 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	70–72 °F (21–22 °C)	62–64 °F (17–18 °C)	200–250 ppm N	1 pinch	1 qt.   1 ppp   6–7 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1 ppp   9–10 weeks 3 qt.   2–3 ppp   9–10 weeks 1.5 gal. HB   4 ppp   10–11 weeks 2 gal. HB   5 ppp   10–11 weeks

**Tech Tips:** Keep the pH down in the mid 5.0s to avoid tip yellowing—drench with iron chelate if necessary. Avoid overwatering of young plants. Plants can be pinched twice on baskets and larger containers (once in prop, once after transplant). An early Florel® or Florel® + B-Nine® WSG spray improves branching. Mid-season Bonzi® drenches are the key to beautiful mounded baskets. Watch for aphids. High DLIs and moderate-to-cool finishing temperatures produce high-quality plants. Use proper sanitation when pinching or shearing Calibrachoa to prevent possible virus spread.

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Whiteflies	Botrytis	B-Nine® WSG (2,500 ppm) can be used to control growth. A tank-mix spray of Florel® (350 ppm) + B-Nine® WSG (1,500 ppm) can also be used to control growth and improve branching early in production, especially if not given this treatment in propagation. A Bonzi® drench (0.5–1 ppm) can be given 3–4 weeks before finishing and results in toned, high quality plants.	Brazen™ Eternal Flame 70091929 Brazen™ Happy Sun 70091937 Brazen™ Imperial Luck 70091930 Brazen™ Red Flare 70091936 Brazen™ Rising Sun 70091925 Brazen™ Samurai 70091932	V M C M-V M M	E M M M M M

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Whiteflies	Botrytis	B-Nine® WSG (2,500 ppm) can be used to control growth. A tank-mix spray of Florel® (350 ppm) + B-Nine® WSG (1,500 ppm) can also be used to control growth and improve branching early in production, especially if not given this treatment in propagation. A Bonzi® drench (0.5–1 ppm) can be given 3–4 weeks before finishing and results in toned, high quality plants.	Mexican Gold™ 70018300 Mexican Gold™ Jumbo 70003253	M-V V	E E

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING	MPR
Aphids, Thrips, Budworms	Botrytis, Powdery mildew, Viruses (TMV, TSWV)	To keep plants under control, sprays of either B-Nine® WSG (2,500 ppm) or Sumagic® (10–15 ppm) can be applied to the plants as needed. A spray of Florel® (350–500 ppm) or Florel® (350–500 ppm) + B-Nine® WSG (1,500–2,500 ppm) can also be done early on to control growth and improve branching. For the best looking plants, a Bonzi® drench (1–2 ppm) should be applied to the media about 4 weeks before full finish and sale. Be consistent in Bonzi® drench volumes since higher drench volumes can result in more growth retarding effect.	Cabrio™ Amethyst 70074743 Cabrio™ Burgundy 70075993 Cabrio™ Eclipse Light Rose 70074748 Cabrio™ Eclipse Lilac 70074753 Cabrio™ Eclipse Strawberry 70074722 Cabrio™ Grape 70074736 Cabrio™ Pink with Eye 70074739 Cabrio™ Sweet Peach 70073041 Cabrio™ Yellow 70074727	C-M C-M C-M C-M M C-M M C C-M	M M-L M-L M M M M-L E-M	10.5 hrs. 10.5 hrs. 10.5 hrs. 10.5 hrs. 10.5 hrs. 10.5 hrs. 10.5 hrs. 10.5 hrs. 10.5 hrs.

\*MPR is Minimum Photoperiod Recommendation.

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING	MPR
Aphids, Thrips, Budworms	Botrytis, Powdery mildew, Viruses (TMV, TSWV)	B-Nine® WSG (2,500–3,500 ppm) or Sumagic® (10–20 ppm) can be applied to the plants as needed. Florel® (350–500 ppm) or Florel® (350–500 ppm) + B-Nine® WSG (2,500 ppm) can also be done early on to control growth and improve branching. Bonzi® drench (2–3 ppm) should be applied to the media about 4 weeks before full finish and sale.	Callie® Apricot 70035958 Callie® Blue 70075991 Callie® Burgundy 70035959 Callie® Coral 70073020 Callie® Dark Red 70068741 Callie® Eclipse Lavender 70075987 Callie® Eclipse Lilac 70074754 Callie® Eclipse Strawberry 70073034 Callie® Hot Pink 70087437 Callie® Hot Pink Spark 70075995 Callie® Lavender 70087450 Callie® Light Blue 70008012 Callie® Mango 70003301 Callie® Orange 70003288 Callie® Pink with Eye 70073038 Callie® Purple 70080987 Callie® Rose 70007858 Callie® Rose Dark Center 70080981 Callie® Star Orange 70073033 Callie® Strawberry 70073025 Callie® White 70052153 Callie® Yellow 70035954	M M-V M M C-M C-M M-V M-V M M C-M C-M M C-M C-M M-V C-M C-M M-V C-M M-V	E-M E-M M M E M M M M E M M M E-M E-M E-M M E E-M E-M M M	10.5 hrs. 10.5 hrs.

\*MPR is Minimum Photoperiod Recommendation.

Calocephalus **WHIMSY™** *Calocephalus brownii*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	70–72 °F (21–22 °C)	62–64 °F (17–18 °C)	125–175 ppm N	1 pinch	1 pt.   1 ppp   4–6 weeks 1 qt.   1 ppp   4–6 weeks 1.25 qt.   1 ppp   4–6 weeks

**Tech Tips:** Whimsy Calocephalus is a compact plant that has low water and fertilizer requirements. Use plastic tenting or Reemay® fabric during propagation if needed to keep high humidity, and to minimize excess water on the foliage. Provide moderate to warm temperatures early on after transplant to get the plants established. Avoid over-saturated media and overly cool temperatures. Whimsy Calocephalus may form bright yellow flowers on very mature plants, but its main value is its unique silver foliage.

Curry Plant **HELICHRYSUM ITALICUM** *Helichrysum italicum*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	70–72 °F (21–22 °C)	62–64 °F (17–18 °C)	125–175 ppm N	1 pinch	1 qt.   1 ppp   5–6 weeks 1.25 qt.   1–2 ppp   7–9 weeks 2.5 qt.   1–2 ppp   7–9 weeks 3 qt.   2–4 ppp   8–9 weeks 1.5 gal. pot   2–4 ppp   8–9 weeks

**Tech Tips:** Helichrysum italicum (Curry Plant) is a mounding plant that has low water and fertilizer requirements. Provide moderate to warm temperatures early on after transplant to get the plants established. Avoid over-saturated media and overly cool temperatures. Helichrysum italicum may form golden yellow flowers on very mature plants, but its main value is its unique silver-colored foliage. Trimming plants is the best way to control growth.

Dahlia **CUT FLOWER COLLECTION, KARMA** *Dahlia hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
N/A	8,000–10,000 foot candles (1,600–2,000 micro mols)	Facultative short day	70–72 °F (21–22 °C)	66–68 °F (19–20 °C)	200–250 ppm N	1 pinch	Transplant into field or raised beds.

**Tech Tips:** Café Au Lait will start to produce semi-double and single flower forms as the day lengths get shorter and cooler into the fall season. Café Au Lait will also be more prone to produce semi-double or single flowers when under various forms of stress from heat or suboptimal irrigation and nutrition during establishment. Nutrition should be maintained through vegetative bulking and flowering in order to support production of fully double flowers longer. If plants are a light green or yellow tone they should be fertilized until tone improves to a healthy, green tone.

Dahlia **DAHLEGRIA®** *Dahlia hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative short day	72–74 °F (22–23 °C)	66–68 °F (19–20 °C)	200–250 ppm N	1 pinch	1 pt.   1 ppp   7–8 weeks 1 qt.   1 ppp   7–8 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   2 ppp   9–10 weeks 3 qt.   2 ppp   9–10 weeks 1.5 gal. pot   3 ppp   10–11 weeks

**Tech Tips:** Long-day lighting (day length extension or night interruption) is needed during propagation to avoid premature flowering and tuber formation. Ideal photoperiod during finishing to provide the correct balance between vegetative growth and flower formation is between 13–14 hours. Growing under very short natural days (< 12 hours) will result in short plants, fast flowering, and root tubers. Provide warm temperatures early on in finishing to allow plants to establish after transplant. Plant the rooting cutting relatively deep to provide good support and balance in the pot for the maturing plants. Scout and treat for a range of insects and diseases, including Spider mites, Thrips, and Powdery mildew.

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
No major pests	Botrytis, Fungal root rot	Does not require any chemical growth regulation. If plants get too large for their container, then it is best to trim the plants back to control growth.	Whimsy™ Silver 70060862	C	N/A

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Fungus gnats, Whiteflies	Botrytis, fungal root rot	Does not require any chemical growth regulation. If plants get too large for their container, then it is best to trim the plants back to control growth.	Icicles 70003687	M	N/A

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Aphids, Spider mites, Thrips, Leafminers	Botrytis, Powdery mildew, Basal stem rot	Not applicable.	Café Au Lait 70089173 Karma Amanda Violet White Bicolor 70089127 Karma Amora Bright Scarlet 70082934 Karma Blue Lagoon 70089158 Karma Cabernet 70082935 Karma Corona Pink 70099379 Karma Corona Purple 70089143 Karma Corona Red 70089130 Karma Corona Yellow Bronze Bicolor 70089128 Karma Irene Red Orange 70089141 Karma Naomi Mahogany-Red 70089129 Karma Sangria Pink Yellow Bicolor 70089140 Moon Lady 70089172	V	L

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Aphids, Spider mites, Thrips, Leafminers	Botrytis, Powdery mildew, Basal stem rot	B-Nine® WSG (2,500-3,500 ppm) are usually sufficient to control growth. A Bonzi® drench (3–4 ppm) can also be used to control growth or to hold plants for sale.	Dahlegria® Apricot Tricolor 70082922 Dahlegria® Light Rose 70089164 Dahlegria® Magenta Bicolor 70089162 Dahlegria® Orange 70082927 Dahlegria® Orange Bicolor 70082923 Dahlegria® Pink Flame 70082925 Dahlegria® Red 70089151 Dahlegria® Sunrise 70089160 Dahlegria® Sunset 70089152 Dahlegria® White 70082924	V	E-M

# VEGETATIVE FINISHING

## Dahlia **GRANDALIA™** *Dahlia hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative short day	70–72 °F (21–22 °C)	66–68 °F (19–20 °C)	200–250 ppm N	1 pinch	1 qt.   1 ppp   6–7 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1 ppp   9–10 weeks 3 qt.   2–3 ppp   9–10 weeks 1.5 gal. HB   3 ppp   10–11 weeks 2 gal. HB   4 ppp   10–11 weeks

**Tech Tips:** Long-day lighting (day length extension or night interruption) is needed during propagation to avoid premature flowering and tuber formation. Ideal photoperiod during finishing to provide the correct balance between vegetative growth and flower formation is between 13–14 hours. Growing under very short natural days (12 hours) will result in short plants, fast flowering, and root tubers. Provide warm temperatures early on in finishing to allow plants to establish after transplant. Plant the rooting cutting relatively deep to provide good support and balance in the pot for the maturing plants. Scout and treat for a range of insects and diseases, including spider mites, thrips, and powdery mildew.

## Dahlia **HAPPY DAYS™** *Dahlia hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative short day	70–72 °F (21–22 °C)	66–68 °F (19–20 °C)	200–250 ppm N	1 pinch	1 qt.   1 ppp   7–8 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1 ppp   9–10 weeks 3 qt.   2–3 ppp   9–10 weeks 1.5 gal. pot   3 ppp   10–11 weeks

**Tech Tips:** Long-day lighting (day length extension or night interruption) is needed during propagation to avoid premature flowering and tuber formation. Ideal photoperiod during finishing to provide the correct balance between vegetative growth and flower formation is between 13–14 hours. Growing under very short natural days (< 12 hours) will result in short plants, fast flowering, and root tubers. Provide warm temperatures early on in finishing to allow plants to establish after transplant. Plant the rooting cutting relatively deep to provide good support and balance in the pot for the maturing plants. Scout and treat for a range of insects and diseases, including Spider mites, Thrips, and Powdery mildew.

## Dahlia **SINCERITY** *Dahlia hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative short day	66–68 °F (18–19 °C)	64–66 °F (18–19 °C)	200–250 ppm N	Not recommended	2.5 qt.   1 ppp   9–10 weeks 3 qt.   2 ppp   9–10 weeks 1.5 gal. pot   3 ppp   9–10 weeks

**Tech Tips:** Long-day lighting (day length extension or night interruption) is needed during propagation to avoid premature flowering and tuber formation. The ideal photoperiod during finishing to provide the correct balance between vegetative growth and flower formation is between 13–14 hours. Growing under very short natural days (< 12 hours) will result in short plants, fast flowering, and root tubers. Provide warm temperatures early on in finishing to allow plants to establish after transplant. Sincerity Dahlia grows best under moderately warm temperatures. Avoid extreme heat stress, especially under relatively high light intensities. Plant the rooting cutting relatively deep to provide good support and balance in the pot for the maturing plants. Scout and treat for a range of insects and diseases, including Spider mites, Thrips, and Powdery mildew.

## Diascia **DARLA®** *Diascia barberae*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	70–72 °F (21–22 °C)	62–64 °F (17–18 °C)	200–250 ppm N	1 pinch	1 pt.   1 ppp   6 weeks 1 qt.   1 ppp   6–7 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1 ppp   9–10 weeks 3 qt.   2–3 ppp   9–10 weeks 1.5 gal. HB   4 ppp   10–11 weeks 2 gal. HB   5 ppp   10–11 weeks

**Tech Tips:** Avoid dehydration of the cuttings before sticking in propagation. Darla Diascia is best when grown cool with high light. No plant growth regulator (PGR) is typically 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 if sprayed too late in the crop cycle. Watch for Botrytis in the crown of plants when overhead watering.

## Dipladenia **MADINIA®** *Mandevilla hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	76–78 °F (24–26 °C)	70–72 °F (21–22 °C)	200–250 ppm N	1 pinch	1 qt.   1 ppp   8–9 weeks 1.25 qt.   1 ppp   10–11 weeks 2.5 qt.   2 ppp   12–13 weeks 3 qt.   3 ppp   12–13 weeks 1.5 gal. HB   4 ppp   12–13 weeks 2 gal. HB   5 ppp   12–13 weeks

**Tech Tips:** Madinia Dipladenia has a controlled growth habit and bred for improved branching. They make very nice quart products. An early pinch (either in propagation or shortly after transplant) will encourage branching. High light and warm temperatures will improve quality and help reduce crop times. Higher light intensities and longer photoperiods help reduce the natural vining of the plants.

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Aphids, Spider mites, Thrips, Leafminers	Botrytis, Powdery mildew, Basal stem rot	B-Nine® WSG (2,500–3,500 ppm) are usually sufficient to control growth. A Bonzi® drench (3–4 ppm) can also be applied to control growth or to hold plants for sale.	Grandalia™ Dark Red 70052845 Grandalia™ Dark Rose 70076370 Grandalia™ Fire 70069965 Grandalia™ Lavender Ice 70076379 Grandalia™ Magenta 70076371 Grandalia™ Orange 70019193 Grandalia™ Pink Ice 70069967 Grandalia™ Sunrise 70035980 Grandalia™ White 70076384 Grandalia™ Yellow 70019190	C-M M-V M M-V M-V M M-V M M-V M	M M M L M M M E-M M M

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Aphids, Spider mites, Thrips, Leafminers	Botrytis, Powdery mildew, Basal stem rot	B-Nine® WSG (2,500–3,500 ppm) are usually sufficient to control growth. A Bonzi® drench (2–4 ppm) can also be used to control growth or to hold plants for sale.	Happy Days™ Cherry Red 70053908 Happy Days™ Fuchsia Halo 70089149 Happy Days™ Neon 70082942 Happy Days™ Orange Red Bicolor 70053909 Happy Days™ Pink 70037236 Happy Days™ Purple 70089150 Happy Days™ White 70037235 Happy Days™ Yellow 70082954	M M M M M M M M	M E-M E-M M M E-M E-M M

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Aphids, Spider mites, Thrips, Leafminers	Botrytis, Powdery mildew, Basal stem rot	Sprays of B-Nine® WSG (2,500 ppm) are recommended at 4 weeks and 6 weeks after transplant to help control growth. Sprays of Florel® (250 ppm) at 4 weeks and 5.5–6 weeks after transplant will also help to control growth and can be used instead of the B-Nine® WSG sprays. The Florel® sprays will also help prevent late-season flower peduncle stretch. A Bonzi® drench at 2–4 ppm can be used to hold plants for sale.	Sincerity 70082930	V	L

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Aphids, Whiteflies	Botrytis, Fungal root rot	B-Nine® WSG (2,500 ppm), Bonzi® (5 ppm), or Sumagic® (3 ppm) can be applied to control growth.	Darla® Deep Salmon 70006747 Darla® Light Pink 70003545 Darla® Red 70066232 Darla® Rose 70003547 Darla® White 70071557	M M M M M	E E E E-M E

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Aphids, Whiteflies, Thrips, Mealybugs, Spider mites	Cercospora and Corynespora fungal leaf spot, Fungal root, Basal stem rot	B-Nine® WSG (3,500–5,000 ppm) can be used. Sprays of Configure® (300 ppm) or Atrimmec® (200–400) early on can be used to improve branching. Bonzi® drenches (0.5–2 ppm) can also be done to control growth and reduce leaf size, especially under very hot growing conditions. Madinia White Dipladenia is the most vigorous variety in the series and generally will need some plant growth regulator (PGR) applied to control growth.	Madinia® Coral Pink 70050968 Madinia® Deep Red 70003886 Madinia® Elegant Velvet Red 70051012 Madinia® Pink 70003888 Madinia® White 70003889	M-V M M-V M-V V	E-M M-L M M-L M-L

Dipladenia **MADINIA® MAXIMO** *Mandevilla hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	76–78 °F (24–26 °C)	70–72 °F (21–22 °C)	200–250 ppm N	1 pinch	1 qt.   1 ppp   8–9 weeks 1.25 qt.   1 ppp   10–11 weeks 2.5 qt.   2 ppp   12–13 weeks 3 qt.   3 ppp   12–13 weeks

**Tech Tips:** Madinia Maximo Dipladenia has a controlled growth habit and bred for improved branching. They make very nice quart products. An early pinch (either in propagation or shortly after transplant) will encourage branching. High light and warm temperatures will improve quality and help reduce crop times.

Dorotheanthus **MEZOO™** *Dorotheanthus bellidiformis*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	76–78 °F (24–26 °C)	70–72 °F (21–22 °C)	200–250 ppm N	1 pinch	1 qt.   1 ppp   6–7 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1–2 ppp   9–10 weeks 3 qt.   3 ppp   9–10 weeks 1.5 gal. HB   4 ppp   10–11 weeks 2 gal. HB   5 ppp   10–11 weeks

**Tech Tips:** Mezoo Dorotheanthus is a trailing succulent-type vine that makes beautiful baskets and combo plantings. It is a relatively slow starter and is best grown warm to get it established and growing. Under high light, it will develop small colorful red flowers that add character to the plant. This is a very tough plant that grows and performs under a range of environmental conditions.

Euphorbia **EUPHORIC™** *Euphorbia hypericifolia*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	76–78 °F (24–26 °C)	70–72 °F (21–22 °C)	200–250 ppm N	1 pinch	1 qt.   1 ppp   6–7 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1 ppp   9–10 weeks 3 qt.   2–3 ppp   9–10 weeks 1.5 gal. HB   4 ppp   10–11 weeks 2 gal. HB   5 ppp   10–11 weeks

**Tech Tips:** Stick unrooted cuttings immediately to reduce bottom leaf yellowing and drop that can occur if cuttings are held for too long. Euphorbia is very sensitive to ethylene damage during shipping. Euphorbia is a slow starter both in propagation and finish, but grows quickly when established and growing under warm temperatures. High light and warm temperatures will improve plant quality and reduce root diseases. If grown too cold and wet, fungal root can develop. Plants can be trimmed to shape at any point during production. Bonzi® drenches work well to control growth mid to late in the production cycle.

Geranium Interspecific **CALDERA™** *Pelargonium interspecific*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.5–5.9 SME 2.3–2.8 mS/cm, PourThru EC: 3.5–4.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	72–74 °F (22–23 °C)	68–70 °F (20–21 °C)	200–250 ppm N	Not recommended	2.5 qt.   1 ppp   10–12 weeks 3 qt.   2–3 ppp   11–13 weeks 1.5 gal. HB   3–4 ppp   12–12 weeks 1.5 gal. pot   2–3 ppp   11–13 weeks 2 gal. HB   4–5 ppp   12–13 weeks

**Tech Tips:** Caldera Interspecific Geranium is vigorous and requires regular plant growth regulator (PGR) applications, especially under warm growing conditions. Provide relatively high light levels and warm temperatures early on to establish the crop. Early Florel® sprays are key in making well-branched, quality plants. Watch for Botrytis under tight spacing and in combination plantings, especially when overhead irrigating. Monitor the media and try to keep the pH between 5.5–5.9 to avoid iron deficiency (tip chlorosis).

Geranium Interspecific **CALIENTE®** *Pelargonium interspecific*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 2.3–2.8 mS/cm, PourThru EC: 3.5–4.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	72–74 °F (22–23 °C)	68–70 °F (20–21 °C)	200–250 ppm N	Not recommended	1 qt.   1 ppp   7–8 weeks 1.25 qt.   1 ppp   9–10 weeks 2.5 qt.   1 ppp   11–12 weeks 3 qt.   3 ppp   11–12 weeks 1.5 gal. HB   3–4 ppp   11–12 weeks 1.5 gal. pot   2 ppp   11–12 weeks 2 gal. HB   4–5 ppp   11–12 weeks

**Tech Tips:** Caliente geraniums are moderately vigorous and usually require regular PGR applications, especially under warm growing conditions. Know the varieties since some are more vigorous than others. Provide relatively high light levels and warm temperatures early on to establish the plant and to allow it to respond adequately to PGRs. Early Florel® sprays are key to making well-branched, quality plants. Watch for Botrytis under tight spacing and in combination plantings, especially when overhead irrigating. Monitor the media and try to keep the pH around 6.0. Too high of a pH can lead to iron chlorosis and leaf tip yellowing.

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Aphids, Whiteflies, Thrips, Mealybugs, Spider mites	Cercospora and Corynespora fungal leaf spot, Fungal root, Basal stem rot	B-Nine® WSG (3,500-5,000 ppm) can be used. Sprays of Configure® (300 ppm) or Atrimmec® (200–400 ppm) early on can be used to improve branching. Bonzi® drenches (0.5-2 ppm) can also be done to control growth and reduce leaf size, especially under very hot growing conditions.	Madinia® Maximo Light Pink 70051011 Madinia® Maximo Red 70051010 Madinia® Maximo Scarlet 70054748	V V V	E-M E-M M

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
No significant issues	Phoma and Phomopsis in propagation	The use of plant growth regulators is generally not needed in propagation. Control growth by pinching if needed.	Mezoo™ Trailing Red 70003864	M-V	L

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Aphids, Whiteflies	Botrytis, Fungal root rot	B-Nine® WSG (2,500 ppm) can be used. Drenches of Bonzi® (1–2 ppm) or Sumagic® (0.5–1 ppm) also work well to control growth or to hold plants before sale. Plant size can also be controlled by pinching.	Euphoric™ Double White 70087275 Euphoric™ White 70087276	C-M M	E E

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Aphids, Thrips, Spider mites	Botrytis, Pythium root rot, Rust, Xanthomonas bacterial blight and wilt	Sprays of Cycocel® (1,000 ppm) and under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm) or Bonzi® spray (3–5 ppm). Florel® can also be sprayed at 350-400 ppm early in the crop cycle, especially for larger pots and baskets, to improve branching and control growth. A Bonzi® drench (0.1–0.25 ppm) can be used at the end of production.	Caldera™ Lavender Glow 70095380 Caldera™ Pink 70065942 Caldera™ Red 70065936 Caldera™ Salmon 70065939	V V V V	M-L L L L

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Aphids, Thrips	Botrytis, Pythium root rot, Xanthomonas bacterial blight and wilt	Sprays of Cycocel® (1,000 ppm) under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm), or Bonzi® spray (3–5 ppm). Florel® can also be sprayed at 350–400 ppm early in the crop cycle, especially for larger pots and baskets, to improve branching and control growth. A Bonzi® drench (0.1 ppm) can be used at the end of production to hold and tone plants before sale.	Caliente® Coral Salmon 70028724 Caliente® Deep Red 70004105 Caliente® Fire 70070069 Caliente® Hot Coral 70008715 Caliente® Lavender 70051129 Caliente® Orange 70008714 Caliente® Pink 70008713 Caliente® Rose 70004106 Caliente® White 70059611	M M M-V M-V M M M-V V M-V	M M M-L L M E-M M-L M M-L

Geranium Interspecific **CALLIOPE® CASCADE** *Pelargonium interspecific*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 2.3–2.8 mS/cm, PourThru EC: 3.5–4.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	72–74 °F (22–23 °C)	68–70 °F (20–21 °C)	200–250 ppm N	Not recommended	1.25 qt. I 1 ppp I 10–11 weeks 2.5 qt. I 1 ppp I 10–11 weeks 3 qt. I 2–3 ppp I 11–12 weeks 1.5 gal. HB I 3 ppp I 11–12 weeks 2 gal. HB I 4 ppp I 11–12 weeks

**Tech Tips:** Calliope Cascade Interspecific Geraniums are medium-vigorous growers and usually require regular PGR applications, especially under warm growing conditions. Provide relatively high light levels and warm temperatures early on to establish the plant and to allow it to respond adequately to PGRs. Early Florel® sprays are key to making well-branched, quality plants. Watch for Botrytis under tight spacing and in combination plantings, especially when overhead irrigating. Monitor the media and try to keep the pH around 6.0 to avoid iron/manganese toxicity.

Geranium Interspecific **CALLIOPE® LARGE** *Pelargonium interspecific*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 2.3–2.8 mS/cm, PourThru EC: 3.5–4.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	72–74 °F (22–23 °C)	68–70 °F (20–21 °C)	200–250 ppm N	Not recommended	2.5 qt. I 1 ppp I 11–12 weeks 3 qt. I 2–3 ppp I 11–12 weeks 1.5 gal. HB I 3 ppp I 11–12 weeks 2 gal. HB I 4 ppp I 11–12 weeks

**Tech Tips:** Calliope Large Interspecific Geraniums are vigorous growers and usually require regular plant growth regulator (PGR) applications, especially under warm growing conditions. Provide relatively high light levels and warm temperatures early on to establish the plant and to allow it to respond adequately to PGRs. Early Florel® sprays are key to making well-branched, quality plants. Watch for Botrytis under tight spacing and in combination plantings, especially when overhead irrigating. Monitor the media and try to keep the pH around 6.0 to avoid iron/manganese toxicity.

Geranium Interspecific **CALLIOPE® MEDIUM** *Pelargonium interspecific*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 2.3–2.8 mS/cm, PourThru EC: 3.5–4.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	72–74 °F (22–23 °C)	68–70 °F (20–21 °C)	200–250 ppm N	Not recommended	1.25 qt. I 1 ppp I 9–10 weeks 2.5 qt. I 1 ppp I 11–12 weeks 3 qt. I 3 ppp I 11–12 weeks 1.5 gal. HB I 3–4 ppp I 11–12 weeks 1.5 gal. pot I 2 ppp I 11–12 weeks 2 gal. HB I 4–5 ppp I 11–12 weeks

**Tech Tips:** Calliope Medium geraniums are moderately vigorous and may require regular PGR applications, especially under warm growing conditions. Provide relatively high light levels and warm temperatures early on to establish the plant and to allow it to respond adequately to PGRs. Early Florel® sprays are key to making well-branched, quality plants. Watch for Botrytis under tight spacing and in combination plantings, especially when overhead irrigating. Monitor the media and try to keep the pH around 6.0 to avoid iron/manganese toxicity.

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Aphids, Thrips	Botrytis, Pythium root rot, Xanthomonas bacterial blight and wilt	Sprays of Cycocel® (1,000 ppm) under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm), or Bonzi® spray (3–5 ppm). Florel® can also be sprayed at 350–400 ppm early in the crop cycle, especially for larger pots and baskets, to improve branching and control growth. Do not spray Florel® on stressed plants. A Bonzi® drench (0.1 ppm) can be used at the end of production.	Calliope® Cascade Violet 70095371	V	M

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Aphids, Thrips	Botrytis, Pythium root rot, Xanthomonas bacterial blight and wilt	Sprays of Cycocel® (1,000 ppm) under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm), or Bonzi® spray (3–5 ppm). Florel® can also be sprayed at 350–400 ppm early in the crop cycle, especially for larger pots and baskets, to improve branching and control growth.	Calliope® Large Burgundy 70020360 Calliope® Large Coral 70054697 Calliope® Large Dark Red 70004166 Calliope® Large Hot Pink 70070046 Calliope® Large Hot Rose 70070047 Calliope® Large Lavender 70069761 Calliope® Large Lavender Mega Splash 70059873 Calliope® Large Magenta 70059912 Calliope® Large Orange Splash 70074574 Calliope® Large Pink 70040840 Calliope® Large Red 70054691 Calliope® Large Rose Mega Splash 70070020 Calliope® Large Salmon 70054695 Calliope® Large Scarlet Fire 70007852 Calliope® Large White 70087138	V V V M-V M-V V V V M-V V V M V M-V V	L M-L L M M-L M M-L M M L L E-M M-L M-L E-M

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Aphids, Thrips	Botrytis, Pythium root rot, Xanthomonas bacterial blight and wilt	Sprays of Cycocel® (1,000 ppm) under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm), or Bonzi® spray (3–5 ppm). Florel® can also be sprayed at 350–400 ppm early in the crop cycle, especially for larger pots and baskets, to improve branching and control growth.	Calliope® Medium Bright Rose 70087141 Calliope® Medium Bright Scarlet DL 70074799 Calliope® Medium Burgundy 70066631 Calliope® Medium Cherry DL 70074773 Calliope® Medium Crimson Flame 70048339 Calliope® Medium Dark Pink DL 70074774 Calliope® Medium Dark Red 70059883 Calliope® Medium Dark Red DL 70086843 Calliope® Medium Deep Rose 70059896 Calliope® Medium Hot Pink 70020318 Calliope® Medium Hot Rose 70070045 Calliope® Medium Pink Flame 70054721 Calliope® Medium Red 70059612 Calliope® Medium Rose Mega Splash Imp. 70087147 Calliope® Medium Salmon 70081016 Calliope® Medium Violet 70066648 Calliope® Medium White 70059858	M C-M M M M-V M M C-M M M M M M M M M M M M-V	M E-M L L L M M M M E-M M E-M M E-M M M M E

Geranium Interspecific **MANTRA™** *Pelargonium interspecific*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 2.3–2.8 mS/cm, PourThru EC: 3.5–4.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	72–74 °F (22–23 °C)	68–70 °F (20–21 °C)	200–250 ppm N	Not recommended	1.25 qt.   1 ppp   9–10 weeks 2.5 qt.   1 ppp   9–10 weeks 3 qt.   2–3 ppp   11–12 weeks 1.5 gal. HB   3 ppp   11–12 weeks 2 gal. HB   4 ppp   11–12 weeks

**Tech Tips:** Mantra Interspecific Geraniums are vigorous growers and usually require regular PGR applications, especially under warm growing conditions. Provide relatively high light levels and warm temperatures early on to establish the plant and to allow it to respond adequately to PGRs. Early Florel® sprays are key to making well branched, quality plants. Watch for Botrytis under tight spacing and in combination plantings, especially when overhead irrigating. Monitor the media and try to keep the pH around 6.0 to avoid iron/manganese toxicity.

Geranium Interspecific **MOJO™** *Pelargonium interspecific*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 2.3–2.8 mS/cm, PourThru EC: 3.5–4.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	72–74 °F (22–23 °C)	68–70 °F (20–21 °C)	200–250 ppm N	Not recommended	1.25 qt.   1 ppp   9–10 weeks 2.5 qt.   1 ppp   11–12 weeks 3 qt.   3 ppp   11–12 weeks 1.5 gal. HB   3–4 ppp   11–12 weeks 1.5 gal. pot   2 ppp   11–12 weeks 2 gal. HB   4–5 ppp   11–12 weeks

**Tech Tips:** Mojo Interspecific Geranium is moderately vigorous and may require regular plant growth regulator (PGR) applications, especially under warm growing conditions. Provide relatively high light levels and warm temperatures early on to establish the plant and to allow it to respond adequately to PGRs. Early Florel® sprays are key to making well-branched, quality plants. Watch for Botrytis under tight spacing and in combination plantings, especially when overhead irrigating. Monitor the media and try to keep the pH at or above 6.0 to avoid iron/manganese toxicity.

Geranium Interspecific **MOXIE!™** *Pelargonium interspecific*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 2.3–2.8 mS/cm, PourThru EC: 3.5–4.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	72–74 °F (22–23 °C)	68–70 °F (20–21 °C)	200–250 ppm N	Not recommended	Large Packs   1 ppp   5–6 weeks 1 pt.   1 ppp   6–7 weeks 1 qt.   1 ppp   7–8 weeks 1.25 qt.   1 ppp   9–10 weeks 1.5 gal. HB   4 ppp   11–12 weeks

**Tech Tips:** Moxie! Interspecific Geraniums are relatively compact and should not require repeated plant growth regulator (PGR) applications. Provide relatively high light levels and warm temperatures early on to establish the plant and to allow it to respond adequately to PGRs. Early Florel® sprays are key to making well-branched, quality plants. Watch for Botrytis under tight spacing and in combination plantings, especially when overhead irrigating. Monitor the media and try to keep the pH at around 6.0 to avoid iron/manganese toxicity.

Geranium Interspecific **PRETTY LITTLE™** *Pelargonium interspecific*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 2.3–2.8 mS/cm, PourThru EC: 3.5–4.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	72–74 °F (22–23 °C)	68–70 °F (20–21 °C)	200–250 ppm N	Not recommended	Large Packs   1 ppp   5–6 weeks 1 pt.   1 ppp   6–7 weeks 1 qt.   1 ppp   7–8 weeks 1.25 qt.   1 ppp   9–10 weeks 1.5 gal. HB   4 ppp   11–12 weeks

**Tech Tips:** Pretty Little Interspecific Geranium is very compact and should require minimal, if any, plant growth regulator (PGR) applications. Provide relatively high light levels and warm temperatures early on to establish the plant and to allow it to respond adequately to PGRs. Early Florel® sprays are key to making well-branched, quality plants and delaying very early flowering. Watch for Botrytis under tight spacing and in combination plantings, especially when overhead irrigating. Monitor the media and try to keep the pH at around 6.0 to avoid iron/manganese toxicity.

Geranium Ivy **CASCADE** *Pelargonium peltatum*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.5–5.9 SME 2.3–2.8 mS/cm, PourThru EC: 3.5–4.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	72–74 °F (22–23 °C)	68–70 °F (20–21 °C)	200–250 ppm N	Not recommended	1 qt.   1 ppp   8–9 weeks 1.25 qt.   1 ppp   10–11 weeks 2.5 qt.   1–2 ppp   12–13 weeks 3 qt.   3 ppp   12–13 weeks 1.5 gal. HB   3–4 ppp   12–13 weeks 2 gal. HB   4–5 ppp   12–13 weeks

**Tech Tips:** Cascade Ivy Geranium is relatively vigorous and will require regular plant growth regulator (PGR) applications, especially under warm growing conditions. Provide relatively high light levels and warm temperatures early on to establish the plant and to allow it to respond adequately to PGRs. Early Florel® sprays are vital to making well-branched, quality plants. Watch for Botrytis under tight spacing and in combination plantings, especially when overhead irrigating. Monitor the media and try to keep the pH between 5.5–5.9 to avoid iron deficiency (tip chlorosis).

	PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
	Aphids, Thrips	Botrytis, Pythium root rot, Xanthomonas bacterial blight and wilt	Sprays of Cycocel® (1,000 ppm) under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm), or Bonzi® spray (3–5 ppm). Florel® can also be sprayed at 350–400 ppm early in the crop cycle, especially for larger pots and baskets, to improve branching and control growth. Do not spray Florel® on stressed plants. A Bonzi® drench (0.1 ppm) can be used at the end of production.	Mantra™ Bright Red 70086828 Mantra™ Magenta 70080212 Mantra™ Pink 70080221	V M-V V	M-L M M-L

	PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
	Aphids, Thrips	Botrytis, Pythium root rot, Xanthomonas bacterial blight and wilt	Sprays of Cycocel® (1,000 ppm) under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm), or Bonzi® spray (3–5 ppm). Florel® can also be sprayed at 350–400 ppm early in the crop cycle, especially for larger pots and baskets, to improve branching and control growth. Bonzi® drench (0.1 ppm) can be used at the end of production to hold and tone plants before sale. Do not spray Florel® on stressed plants. A Bonzi® drench (0.1 ppm) can be used at the end of production to hold and tone plants before sale.	Mojo™ Cranberry Splash 70080207 Mojo™ Dark Pink 70069753 Mojo™ Dark Red 70074802 Mojo™ Hot Cherry 70086830 Mojo™ Magenta 70086838 Mojo™ Orange 70080227 Mojo™ Salmon 70080233 Mojo™ White 70080211	M M M M M-V M C-M M-V	M-L M-L L M M E-M M-L M

	PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
	Aphids, Thrips	Botrytis, Pythium root rot, Xanthomonas bacterial blight and wilt	Sprays of Cycocel® (750–1,000 ppm) under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm), or Bonzi® spray (2–3 ppm). Florel® can also be sprayed at 350–400 ppm early in the crop cycle, especially for larger pots and baskets, to improve branching and control growth. Do not spray Florel® on stressed plants. A very low rate of Bonzi® drench (0.05 ppm) can be used at the end of production to hold and tone plants before sale.	Moxie!™ Dark Red 70069760 Moxie!™ Deep Rose Mega Splash 70020544 Moxie!™ Hot Pink 70074767 Moxie!™ Orange 70080228 Moxie!™ Pink 70065930 Moxie!™ Pink Splash 70087139 Moxie!™ Scarlet 70054702 Moxie!™ Violet 70080213 Moxie!™ White 70080236	C C-M C-M C-M C-M C C-M C-M M	M-L M-L L M M-L E-M E-M E-M M

	PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
	Aphids, Thrips	Botrytis, Pythium root rot, Xanthomonas bacterial blight and wilt	Sprays of Cycocel® (750–1,000 ppm) to control growth. Florel® can also be sprayed at 350–400 ppm early in the crop cycle, especially for larger pots and baskets, to improve branching and control growth. Do not spray Florel® on stressed plants. A very low rate of Bonzi® drench (0.05 ppm) can be used at the end of production to hold and tone plants before sale.	Pretty Little™ Pink Splash 70070033	C	E-M

	PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
	Aphids, Thrips, Spider mites	Botrytis, Pythium root rot, Rust, Xanthomonas bacterial blight and wilt	Cycocel® at 1,000 ppm and under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm) or Bonzi® spray (3–5 ppm). Florel® can also be sprayed at 350–400 ppm early in the crop cycle, especially for larger pots and baskets, to improve branching and control growth.	Cascade Acapulco Compact 70004124 Cascade Appleblossom 70074831 Cascade Bright 70004171 Cascade Dark Red 70059624 Cascade Sofie 70004176 Cascade White 70004202	V V V V V V	E-M M M M M E-M

# VEGETATIVE FINISHING

## Geranium Ivy **IVY LEAGUE™** *Pelargonium peltatum*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.5–5.9 SME 2.3–2.8 mS/cm, PourThru EC: 3.5–4.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	72–74 °F (22–23 °C)	68–70 °F (20–21 °C)	200–250 ppm N	Not recommended	1 qt. I 1 ppp   8–9 weeks 1.25 qt. I 1 ppp   10–11 weeks 2.5 qt. I 1–2 ppp   12–13 weeks 3 qt. I 3 ppp   12–13 weeks 1.5 gal. HB   3–4 ppp   12–13 weeks 2 gal. HB   4–5 ppp   12–13 weeks

**Tech Tips:** Ivy League Ivy Geranium is relatively vigorous and will require regular plant growth regulator (PGR) applications, especially under warm growing conditions. Provide relatively high light levels and warm temperatures early on to establish the plant and to allow it to respond adequately to PGRs. Early Florel® sprays are key to making well-branched, quality plants. Watch for Botrytis under tight spacing and in combination plantings, especially when overhead irrigating. Monitor the media and try to keep the pH between 5.5–5.9 to avoid iron deficiency (tip chlorosis).

## Geranium Zonal **AMERICANA®** *Pelargonium zonale*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 2.3–2.8 mS/cm, PourThru EC: 3.5–4.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	72–74 °F (22–23 °C)	68–70 °F (20–21 °C)	200–250 ppm N	Not recommended	1.25 qt. I 1 ppp   9–10 weeks 2.5 qt. I 1 ppp   11–12 weeks 3 qt. I 3 ppp   11–12 weeks 1.5 gal. HB   3–4 ppp   11–12 weeks 1.5 gal. pot   2 ppp   11–12 weeks 2 gal. HB   4–5 ppp   11–12 weeks

**Tech Tips:** Americana Geraniums are moderately vigorous and usually require regular plant growth regulator (PGR) applications, especially under warm growing conditions. Provide relatively high light levels and warm temperatures early on to establish the plant and to allow it to respond adequately to PGRs. Early Florel® sprays are crucial to making well-branched, quality plants. Watch for Botrytis under tight spacing and in combination plantings, especially when overhead irrigating.

## Geranium Zonal **NOVELTY COLLECTION** *Pelargonium zonale*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 2.3–2.8 mS/cm, PourThru EC: 3.5–4.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	72–74 °F (22–23 °C)	68–70 °F (20–21 °C)	200–250 ppm N	Not recommended	1 qt. I 1 ppp   7–8 weeks 1.25 qt. I 1 ppp   9–12 weeks 2.5 qt. I 1 ppp   9–12 weeks 1.5 gal. HB   3 ppp   11–12 weeks

**Tech Tips:** These varieties have medium vigor and usually require regular plant growth regulator (PGR) applications, especially under warm growing conditions. Provide relatively high light levels and warm temperatures early on to establish the plant and to allow it to respond adequately to PGRs. Early Florel® sprays are crucial to making well-branched, quality plants. Watch for Botrytis under tight spacing and in combination plantings, especially when overhead irrigating. Monitor the media and try to keep the pH at or above 6.0 to avoid iron/manganese toxicity.

## Geranium Zonal **ROCKY MOUNTAIN™** *Pelargonium zonale*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 2.3–2.8 mS/cm, PourThru EC: 3.5–4.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	72–74 °F (22–23 °C)	68–70 °F (20–21 °C)	200–250 ppm N	Not recommended	2.5 qt. I 1 ppp   11–12 weeks 3 qt. I 3 ppp   11–12 weeks 1.5 gal. HB   3–4 ppp   11–12 weeks 2 gal. HB   4–5 ppp   11–12 weeks

**Tech Tips:** Rocky Mountain Zonal Geranium has a vigorous habit and usually require regular plant growth regulator (PGR) applications, especially under warm growing conditions. Provide relatively high light levels and warm temperatures early on to establish the plant and to allow it to respond adequately to PGRs. Early Florel® sprays are key to making well-branched, quality plants. Watch for Botrytis under tight spacing and in combination plantings, especially when overhead irrigating.

	PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
	Aphids, Thrips, Spider mites	Botrytis, Pythium root rot, rust, Xanthomonas bacterial blight and wilt	Sprays of Cycocel® (1,000 ppm) and under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm) or Bonzi® spray (3–5 ppm). Florel® can also be sprayed at 350–400 ppm early in the crop cycle, especially for larger pots and baskets, to improve branching and control growth. Bonzi® drench (0.1–0.25 ppm) can be used at the end of production to hold and tone plants before sale.	Ivy League™ Amethyst 70074834 Ivy League™ Arctic Red 70004182 Ivy League™ Burgundy 70069770 Ivy League™ Burgundy Bicolor 70004181 Ivy League™ Cherry Blossom 70074821 Ivy League™ Deep Pink 70074807 Ivy League™ Hot Coral 70053309 Ivy League™ Light Lavender 70074808 Ivy League™ Orchid 70074805 Ivy League™ Red 70074811 Ivy League™ Salmon 70028703 Ivy League™ White 70069781	M M V C-M M M-V M V M-V M M V	M-L M-L M-L L L L E-M L L M-L M-L M

	PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
	Aphids, Thrips	Botrytis, Pythium root rot, Xanthomonas bacterial blight and wilt	Cycocel® at 1,000 ppm and under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm) or Bonzi® spray (3–5 ppm). Florel® can also be sprayed at 350–400 ppm early in the crop cycle, especially for larger pots and baskets, to improve branching and control growth.	Americana® Bright Red 70020478 Americana® Cherry Rose 70020479 Americana® Coral 70020480 Americana® Dark Red 70020527 Americana® Dark Salmon 70004135 Americana® Light Pink Splash 70004127 Americana® Orchid 70020482 Americana® Pink 70004093 Americana® Red 70007854 Americana® Salmon 70020528 Americana® Scarlet Fire 70074607 Americana® Violet Ice 70070037 Americana® White 70020529 Americana® White Splash 70020558	M-V M-V M-V V M-V M M-V M-V M-V M-V M-V V V M	E-M E E M M E-M E-M E L E M-L M M M

	PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
	Aphids, Thrips	Botrytis, Pythium Root Rot, Xanthomonas Bacterial Blight and Wilt	Cycocel® at 1,000 ppm and under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm) or Bonzi® spray (3–5 ppm). Florel® can also be sprayed at 350–400 ppm early in the crop cycle, especially for larger pots and baskets, to improve branching and control growth.	Exotica™ Coral Sunrise 70020584 Rosalie™ Antique Salmon 70080206 Starry Pure White 70074780	M M M	E-M M M-L

	PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
	Aphids, Thrips	Botrytis, Pythium root rot, Xanthomonas bacterial blight and wilt	Cycocel® at 1,000 ppm and under hot conditions with a tank mix spray of Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm) or Bonzi® spray (3–5 ppm). Florel® can also be sprayed at 350–400 ppm early in the crop cycle, especially for larger pots and baskets, to improve branching and control growth.	Rocky Mountain™ Dark Red 70006932 Rocky Mountain™ Deep Rose 70020534 Rocky Mountain™ Lavender 70020490 Rocky Mountain™ Light Pink 70020491 Rocky Mountain™ Magenta 70020492 Rocky Mountain™ Orange 70004111 Rocky Mountain™ Pink 70006941 Rocky Mountain™ Red 70004112 Rocky Mountain™ Salmon 70004113 Rocky Mountain™ Violet 70006935	V V V V M-V V V V V V	E-M E-M E-M E-M M E-M E-M E-M E-M M

Geranium Zonal **TANGO™** *Pelargonium zonale*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 2.3–2.8 mS/cm, PourThru EC: 3.5–4.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	72–74 °F (22–23 °C)	68–70 °F (20–21 °C)	200–250 ppm N	Not recommended	Large Packs   1 ppp   5–6 weeks 1 pt.   1 ppp   6–7 weeks 1 qt.   1 ppp   7–8 weeks 1.25 qt.   1 ppp   9–10 weeks 1.5 gal. HB   4 ppp   11–12 weeks

**Tech Tips:** Tango Zonal Geranium is relatively compact and should not require repeated PGR applications. Provide relatively high light levels and warm temperatures early on to establish the plant and to allow it to respond adequately to plant growth regulators (PGRs). Early Florel® sprays are key to making well-branched, quality plants. Watch for Botrytis under tight spacing and in combination plantings, especially when overhead irrigating.

Heliotrope **SCENTROPIA™** *Heliotropium arborescens*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	70–72 °F (21–22 °C)	66–68 °F (19–20 °C)	200–250 ppm N	1 pinch	1 qt.   1 ppp   6–7 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1 ppp   9–10 weeks 3 qt.   2–3 ppp   9–10 weeks 1.5 gal. HB   4 ppp   10–11 weeks 2 gal. HB   5 ppp   10–11 weeks

**Tech Tips:** Scentropia Heliotrope has a medium-vigorous habit and typically requires some plant growth regulator (PGR) applications to keep plants compact, especially under tight spacing. Late B-Nine® WSG sprays can delay flowering. Avoid severe drying out of the media. The beautiful purple-blue flowers have a sweet scent.

Impatiens **SILHOUETTE®** *Impatiens walleriana*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	72–74 °F (22–23 °C)	68–70 °F (20–21 °C)	200–250 ppm N	Not recommended	1 qt.   1 ppp   6–7 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1 ppp   9–10 weeks 3 qt.   2–3 ppp   9–10 weeks 1.5 gal. HB   4 ppp   10–11 weeks 2 gal. HB   5 ppp   10–11 weeks

**Tech Tips:** Silhouette Impatiens generally do not need any pinching if cuttings are compact and well-branched. Florel® can be used early but is usually not needed. Keys to success are to avoid water and heat stress when the plants mature. A Bonzi® drench during mid-late season to keep growth under control. Scout for thrips regularly and thrips-vectored Tosspoviruses. Check media EC periodically to avoid high salt levels.

Impatiens Interspecific New Guinea **SPECTRA™** *Impatiens interspecific*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	72–74 °F (22–23 °C)	68–70 °F (20–21 °C)	125–175 ppm N	Not recommended	Large Packs   1 ppp   4–5 weeks 1 pt.   1 ppp   5–6 weeks 1 qt.   1 ppp   6–7 weeks 1.25 qt.   1 ppp   7–9 weeks 2.5 qt.   1 ppp   7–9 weeks 3 qt.   2–3 ppp   8–9 weeks 1.5 gal. HB   3 ppp   9–10 weeks 1.5 gal. pot   2–3 ppp   8–9 weeks 2 gal. HB   4 ppp   9–10 weeks

**Tech Tips:** The keys to success are to avoid water and heat stress when the plants mature. Scout for thrips regularly and thrips-vectored Tosspoviruses. Check media EC periodically to avoid high salt levels. Moderate light levels and warm temperatures provide the largest flower.



Impatiens New Guinea **SONIC®** *Impatiens hawkeri*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	72–74 °F (22–23 °C)	68–70 °F (20–21 °C)	125–175 ppm N	Not recommended	1 qt.   1 ppp   6–7 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1–2 ppp   9–10 weeks 3 qt.   3 ppp   9–10 weeks 1.5 gal. HB   4 ppp   10–11 weeks 2 gal. HB   5 ppp   10–11 weeks

**Tech Tips:** Sonics New Guinea Impatiens generally do not need any pinching. The keys to success are to avoid water and heat stress when the plants mature. Scout for thrips regularly and thrips-vectored Tospoviruses. Check media EC periodically to avoid high salt levels. Moderate light levels and warm temperatures provide the largest flower.

Impatiens New Guinea **SUPER SONIC®** *Impatiens hawkeri*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	72–74 °F (22–23 °C)	68–70 °F (20–21 °C)	125–175 ppm N	Not recommended	1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1 ppp   9–10 weeks 3 qt.   2–3 ppp   9–10 weeks 1.5 gal. HB   3–4 ppp   10–11 weeks 1.5 gal. pot   2–3 ppp   9–10 weeks 2 gal. HB   4–5 ppp   10–11 weeks

**Tech Tips:** Super Sonics New Guinea Impatiens generally do not need any pinching. Keys to success are to avoid water and heat stress when the plants mature. Scout for thrips regularly and thrips-vectored Tospoviruses. Check media EC periodically to avoid high salt levels. Moderate light levels and warm temperatures provide the most significant flower.

Ipomoea **SIDEKICK™** *Ipomoea batatas*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	72–74 °F (22–23 °C)	68–70 °F (20–21 °C)	200–250 ppm N	Not recommended	1 pt.   1 ppp   4–5 weeks 1 qt.   1 ppp   5–6 weeks 1.25 qt.   1 ppp   7–8 weeks 2.5 qt.   1 ppp   8–9 weeks 3 qt.   2–3 ppp   8–9 weeks 1.5 gal. HB   3 ppp   9–10 weeks 1.5 gal. pot   3–5 ppp   10–12 weeks 2 gal. HB   4 ppp   9–10 weeks

**Tech Tips:** Sidekick is a moderately vigorous ipomoea that works in a range of pot sizes, including quarts and baskets. They are excellent in combo plantings. Watch for Aphids during finished production. Bonzi® drenches work well anytime during production to control growth.

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Aphids, Thrips, Spider mites, Broad mites	Botrytis, Myrothecium fungal leaf spot (propagation), Impatiens necrotic spot virus (INSV)	Bonzi® (1–2 ppm). Avoid late Bonzi® sprays to prevent flower size reduction. Florel® (300 ppm) can be used early on after transplant to delay flowering, but this should only be done for large baskets or pots where flower delay is desired.	Sonic® Amethyst 70003738 Sonic® Bright Pink 70019677 Sonic® Deep Purple 70066412 Sonic® Deep Red 70003800 Sonic® Deep Salmon 70066413 Sonic® Light Lavender 70003739 Sonic® Light Pink 70003740 Sonic® Lilac 70003741 Sonic® Magic Pink 70003785 Sonic® Orange 70003742 Sonic® Pink 70003743 Sonic® Red 70008405 Sonic® Salmon 70003744 Sonic® Sweet Orange 70003805 Sonic® Sweet Purple 70003806 Sonic® Sweet Red 70061277 Sonic® White 70066410	C-M C-M M C-M C-M C-M C-M C-M C C-M C-M C-M C-M C-M C-M C C-M M	M M M E-M M-L E-M M M L M E-M M M-L M M-L M-L E-M

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Aphids, Thrips, Spider mites, Broad mites	Botrytis, Myrothecium fungal leaf spot (propagation), Impatiens necrotic spot virus (INSV)	Control growth using sprays of Bonzi® (1–3 ppm). Avoid late Bonzi® sprays to prevent flower size reduction. Florel® (300 ppm) can be used early on after transplant to delay flowering, but this should only be done for large baskets or pots where flower delay is desired.	Super Sonic® Dark Red 70066415 Super Sonic® Dark Salmon 70003793 Super Sonic® Flame 70003747 Super Sonic® Hot Pink 70003748 Super Sonic® Lavender 70003749 Super Sonic® Lilac 70003750 Super Sonic® Magenta 70019687 Super Sonic® Orange Ice 70019711 Super Sonic® Pastel Pink 70003751 Super Sonic® Pink 70019680 Super Sonic® Purple 70008383 Super Sonic® Red 70003752 Super Sonic® Sweet Cherry 70003753 Super Sonic® White 70003754	V V V V V V V M-V V V V V V M-V V	M E M-L M-L M E-M M L M M M E-M E-M M

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Aphids, Whiteflies, Thrips	Edema (physiological condition)	Control growth using drenches of Bonzi® (1–2 ppm). Using higher than recommended Bonzi drench rates can cause lime-colored varieties to have an undesirable dark tint to the foliage.	Sidekick™ Black 70069218 Sidekick™ Heart Black 70069219 Sidekick™ Heart Bronze 70038353 Sidekick™ Heart Lime 70051340 Sidekick™ Lime 70028150	M M M M M	N/A N/A N/A N/A N/A

# VEGETATIVE FINISHING

## Lantana **BANDANA**® *Lantana camara*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	76–78 °F (24–26 °C)	70–72 °F (21–22 °C)	200–250 ppm N	1 pinch	1 qt.   1 ppp   7–8 weeks 1.25 qt.   1 ppp   9–10 weeks 2.5 qt.   1 ppp   10–11 weeks 3 qt.   3 ppp   10–11 weeks 1.5 gal. HB   4 ppp   11–12 weeks 1.5 gal. pot   4 ppp   11–12 weeks 2 gal. HB   5 ppp   11–12 weeks

**Tech Tips:** Bandana Lantana is bred for excellent branching and a compact-medium, mounding habit. One early pinch is all that is needed. Bandana should only require a low to moderate amount of plant growth regulator (PGR) applications to control growth. Florel® sprays will delay flowering slightly. Mid-crop Bonzi® drenches work well to control height. Relatively high light levels and warm temperatures are needed to produce high-quality plants. To reduce flower cycling, keep plants well-fertilized and avoid severe drought stress.

## Lantana **BANDITO**™ *Lantana camara*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	76–78 °F (24–26 °C)	70–72 °F (21–22 °C)	200–250 ppm N	1 pinch	Packs   1 ppp   5–6 weeks Large Packs   1 ppp   6–7 weeks 1 pt.   1 ppp   6–7 weeks 1 qt.   1 ppp   7–8 weeks 1.25 qt.   1 ppp   9–10 weeks 2.5 qt.   1–2 ppp   10–11 weeks 3 qt.   3 ppp   10–11 weeks 1.5 gal. HB   4 ppp   11–12 weeks

**Tech Tips:** Bandito Lantana is bred for excellent branching and a compact, mounding habit. One early pinch is all that is needed. Bandito should only require a low to moderate amount of PGR applications to control growth. Florel® sprays will delay flowering slightly. Mid-crop Bonzi drenches work well to control height. Relatively high light levels and warm temperatures are needed to produce high-quality plants. To reduce flower cycling, keep plants well-fertilized and avoid severe drought stress. Bandito is a good choice for growers in the far south or where plants are grown under very tight spacing.

## Lantana **BANDOLERO**™ *Lantana camara*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	76–78 °F (24–26 °C)	70–72 °F (21–22 °C)	200–250 ppm N	1 pinch	1 qt.   1 ppp   7–8 weeks 1.25 qt.   1 ppp   9–10 weeks 2.5 qt.   1 ppp   10–11 weeks 3 qt.   2–3 ppp   10–11 weeks 1.5 gal. HB   4 ppp   11–12 weeks 1.5 gal. pot   4 ppp   11–12 weeks 2 gal. HB   5 ppp   11–12 weeks

**Tech Tips:** Bandolero Lantana is bred for excellent branching and a relatively vigorous, mounding habit. One early pinch is all that is needed. This series has about 20–30% more vigor than typical Bandana Lantana and generally needs plant growth regulator (PGR) applications to control growth. Florel® sprays will delay flowering slightly. Mid-crop Bonzi® drenches work well to control height. Relatively high light levels and warm temperatures are needed to produce high quality plants. To reduce flower cycling, keep plants well-fertilized and avoid severe drought stress.

## Lantana **BANDOLISTA**™ *Lantana camara*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	76–78 °F (24–26 °C)	70–72 °F (21–22 °C)	200–250 ppm N	1 pinch	1 qt.   1 ppp   7–8 weeks 1.25 qt.   1 ppp   10–11 weeks 2.5 qt.   1 ppp   10–11 weeks 3 qt.   2–3 ppp   11–12 weeks 1.5 gal. HB   3 ppp   11–12 weeks 2 gal. HB   4 ppp   11–12 weeks

**Tech Tips:** Bandolista Lantana is bred for excellent branching and a relatively vigorous, mounding to semi-trailing habit. They are ideal varieties for hanging baskets. One early pinch is all that is needed. Bandolista has about 20–30% more vigor than typical Bandana Lantana types and generally needs PGR applications to control growth. Florel® sprays will delay flowering slightly. Mid-crop Bonzi® drenches work well to control height. Relatively high light levels and warm temperatures are needed to produce high quality plants. To reduce flower cycling, keep plants well-fertilized and avoid severe drought stress.

## Lantana **HOT BLOODED**® *Lantana camara*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	76–78 °F (24–26 °C)	70–72 °F (21–22 °C)	200–250 ppm N	1 pinch	1 pt.   1 ppp   7–8 weeks 1 qt.   1 ppp   9–10 weeks 2.5 qt.   2–3 ppp   10–11 weeks 3 qt.   2–3 ppp   10–11 weeks 1.5 gal. pot   4 ppp   11–12 weeks

**Tech Tips:** Hot Blooded Lantana is bred for excellent branching and a relatively vigorous, mounding habit. One early pinch is all that is needed. Hot Blooded Lantana has about 20–30% more vigor than typical Bandana Lantana types and generally needs plant growth regulator (PGR) applications to control growth. Florel® sprays will delay flowering slightly. Mid-crop Bonzi® drenches work well to control height. Relatively high light levels and warm temperatures are needed to produce high quality plants. To reduce flower cycling, keep plants well-fertilized and avoid severe drought stress.

	PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
	Aphids, Whiteflies, Leafminers	No significant disease issues	B-Nine® WSG (2,500 ppm) + Cycocel® (1,000 ppm), Sumagic® (10–20 ppm), or Bonzi® (15–30 ppm) can be used. Sprays of Florel® (350–500 ppm) or a tank-mix spray of Florel® (350–500 ppm) + B-Nine® WSG (2,500 ppm) can also be used early on to control growth and improve branching.	Bandana® Black Cherry 70090297 Bandana® Cherry 70019858 Bandana® Cherry Sunrise 70003837 Bandana® Gold 70087245 Bandana® Lemon Zest 70007850 Bandana® Mango 70071396 Bandana® Peach 70019840 Bandana® Pink 70066193 Bandana® Red 70054196 Bandana® Rose Imp. 70090285 Bandana® White Imp. 70090278 Bandana® Yellow 70070695	M C-M M M C-M M C-M M-V M-V M M M C-M	M-L M M-L E M M M E-M M M M M

	PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
	Aphids, Whiteflies, Leafminers	No significant disease issues	B-Nine® WSG (2,500 ppm) + Cycocel® (1,000 ppm), Sumagic® (10–20 ppm), or Bonzi® (15–30 ppm) can be used. Sprays of Florel® (350–500 ppm) or a tank-mix spray of Florel® (350–500 ppm) + B-Nine® WSG (2,500 ppm) can also be used early on to control growth and improve branching.	Bandito™ Gold 70096258 Bandito™ Lemon Zest 70076115 Bandito™ Orange Sunrise 70003838 Bandito™ Red 70019835 Bandito™ Rose 70019834 Bandito™ White 70090244 Bandito™ Yellow Imp. 70090280	C C C C-M C C C	E-M M E-M M E M E

	PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
	Aphids, Whiteflies, Leafminers	No significant disease issues	B-Nine® WSG (2,500–3,500 ppm) + Cycocel® (1,000 ppm), Sumagic® (15–20 ppm), or Bonzi® (20–30 ppm) can be used. Florel® (350–500 ppm) or a tank-mix spray of Florel® (350–500 ppm) + B-Nine® WSG (2,500–3,500 ppm) can also be used early on to control growth and improve branching. Florel® applications will delay flowering slightly. Bonzi® drenches (2–4 ppm) also work well. Bandolero Lantana are relatively vigorous and may need regular chemical growth control.	Bandolero™ Cherry Sunrise 70071399 Bandolero™ Guava 70071403 Bandolero™ Lychee 70090295 Bandolero™ Pineapple 70071402 Bandolero™ Pink 70019831 Bandolero™ Red 70070698 Bandolero™ White Imp. 70090276	V V M V M-V V M-V	M M E-M M E-M M M

	PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
	Aphids, Whiteflies, Leafminers	No significant disease issues	B-Nine® WSG (2,500–3,500 ppm) + Cycocel® (1,000 ppm), Sumagic® (15–20 ppm), or Bonzi® (20–30 ppm) can be used. Sprays of Florel® (350–500 ppm) or a tank-mix spray of Florel® (350–500 ppm) + B-Nine® WSG (2,500–3,500 ppm) can also be used early on to control growth and improve branching. Florel® applications will delay flowering slightly. Bonzi® drenches (2–4 ppm) also work well.	Bandolista™ Coconut 70096267 Bandolista™ Mango 70087256 Bandolista™ Pineapple 70087261 Bandolista™ Red Chili 70096271	M-V V V V	M-L M M M

	PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
	Aphids, Whiteflies, Leafminers	No significant disease issues	B-Nine® WSG (2,500–3,500 ppm) + Cycocel® (1,000 ppm), Sumagic® (15–20 ppm), or Bonzi® (20–30 ppm) can be used. Sprays of Florel® (350–500 ppm) or a tank-mix spray of Florel® (350–500 ppm) + B-Nine® WSG (2,500–3,500 ppm) can also be used early on to control growth and improve branching. Florel® applications will delay flowering slightly. Bonzi® drenches (2–4 ppm) also work well.	Hot Blooded® Red 70077412	M	E

Lantana **LANDSCAPE BANDANA®** *Lantana camara*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	76–78 °F (24–26 °C)	70–72 °F (21–22 °C)	200–250 ppm N	1 pinch	1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1 ppp   9–10 weeks 3 qt.   2–3 ppp   9–10 weeks 1.5 gal. HB   3 ppp   10–11 weeks 1.5 gal. pot   4 ppp   10–11 weeks 2 gal. HB   4 ppp   10–11 weeks

**Tech Tips:** Landscape Bandana Lantana is bred for excellent branching and a relatively vigorous, spreading growth habit. One early pinch is all that is needed. Landscape Bandana Lantana has about 20–30% more vigor than typical Bandana types, and generally needs plant growth regulator (PGR) applications to control growth. Florel® sprays will delay flowering slightly. Mid-crop Bonzi® drenches work well to control height. Relatively high light levels and warm temperatures are needed to produce high-quality plants. To reduce flower cycling, keep plants well-fertilized and avoid severe drought stress.

Licorice Plant **HELICHRYSUM PETIOLARE** *Helichrysum petiolare*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	70–72 °F (21–22 °C)	62–64 °F (17–18 °C)	125–175 ppm N	1 pinch	1 pt.   1 ppp   5 weeks 1 qt.   1 ppp   5–6 weeks 1.25 qt.   1–2 ppp   7–9 weeks 2.5 qt.   1–2 ppp   7–9 weeks

**Tech Tips:** Helichrysum petiolare (Licorice Plant) is a semi-trailing plant that has low water and fertilizer requirements. Use plastic tenting or Reemay® fabric during propagation if needed to keep high humidity and to minimize excess water on the foliage. Provide moderate to warm temperatures early on after transplant to get the plants established. Avoid over-saturated media and overly cool temperatures. Helichrysum petiolare may form golden yellow flowers on very mature plants, but its main value is its unique silver-colored foliage. Trimming plants is the best way to control growth. Syngenta Flowers sells three different Helichrysum petiolare varieties (Limelight, Microphyllum Mini Silver, Silver) and all can be propagated and grown very similarly.

Lobelia **TECHNO®** *Lobelia erinus*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	70–72 °F (21–22 °C)	62–64 °F (17–18 °C)	200–250 ppm N	1 pinch	1 pt.   1 ppp   6 weeks 1 qt.   1 ppp   6–7 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1–2 ppp   9–10 weeks 3 qt.   3 ppp   9–10 weeks 1.5 gal. HB   4 ppp   10–11 weeks 2 gal. HB   5 ppp   10–11 weeks

**Tech Tips:** Techno Lobelias are relatively fast growers that have a semi-trailing habit and excellent heat tolerance. They fill containers quickly. Pinch the plant as needed for 6-inch and larger containers. Use proper disinfectant should be used on all trimming tools to prevent possible virus spread. Avoid overwatering on young plants. Long days will hasten and improve flowering, especially when produced in early spring. Techno Lobelia is best when grown cool with high light. Watch for thrips and thrips-vectored Toxoplasmas (tomato spotted wilt and impatiens necrotic spot).

Lobelia **TECHNO® UPRIGHT** *Lobelia erinus*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	70–72 °F (21–22 °C)	62–64 °F (17–18 °C)	200–250 ppm N	1 pinch	1 pt.   1 ppp   6 weeks 1 qt.   1 ppp   6–7 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1–2 ppp   9–10 weeks 3 qt.   3 ppp   9–10 weeks 1.5 gal. HB   4 ppp   10–11 weeks 2 gal. HB   5 ppp   10–11 weeks

**Tech Tips:** Techno Upright Lobelias are relatively fast growers that have a semi-trailing habit and excellent heat tolerance. They fill containers quickly. Pinch the plant as needed for 6-inch and larger containers. Use proper disinfectant should be used on all trimming tools to prevent possible virus spread. Avoid overwatering on young plants. Long days will hasten and improve flowering, especially when produced in early spring. Techno Upright Lobelia is best when grown cool with high light. Watch for thrips and thrips-vectored Toxoplasmas (tomato spotted wilt and impatiens necrotic spot).

Lysimachia **GOLDII** *Lysimachia nummularia*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	70–72 °F (21–22 °C)	64–66 °F (18–19 °C)	125–175 ppm N	1 pinch	1 pt.   1 ppp   5–6 weeks 1 qt.   1 ppp   6–7 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1–2 ppp   9–10 weeks 3 qt.   3 ppp   9–10 weeks 1.5 gal. HB   4 ppp   10–11 weeks 2 gal. HB   5 ppp   10–11 weeks

**Tech Tips:** Goldii Lysimachia is a trailing plant that has a medium growth habit and is grown for its attractive gold-colored foliage. Provide moderate to warm temperatures early on after transplant to get the plants established. Avoid over-saturated media and overly cool temperatures. Trimming plants is the best way to control growth.

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Aphids, Whiteflies, Leafminers	No significant disease issues	B-Nine® WSG (2,500–3,500 ppm) + Cycocel® (1,000 ppm), Sumagic® (15–20 ppm), or Bonzi® (20–30 ppm) can be applied. Sprays of Florel® (350–500 ppm) or a tank-mix spray of Florel® (350–500 ppm) + B-Nine® WSG (2,500–3,500 ppm) can also be used early on to control growth and improve branching.	Landscape Bandana® Clementine 70076122 Landscape Bandana® Gold Imp. 70070696 Landscape Bandana® Lemon Zest 70071406 Landscape Bandana® Pink 70051062 Landscape Bandana® Red 70054204 Landscape Bandana® Yellow 70036136	V V V V V V	M M M M-L M E

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Fungus gnats, Whiteflies	Botrytis, Fungal root rot	Does not require any chemical growth regulation. If plants get too large for their container, then it is best to trim the plants back to control growth. Pinching is the best method to control growth on Helichrysum petiolare.	Limelight 70003670 Microphyllum Mini Silver 70003686 Silver 70003669	M M M	N/A N/A N/A

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Thrips	Botrytis, Fungal root rot, Impatiens necrotic spot virus (INSV), Tomato spotted wilt virus (TSWV)	Sprays of B-Nine® WSG (2,500 ppm) and Sumagic® (2-4 ppm) can be applied to control growth. Drenches of Bonzi® (1-2 ppm) work well mid to late in the production cycle.	Techno® Blue 70003825 Techno® Cobalt Blue 70069939 Techno® Dark Blue 70003826 Techno® Electric Blue 70003827 Techno® Large Blue Violet 70065214 Techno® Light Blue 70053408 Techno® Lilac Imp. 70096125 Techno® Violet 70052763 Techno® White 70019818	M C-M M M M-V M M M C-M	E E E E E E E E E

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Thrips	Botrytis, Fungal root rot, Impatiens necrotic spot virus (INSV), Tomato spotted wilt virus (TSWV)	Sprays of B-Nine® WSG (2,500 ppm) and Sumagic® (2-4 ppm) can be applied to control growth. Drenches of Bonzi® (1-2 ppm) work well mid to late in the production cycle.	Techno® Upright Blue 70059431 Techno® Upright Cobalt Blue 70065203 Techno® Upright Dark Blue 70076404 Techno® Upright Light Blue 70052754 Techno® Upright Purple 70051508 Techno® Upright White 70052752	M C C C M M	E E E E E E

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Aphids, Whiteflies	Fungal root rot, Botrytis	Goldii Lysimachia is a trailing plant that has a medium growth habit. Its growth can be controlled by pinching or shearing.	Goldii 70003845	M-V	N/A

Osteospermum **TRADEWINDS®** *Osteospermum ecklonis*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	70–72 °F (21–22 °C)	62–64 °F (17–18 °C)	200–250 ppm N	1 pinch	1 qt.   1 ppp   6–7 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1 ppp   9–10 weeks 3 qt.   2–3 ppp   9–10 weeks 1.5 gal. HB   4 ppp   10–11 weeks 1.5 gal. pot   4 ppp   10–11 weeks 2 gal. HB   5 ppp   10–11 weeks

**Tech Tips:** Although Tradewinds Osteospermum are bred to flower at higher temperatures, cool temperatures and high light will help make the highest quality plants. If grown cool, no plant growth regulators (PGRs) are typically needed. One pinch is recommended to make fully branched plants. The trailing types work especially well in baskets.

Pentas **STARCLUSTER™** *Pentas lanceolata*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	76–78 °F (24–26 °C)	70–72 °F (21–22 °C)	200–250 ppm N	1 pinch	1 qt.   1 ppp   8–9 weeks 1.25 qt.   1 ppp   10–11 weeks 2.5 qt.   1–2 ppp   12–13 weeks 3 qt.   3 ppp   12–13 weeks 1.5 gal. HB   3–4 ppp   12–13 weeks 2 gal. HB   4–5 ppp   12–13 weeks

**Tech Tips:** They start slow after transplant and need warm temperatures and high light intensities to establish and grow. Cold temperatures will lead to long crop times and poor overall quality. Plants will flower faster under relatively long days. Plants will benefit from one to two pinches to improve branching and fill on large pots and patio containers. Bonzi® drenches work well to control growth.

Pentas **STARCLUSTER™ CASCADE** *Pentas lanceolata*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 3.5–4.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	76–78 °F (24–26 °C)	70–72 °F (21–22 °C)	200–250 ppm N	1 pinch	1 qt.   1 ppp   7–8 weeks 1.25 qt.   1 ppp   9–11 weeks 2.5 qt.   1 ppp   9–11 weeks 3 qt.   3 ppp   10–12 weeks 1.5 gal. HB   4 ppp   11–12 weeks 2 gal. HB   5 ppp   11–12 weeks

**Tech Tips:** Starcluster Cascades Pentas are slow rooters, so provide sufficient temperature during propagation. They start slow after transplant and need warm temperatures and high light intensities to establish and grow. Cold temperatures will lead to long crop times and poor overall quality. Plants will flower faster under relatively long days. Plants will benefit from one to two pinches to improve branching and fill on large pots and patio containers. Bonzi® drenches work well to control growth. Unlike seed pentas, Starcluster Cascade vegetative Pentas are not as susceptible to iron toxicity caused by relatively low pH levels in the media. However, media pH should still be monitored regularly and kept above 5.8 throughout the growth cycle.

Petunia **DEKKO™** *Petunia hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.5–5.9 SME 2.3–2.8 mS/cm, PourThru EC: 3.5–4.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	70–72 °F (21–22 °C)	62–64 °F (17–18 °C)	200–250 ppm N	1–2 pinches	Large Packs   1 ppp   4–5 weeks 1 qt.   1 ppp   5–6 weeks 1.25 qt.   1 ppp   7–8 weeks 2.5 qt.   1 ppp   8–9 weeks 3 qt.   2–3 ppp   8–9 weeks 1.5 gal. HB   3 ppp   9–10 weeks 1.5 gal. pot   3–5 ppp   10–12 weeks 2 gal. HB   4 ppp   9–10 weeks

**Tech Tips:** Keep media pH down in the mid 5.0's to avoid iron deficiency and tip chlorosis. Temperatures can be lowered three weeks after planting and especially towards the end of production to tone or hold the plant. High DLIs and cool finishing temperatures produce high-quality petunias. Dekko Petunia was bred and selected to flower under day lengths of 10.5 hours; however, flower number increases under longer day lengths. Use proper sanitation when pinching or shearing petunia. Petunia and other solanaceous crops are highly susceptible to Tobacco Mosaic Virus (TMV), which can be easily transmitted by mechanical means.

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Aphids, Whiteflies, Thrips	Fungal root rot	B-Nine® WSG (2,500 ppm), B-Nine® WSG (2,500 ppm) + Cycocel® (1,000 ppm), or Sumagic® (5 ppm) can be applied to the plants as needed. A drench of Bonzi® (2 ppm) or Cycocel® (750–1,000 ppm) can be used mid to late in the crop cycle to control growth or hold plants before sale.	Tradewinds® Bronze 70055274 Tradewinds® Deep Purple 70003906 Tradewinds® Lemon Zest 70071158 Tradewinds® Light Purple 70071153 Tradewinds® Sunset 70083260 Tradewinds® White 70020017 Tradewinds® Yellow 70061545	M M C-M M M M M	E E-M E-M E E E-M E-M

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Thrips	Fungal stem rot	Sprays of B-Nine® WSG (2,500–3,500 ppm) can be used. Drenches of Bonzi® (3–4 ppm) also work well to control growth and are the preferred method of growth control.	Starcluster™ Appleblossom 70020709 Starcluster™ Lavender 70020684 Starcluster™ Light Pink 70089406 Starcluster™ Pink 70051347 Starcluster™ Red Imp. 70075000 Starcluster™ Rose 70075003 Starcluster™ Violet 70020716 Starcluster™ White Imp. 70074646	M M-V C-M M M M C-M M	M M M E-M M M M E-M

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Thrips	Fungal stem rot	Sprays of B-Nine® WSG (2,500–3,500 ppm) can be used. Drenches of Bonzi® (3–4 ppm) also work well to control growth and are the preferred method of growth control.	Starcluster™ Cascade Blush 70095883 Starcluster™ Cascade Pink Bicolor 70095874 Starcluster™ Cascade Red 70095870 Starcluster™ Cascade White 70095877	M M M M-V	M-L M M-L M-L

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING	MPR
Aphids, Thrips, Budworms, Leafminers, Whiteflies	Botrytis, Powdery mildew, Viruses (TMV, TSWV)	B-Nine® WSG (2,500–5,000 ppm) or Sumagic® (20–30 ppm) can be used to control growth. A tank-mix spray of Florel® (350–500 ppm) + B-Nine® WSG (2,500 ppm) can also be used to control growth and improve branching early in production. A Bonzi® drench (2–3 ppm) can be given 3–4 weeks before finishing.	Dekko™ Banana 70083317 Dekko™ Blue 70076419 Dekko™ Deep Lavender Vein 70076420 Dekko™ Lavender Eye 70008029 Dekko™ Purple 70061519 Dekko™ Red 70008026 Dekko™ Sky Blue 70071607 Dekko™ Sorbet 70087760 Dekko™ Star Coral 70066651 Dekko™ Star Rose 70020321 Dekko™ White 70071612	C-M C-M M M-V M M C-M M-V M M M	M-L M M M-L M-L M M M M-L M-L M-L L	11.5 hrs. 10.5 hrs. 10.5 hrs. 11 hrs. 11.5 hrs. 10.5 hrs. 10.5 hrs. 11.5 hrs. 10.5 hrs. 11.5 hrs. 11.5 hrs. 13.5 hrs.

\*MPR is Minimum Photoperiod Recommendation.

Petunia **FUN HOUSE™** *Petunia hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.5–5.9 SME 2.3–2.8 mS/cm, PourThru EC: 3.5–4.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	70–72 °F (21–22 °C)	62–64 °F (17–18 °C)	200–250 ppm N	1–2 pinches	1 qt.   1 ppp   5–6 weeks 1.25 qt.   1 ppp   7–9 weeks 2.5 qt.   1 ppp   7–9 weeks 3 qt.   2–3 ppp   8–9 weeks 1.5 gal. HB   3 ppp   9–10 weeks 2 gal. HB   4 ppp   9–10 weeks

**Tech Tips:** Keep media pH in the mid 5.0's to avoid iron deficiency and tip chlorosis. Temperatures can be lowered three weeks after planting and especially towards the end of production to tone or hold the plant. High DLIs and cool finishing temperatures produce high-quality petunias. Use proper sanitation when pinching or shearing petunia. Petunia and other solanaceous crops are highly susceptible to the Tobacco Mosaic Virus (TMV), which can be easily transmitted by mechanical means.

Petunia **ITSY™** *Petunia hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.5–5.9 SME 2.3–2.8 mS/cm, PourThru EC: 3.5–4.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	70–72 °F (21–22 °C)	62–64 °F (17–18 °C)	200–250 ppm N	1–2 pinches	Large Packs   1 ppp   5 weeks 1 qt.   1 ppp   5–6 weeks 1 pt.   1 ppp   5–6 weeks 1.25 qt.   1 ppp   7–9 weeks 2.5 qt.   1 ppp   7–9 weeks 3 qt.   2–3 ppp   8–9 weeks 1.5 gal. HB   3 ppp   9–10 weeks 1.5 gal. pot   2–3 ppp   8–9 weeks 2 gal. HB   4 ppp   8–10 weeks

**Tech Tips:** Keep media pH down in the mid 5.0's to avoid iron deficiency and tip chlorosis. Temperatures can be lowered 3 weeks after planting and especially towards the end of production to tone or hold the plant. High DLIs and cool finishing temperatures produce high-quality petunias. Use proper sanitation when pinching or shearing petunia. Petunia and other solanaceous crops are highly susceptible to Tobacco Mosaic Virus (TMV), which can be easily transmitted by mechanical means.

Petunia **SANGUNA®** *Petunia hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.5–5.9 SME 2.3–2.8 mS/cm, PourThru EC: 3.5–4.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	64–66 °F (18–19 °C)	62–64 °F (17–18 °C)	200–250 ppm N	1–2 pinches	1 qt.   1 ppp   5–6 weeks 1.25 qt.   1 ppp   7–8 weeks 2.5 qt.   1 ppp   8–9 weeks 3 qt.   2–3 ppp   8–9 weeks 1.5 gal. HB   3 ppp   9–10 weeks 1.5 gal. pot   3–5 ppp   10–12 weeks 2 gal. HB   4 ppp   9–10 weeks

**Tech Tips:** Keep media pH down in the mid 5's to avoid iron deficiency and tip chlorosis. Temperatures can be lowered three weeks after planting and especially towards the end of production to tone or hold the plant. High DLIs and cool finishing temperatures produce high-quality petunias. Use proper sanitation when pinching or shearing petunia. Petunia and other solanaceous crops are highly susceptible to Tobacco Mosaic Virus (TMV), which can be easily transmitted by mechanical means.

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING	MPR
Aphids, Thrips, Budworms, Leafminers, Whiteflies	Botrytis, Powdery mildew, Viruses (TMV, TSWV)	Fun House Petunia has good vigor and will generally need chemical growth regulation. Sprays of B-Nine® WSG (2,500–5,000 ppm) or Sumagic® (20–30 ppm) can be used to control growth. A tank-mix spray of Florel® (350–500 ppm) + B-Nine® WSG (2,500 ppm) can also be used to control growth and improve branching early in production. Avoid using B-Nine® WSG on Potpourri late in finishing or flowers will be completely yellow and not bicolor patterned. Bonzi® drenches (1–2 ppm) are recommended to control growth of Potpourri. See our Fun House Potpourri Color Pattern Manipulation Guide for more information. A Bonzi® drench (2–4 ppm) can be given 3–4 weeks before finishing and results in toned, high-quality plants.	Fun House™ Amethyst Sunshine 70087744	M-V	E-M	9.5 hrs.
			Fun House™ Papaya 70091572	M-V	E	9.5 hrs.
			Fun House™ Peach Melba 70091571	M-V	E	9.5 hrs.
			Fun House™ Potpourri 70087729	M	M	11.5 hrs.

\*MPR is Minimum Photoperiod Recommendation.

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING	MPR
Aphids, Thrips, Budworms, Leafminers, Whiteflies	Botrytis, Powdery mildew, Viruses (TMV, TSWV)	B-Nine® WSG (2,500–5,000 ppm) or Sumagic® (20–30 ppm) can be used to control growth. A tank-mix spray of Florel® (350–500 ppm) + B-Nine® WSG (2,500 ppm) can also be used to control growth and improve branching early in production. A Bonzi® drench (2–3 ppm) can be given 3–4 weeks before finishing.	Itsy™ Magenta 70076437	C-M	E-M	10.5 hrs.
			Itsy™ White 70087763	C-M	E	11.5 hrs.

\*MPR is Minimum Photoperiod Recommendation.

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING	MPR
Aphids, Thrips, Budworms, Leafminers, Whiteflies	Botrytis, Powdery mildew, Viruses (TMV, TSWV)	B-Nine® WSG (2,500–5,000 ppm) or Sumagic® (20–30 ppm) can be used to control growth. A tank-mix spray of Florel® (350–500 ppm) + B-Nine® WSG (2,500 ppm) can also be used to control growth and improve branching early in production. A Bonzi® drench (2–4 ppm) can be given 3–4 weeks before finishing.	Sanguna® Banana Candy 70087740	M-V	M	11.5 hrs.
			Sanguna® Blue 70004044	M-V	E	10.5 hrs.
			Sanguna® Blue Vein 70004034	M-V	M	10.5 hrs.
			Sanguna® Burgundy 70004047	M-V	M	10.5 hrs.
			Sanguna® Coral 70076481	M-V	L	13.5 hrs.
			Sanguna® Deep Lavender Vein 70071592	M-V	E-M	10.5 hrs.
			Sanguna® Hot Rose 70061526	M-V	E	10.5 hrs.
			Sanguna® Light Blue 70055233	M-V	E-M	10.5 hrs.
			Sanguna® Lipstick 70066655	M-V	E-M	10.5 hrs.
			Sanguna® Mango Punch 70083297	M-V	E-M	11.5 hrs.
			Sanguna® Merlot 70076445	M-V	M-L	13.5 hrs.
			Sanguna® Picotee Punch 70071949	M	E	12 hrs.
			Sanguna® Purple 70076459	M	E-M	11.5 hrs.
			Sanguna® Radiant Blue 70053693	M-V	M-L	12 hrs.
			Sanguna® Red 70055241	C-M	E	11.5 hrs.
			Sanguna® Rose Vein 70066666	M-V	E-M	11 hrs.
			Sanguna® Star Rose 70076475	V	M-L	13.5 hrs.
			Sanguna® Sweet Pink 70051190	M-V	E	13.5 hrs.
			Sanguna® White 70076487	M	E	10.5 hrs.
			Sanguna® Yellow 70061525	M-V	E	11.5 hrs.

\*MPR is Minimum Photoperiod Recommendation.

Petunia **SANGUNA®/SANGUNA® MEGA** *Petunia hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.5–5.9 SME 2.3–2.8 mS/cm, PourThru EC: 3.5–4.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	64–66 °F (18–19 °C)	62–64 °F (17–18 °C)	200–250 ppm N	1–2 pinches	1 qt.   1 ppp   5–6 weeks 1.25 qt.   1 ppp   7–8 weeks 2.5 qt.   1 ppp   8–9 weeks 3 qt.   2–3 ppp   8–9 weeks 1.5 gal. HB   3 ppp   9–10 weeks 1.5 gal. pot   3–5 ppp   10–12 weeks 2 gal. HB   4 ppp   9–10 weeks

**Tech Tips:** Keep media pH down in the mid 5's to avoid iron deficiency and tip chlorosis. Temperatures can be lowered three weeks after planting and especially towards the end of production to tone or hold the plant. High DLIs and cool finishing temperatures produce high-quality petunias. Use proper sanitation when pinching or shearing petunia. Petunia and other solanaceous crops are highly susceptible to Tobacco Mosaic Virus (TMV), which can be easily transmitted by mechanical means.

Petunia **SANGUNA® PATIO** *Petunia hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.5–5.9 SME 2.3–2.8 mS/cm, PourThru EC: 3.5–4.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	70–72 °F (21–22 °C)	62–64 °F (17–18 °C)	200–250 ppm N	1–2 pinches	1 qt.   1 ppp   5–6 weeks 1.25 qt.   1 ppp   7–8 weeks 2.5 qt.   1 ppp   8–9 weeks 3 qt.   2–3 ppp   8–9 weeks 1.5 gal. HB   3 ppp   9–10 weeks 1.5 gal. pot   3–5 ppp   10–12 weeks 2 gal. HB   4 ppp   9–10 weeks

**Tech Tips:** Keep media pH down in the mid 5's to avoid iron deficiency and tip chlorosis. Temperatures can be lowered three weeks after planting and especially towards the end of production to tone or hold the plant. High DLIs and cool finishing temperatures produce high-quality petunias. Use proper sanitation when pinching or shearing petunia. Petunia and other solanaceous crops are highly susceptible to Tobacco Mosaic Virus (TMV), which can be easily transmitted by mechanical means.

Petunia **SHORTCAKE™** *Petunia hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.5–5.9 SME 2.3–2.8 mS/cm, PourThru EC: 3.5–4.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	70–72 °F (21–22 °C)	62–64 °F (17–18 °C)	200–250 ppm N	1–2 pinches	Packs   1 ppp   4–5 weeks Large Packs   1 ppp   4–5 weeks 1 qt.   1 ppp   5–6 weeks 1.25 qt.   1 ppp   7–8 weeks 2.5 qt.   1 ppp   8–9 weeks 3 qt.   2–3 ppp   8–9 weeks 1.5 gal. HB   3 ppp   9–10 weeks 1.5 gal. pot   3–5 ppp   10–12 weeks 2 gal. HB   4 ppp   9–10 weeks

**Tech Tips:** Keep media pH down in the mid 5.0's to avoid iron deficiency and tip chlorosis. Temperatures can be lowered three weeks after planting and especially towards the end of production to tone or hold the plant. High light and cool finishing temperatures produce high quality plants.

Salvia **VELOCITY™** *Salvia farinacea*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	72–74 °F (22–23 °C)	68–70 °F (20–21 °C)	200–250 ppm N	1 pinch	1 qt.   1 ppp   6–7 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1 ppp   9–10 weeks 3 qt.   3 ppp   9–10 weeks 1.5 gal. pot   4 ppp   10–11 weeks

**Tech Tips:** Velocity Salvia is a fast flowering Salvia farinacea type with beautiful dark blue flowers. One pinch in either propagation or shortly after transplant is all that is needed. Plants fill in quickly once they become established. High light intensity is vital for optimum flowering. Make sure to let media dry down to level 2 between irrigation cycles. Overly wet conditions can lead to fungal root rot.

Scaevola **BOMBAY®** *Scaevola aemula*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	76–78 °F (24–26 °C)	70–72 °F (21–22 °C)	200–250 ppm N	1 pinch	1 qt.   1 ppp   6–7 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1 ppp   9–10 weeks 3 qt.   2–3 ppp   9–10 weeks 1.5 gal. HB   4 ppp   10–11 weeks 1.5 gal. pot   3–4 ppp   10–11 weeks 2 gal. HB   5 ppp   10–11 weeks

**Tech Tips:** Bombay Scaevolias likes high light and warm temperatures during finishing. Low temperatures, especially early on, can lead to root rot and dark purple foliage. Plants can be pinched twice for baskets and larger containers. Florel® in finished production can significantly delay flowering and is not recommended. Late B-Nine® WSG sprays can significantly reduce flower size.

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING	MPR
Aphids, Thrips, Budworms, Leafminers, Whiteflies	Botrytis, Powdery mildew, Viruses (TMV, TSWV)	B-Nine® WSG (2,500–5,000 ppm) or Sumagic® (20–30 ppm) can be used to control growth. A tank-mix spray of Florel® (350–500 ppm) + B-Nine® WSG (2,500 ppm) can also be used to control growth and improve branching early in production. A Bonzi® drench (2–4 ppm) can be given 3–4 weeks before finishing.	Sanguna® Mega Pink Vein 70098954 Sanguna® Mega Purple 70071605 Sanguna® Mega Purple Vein 70091583	M-V M-V M-V	M-L E-M M	11.5 hrs. 10.5 hrs. 11.5 hrs.

\*MPR is Minimum Photoperiod Recommendation.

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING	MPR
Aphids, Thrips, Budworms, Leafminers, Whiteflies	Botrytis, Powdery mildew, Viruses (TMV, TSWV)	B-Nine® WSG (2,500–3,500 ppm) or Sumagic® (20 ppm) can be used to control growth. A tank-mix spray of Florel® (350–500 ppm) + B-Nine® WSG (2,500 ppm) can also be used to control growth and improve branching early in production. A Bonzi® drench (2–3 ppm) can be given 3–4 weeks before finishing and results in toned, high quality plants.	Sanguna® Patio Blue 70055260 Sanguna® Patio Melon Morn 70087710 Sanguna® Patio Pink Morn 70055259 Sanguna® Patio Purple 70051199 Sanguna® Patio Radiant Dark Blue 70071614 Sanguna® Patio Radiant Rose 70055263 Sanguna® Patio Radiant Violet 70091587 Sanguna® Patio Red 70051200 Sanguna® Patio White 70071621	C-M C-M C-M C-M C-M C-M M-V C-M C-M	E M E-M E-M M M-L M-L M M	10.5 hrs. 11.5 hrs. 10.5 hrs. 10.5 hrs. 10.5 hrs. 10.5 hrs. 13.5 hrs. 11.5 hrs. 12 hrs.

\*MPR is Minimum Photoperiod Recommendation.

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING	MPR
Aphids, Thrips, Budworms, Leafminers, Whiteflies	Botrytis, Powdery mildew, Viruses (TMV, TSWV)	B-Nine® WSG (2,500–3,500 ppm) or Sumagic® (15–20 ppm) can be used to control growth. A tank-mix spray of Florel® (350–500 ppm) + B-Nine® WSG (2,500 ppm) can also be used to control growth and improve branching early in production. Bonzi® drench (2 ppm) can be given 3–4 weeks before finishing.	Shortcake™ Blueberry 70076424 Shortcake™ Raspberry 70099023	C C	M-L M	10.5 hrs. 13.5 hrs.

\*MPR is Minimum Photoperiod Recommendation.

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Whiteflies	Botrytis, Fungal root rot	Cycocel® (1,000 ppm) + B-Nine® WSG (2,500 ppm). A drench of Bonzi® (0.5–1 ppm) can be applied to control growth and works well mid to late in the crop cycle.	Velocity™ Blue 70020736		M E

PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
Thrips, Whiteflies	Fungal root rot	B-Nine® WSG (1,500–2,500 ppm), Sumagic® (5–10 ppm), or Bonzi® (10–15 ppm) can be used.	Bombay® Compact Dark Blue 70076128 Bombay® Dark Blue 70020772 Bombay® Pink 70050923 Bombay® Platinum 70076129 Bombay® White 70020780 Bombay® Yellow 70077414	C M V C M M-V	E E E E E E

Swedish Ivy Variegated **PLECTRANTHUS** *Plectranthus coleoides*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative short day	70–72 °F (21–22 °C)	64–66 °F (18–19 °C)	125–175 ppm N	1 pinch	1 pt.   1 ppp   4–6 weeks 1 qt.   1 ppp   4–6 weeks 1.25 qt.   2–3 ppp   6–8 weeks 2.5 qt.   2–3 ppp   6–8 weeks

**Tech Tips:** To produce a more mounded-shaped plant, a second pinch during production (2 weeks after transplant) can help. To avoid root rots, Botrytis stem blight and edema allow the media to dry to level 2 as the plant matures. This plant serves as more of an accent to other annuals in larger combinations. Time and cooler temperatures will be required to either shape the plant for more of a mounded profile, or warmer temperatures and less pinching and plant growth regulators (PGRs) will create a more trailing habit.

Verbena **LANAI**® *Verbena hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	70–72 °F (21–22 °C)	62–64 °F (17–18 °C)	200–250 ppm N	1–2 pinches	1 qt.   1 ppp   6–7 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1 ppp   9–10 weeks 3 qt.   2–3 ppp   9–10 weeks 1.5 gal. HB   3–4 ppp   10–11 weeks 2 gal. HB   4–5 ppp   10–11 weeks

**Tech Tips:** Transplant liners on time since they can get quickly overgrown and root into other cells when left in plug trays for too long. A Bonzi® drench applied about 4 weeks before finishing is key to producing compact, mounded baskets and containers. Scout regularly for insects, especially Thrips (which can transmit Tomato Spotted Wilt Virus—TSWV). Don't let Verbenas get extremely dry since this can cause leaf chlorosis, leaf necrosis, and loss (shattering) of flowers. Verbenas can be grown on the cool side to help control growth.

Verbena **LANAI**® **COMPACT** *Verbena hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	70–72 °F (21–22 °C)	62–64 °F (17–18 °C)	200–250 ppm N	1–2 pinches	1 qt.   1 ppp   6–7 weeks 1.25 qt.   1 ppp   8–9 weeks 2.5 qt.   1–2 ppp   9–10 weeks 3 qt.   3 ppp   9–10 weeks 1.5 gal. HB   4 ppp   10–11 weeks 2 gal. HB   5 ppp   10–11 weeks

**Tech Tips:** Transplant liners on time since they can get quickly overgrown and root into other cells when left in plug trays for too long. A Bonzi® drench applied about 4 weeks before finishing is key to producing compact, mounded baskets and containers. Scout regularly for insects, especially Thrips (which can transmit Tomato Spotted Wilt Virus—TSWV). Don't let Verbenas get extremely dry since this can cause leaf chlorosis, leaf necrosis, and loss (shattering) of flowers. Verbenas can be grown on the cool side to help control growth.



# VEGETATIVE FINISHING

## Verbena **LANAI® UPRIGHT** *Verbena hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	70–72 °F (21–22 °C)	62–64 °F (17–18 °C)	200–250 ppm N	1–2 pinches	1 pt. I 1 ppp   6–7 weeks 1 qt. I 1 ppp   6–7 weeks 1.25 qt. I 1 ppp   8–9 weeks 2.5 qt. I 1 ppp   9–10 weeks 3 qt. I 2–3 ppp   9–10 weeks 1.5 gal. HB   3–4 ppp   10–11 weeks 2 gal. HB   4–5 ppp   10–11 weeks

**Tech Tips:** Transplant liners on time since they can get quickly overgrown and root into other cells when left in plug trays for too long. A Bonzi® drench applied about 4 weeks before finishing is key to producing compact, mounded baskets and containers. Scout regularly for insects, especially Thrips (which can transmit Tomato Spotted Wilt Virus—TSWV). Don't let Verbenas get extremely dry since this can cause leaf chlorosis, leaf necrosis, and loss (shattering) of flowers. Verbenas can be grown on the cool side to help control growth.

## Verbena **MAGELANA®** *Verbena hybrida*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Facultative long day	70–72 °F (21–22 °C)	62–64 °F (17–18 °C)	200–250 ppm N	1–2 pinches	1 qt. I 1 ppp   6–7 weeks 1.25 qt. I 1 ppp   8–9 weeks 2.5 qt. I 1–2 ppp   9–10 weeks 3 qt. I 3 ppp   9–10 weeks 1.5 gal. HB   4 ppp   10–11 weeks 2 gal. HB   5 ppp   10–11 weeks

**Tech Tips:** Transplant liners on time since they can get quickly overgrown and root into other cells when left in plug trays for too long. A Bonzi® drench applied about 4 weeks before finishing is key to producing compact, mounded baskets and containers. Scout regularly for insects, especially thrips (which can transmit Tomato Spotted Wilt Virus—TSWV). Don't let Verbenas get extremely dry since this can cause leaf chlorosis, leaf necrosis, and loss (shattering) of flowers. Verbenas can be grown on the cool side to help control growth.

## Vinca **NIRVANA® CASCADE** *Catharanthus roseus*

MEDIA pH/EC	LIGHT LEVEL	DAY LENGTH	DAY TEMP	NIGHT TEMP	FERTILIZER	PINCHES	FINISHING PROGRAM
pH: 5.8–6.2 SME 1.5–2.1 mS/cm, PourThru EC: 2.3–3.2 mS/cm	4,000–6,000 foot candles (800–1,200 micro mols)	Day neutral	76–78 °F (24–26 °C)	70–72 °F (21–22 °C)	200–250 ppm N	1 pinch	1 qt. I 1 ppp   6–7 weeks 1.25 qt. I 1 ppp   8–9 weeks 2.5 qt. I 1–2 ppp   9–10 weeks 3 qt. I 2–3 ppp   9–10 weeks 1.5 gal. HB   4 ppp   10–11 weeks 1.5 gal. pot   4 ppp   10–11 weeks 2 gal. HB   5 ppp   10–11 weeks

**Tech Tips:** Nirvana Cascade Vinca requires high light and warm temperatures for high-quality plants. Avoid over-watering and cool temperatures during production. With adequate heat and light, one early pinch is all that is needed to produce well-branched plants. Nirvana Cascade Vinca works well in baskets. Heritage® or Mural® spranches or drenches help prevent fungal basal stem rot after transplant.

	PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
	Aphids, Thrips, Leafminers, Whiteflies	Botrytis, Viruses (TSWV), Cercospora and Corynespora leaf spot (primarily in propagation), Powdery mildew (although Lanai Compact Verberna has been bred for Powdery mildew tolerance)	B-Nine® WSG (1,500-2,500 ppm) or Sumagic® (5–10 ppm) can be used to control growth. A tank-mix spray of Florel® (350–500 ppm) + B-Nine® WSG (1,500–2,500 ppm) can also be used to control growth and improve branching early in production. A Bonzi® drench (2–3 ppm) can be given 3–4 weeks before finishing.	Lanai® Upright Blue with Eye 70021299 Lanai® Upright Merlot with Eye 70083025 Lanai® Upright Peach 70083046 Lanai® Upright Pink with Eye 70051301 Lanai® Upright Purple with Eye 70083031 Lanai® Upright Red with Eye 70054681 Lanai® Upright Rose with Eye 70021298 Lanai® Upright Scarlet 70075889 Lanai® Upright Sky Blue 70083038 Lanai® Upright True Blue 70065887 Lanai® Upright Twister™ Purple 70065893 Lanai® Upright Twister™ Watercolor 70065890 Lanai® Upright White 70054676	M C-M C M M M M M C-M C-M C-M C-M M	M M M-L M-L M M M M M M E E E M

	PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
	Aphids, Thrips, Leafminers, Whiteflies	Botrytis, viruses (TSWV), Cercospora and Corynespora leaf spot (primarily in propagation), Powdery mildew (although Magelana Verberna has been bred for Powdery mildew tolerance)	B-Nine® WSG (1,500 ppm) or Sumagic® (5 ppm) can be used to control growth. A tank-mix spray of Florel® (350–500 ppm) + B-Nine® WSG (1,500 ppm) can also be used to control growth and improve branching early in production. A Bonzi® drench (1–2 ppm) can be given 3–4 weeks before finishing.	Magelana® Hot Rose 70004403 Magelana® Violet 70004394	C-M C-M	E-M M

	PESTS	DISEASES	FINISH PGRS	VARIETY	VIGOR	TIMING
	Thrips, Whiteflies	Fungal root, Basal stem rot	Cycocel® (750 ppm), B-Nine® WSG (2,500 ppm), or Cycocel® (750 ppm) + B-Nine® WSG (1,500–2,500 ppm) can be used depending on the growth rate and vigor of the plant. The Cycocel® + B-Nine® WSG combo spray will have a more growth regulating effect than either the Cycocel® or B-Nine® WSG spray alone. Sprays of A-Rest® (2 ppm) or Sumagic® (0.5 ppm) can also be applied if more growth control is needed.	Nirvana® Cascade Pink Splash 70018378	M	E





# Vegetative Spring Annuals Unrooted Cuttings (URCs)

KEY	STICKING PRIORITY
1	Highest Priority
5	Lowest Priority
Crops	No storage below 50 °F

CROPS	PRIORITY
Begonia	1
Grace™	1
Geranium Zonal	1
Americana®	1
Rocky Mountain™	1
Novelty Collection	1
Tango™	1
Geranium Interspecific	1
Caldera™	1
Calliope®	1
Calliope® Cascade	1
Caliente®	1
Mantra™	1
Mojo™	1
Moxie!™	1
Pretty Little™	1
Geranium Ivy	1

CROPS	PRIORITY
Euphorbia	1
Heliotrope	1
Ipomoea	1
Lantana	1
Begonia	2
Florencio™	2
Calocephalus	2
Dahlia	2
Diascia	2
Helichrysum	2
Impatiens–Double	2
Lobelia	2
Osteospermum	2
Pentas	2
Vinca	2
Bacopa	3

CROPS	PRIORITY
Calendula	3
Calibrachoa	3
Coleus	3
Dipladenia	3
New Guinea Impatiens	3
Petunia	3
Penstemon	3
Plectranthus	3
Salvia	3
Verbena	3
Angelonia	4
Argyranthemum	4
Bidens	4
Scaevola	4
Dorotheanthus	5
Lysimachia	5

## Tips to Manage Vegetative URC Deliveries

- Open the boxes immediately upon arrival. Select an area that is protected from direct sun to unpack and inspect the cuttings.
- It is important to stick the most sensitive products first to avoid added propagation stress. Crops such as vegetative geranium, euphorbia, lantana, and heliotrope should be stuck as soon as possible to reduce leaf yellowing, leaf drop, and tip burn.
- If cuttings must be held, store them in a cool environment with high (70%+) relative humidity.
  - In general, most vegetative annuals can be stored at 50 °F.
  - More specific storage temperatures by genera are required for long-term storage. For example, geranium cuttings can be stored at 36–50 °F, while impatiens require a 50 °F storage temperature.
  - Storage temperatures above 65–70 °F can result in increased respiration and cutting dehydration.
- It is recommended that you do not store any cuttings for more than three days.



# How to Read a Syngenta Tag

The diagram shows a Syngenta tag with the following components and labels:

- Variety code:** DA363
- Variety name:** Café Au Lait
- Product form:** URC 100
- Quantity:** 182900191
- Species:** Dahlia x Hybrida
- Ship week:** 10970348
- Delivery group number:** 14 11 100
- Box number:** 41
- Greenhouse location:** 14/1
- Country of origin:** GT
- Barcode:** 04013632003
- Greenhouse and bay number:** 14 11
- Bag number:** 00191

# Chrysal Alesco®

## More Blooms, More Sales

Crop quality protection from grower to retailer.

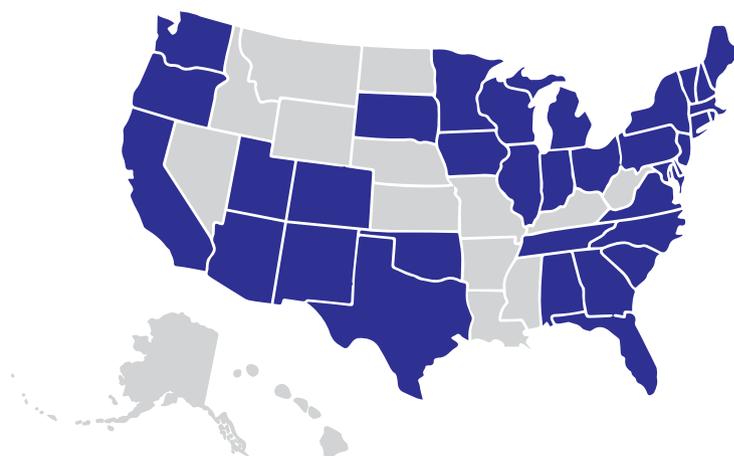
**Chrysal Alesco®** protects ethylene sensitive crops during shipping and at retail. The product is applied as a foliar spray 1–2 days before shipping to protect plants from postharvest damage caused by external sources of ethylene, temperature fluctuations, dark storage, and transport stress. Alesco® improves plant quality resulting in greater sell through and less shrinkage at retail.

### Cost

- One 200 ml bottle of Alesco® treats approximately 1 acre, costing less than 1 cent per pot!

### Benefits

- Reduces petal shatter, bud abortion, leaf yellowing, and extends flower longevity.
- Increases retail shelf life up to 3 weeks depending on variety and environmental conditions.
- Can be used to hold flowers on crops when shipping is delayed.



## Where to Buy

Alesco® can be purchased through Griffin, BFG, Winfield, and Southern Ag.

### U.S. Registrations

- |                   |                    |
|-------------------|--------------------|
| 1. Alabama        | 19. New Mexico     |
| 2. Arizona        | 20. New York       |
| 3. California     | 21. North Carolina |
| 4. Colorado       | 22. Ohio           |
| 5. Connecticut    | 23. Oklahoma       |
| 6. Delaware       | 24. Oregon         |
| 7. Florida        | 25. Pennsylvania   |
| 8. Georgia        | 26. Rhode Island   |
| 9. Illinois       | 27. South Carolina |
| 10. Indiana       | 28. South Dakota   |
| 11. Iowa          | 29. Tennessee      |
| 12. Maine         | 30. Texas          |
| 13. Maryland      | 31. Utah           |
| 14. Massachusetts | 32. Vermont        |
| 15. Michigan      | 33. Virginia       |
| 16. Minnesota     | 34. Washington     |
| 17. New Hampshire | 35. Wisconsin      |
| 18. New Jersey    |                    |

EPA registration #: 72992-1. Additional state registrations can be added depending on demand. Registration takes 4–8 weeks. Please contact Chrysal USA for more information.

Color on retail bench and high quality plants drive consumer purchases and sales. Commercial growers produce high-quality plants, but quality can quickly decline during post harvest. Shipping and retail conditions can be harsh on plants leading to significant plant losses. Provide top quality plants throughout the chain.

Research shows that consumer purchases are 40% higher when a potted plant display is looking colorful, healthy and fresh. Not surprisingly, customers are far more likely to recommend retail stores with high-quality attractive plants than those without. Now with Chrysal Alesco® there is an easy solution to improve shelf life in your store, reducing shrinkage and increasing sell through.

## How to Apply

Chrysal Alesco® can be easily mixed with water. The dosage is 1 ml per liter. One 200 ml bottle is premeasured for a 50-gallon tank mix (200 liters) which treats roughly 1 acre. Spray just prior to shipment (1 to 2 days). For optimal results, Alesco® can also be sprayed 8 to 14 days prior to shipment. It is advised to perform the treatment at the end of the day while avoiding direct sunlight. Spray solution can be used up to 3 days after mixing. Do not mix residual solutions with freshly made ones. Alesco® has a 4-hour Restricted Entry Interval. Always read and follow label instructions.

### Use Alesco® on ethylene sensitive crops.

- Seed Geraniums—BullsEye™, Maverick™, Pinto™ Premium, Ringo 2000™
- Vegetative Geraniums—Calliope®, Moxie!™, Americana®, Tango™, Mojo™
- Lobelia—Techno®, Techno® Upright
- Seed and Vegetative Petunias—Dekko™, Picobella™, Sanguna®
- Dahlia—Grandalia™
- Marigold—Antigua™, Inca II™
- Pansy—Delta™, Delta™ Premium, Colossus™
- Snapdragon—Snaptini™, Snaptastic™
- New Guinea Impatiens—Sonic®, Super Sonic®, Spectra™

## Results You Can See

Chrysal Alesco® sprayed 2 days before shipping protected plants during 3 days of simulated shipping from the negative effects of ethylene.

Untreated

Chrysal Alesco®



Dekko™ Sky Blue  
Petunia



Pinto™ Premium Orange  
Bicolor Geranium



Delta™ Premium Pure  
Golden Yellow Pansy

# CHRYSAI



# LAY THE FRAMEWORK WITH AN AGRONOMIC PROGRAM

Prevent the most common insects and diseases that affect spring bedding plants with a comprehensive rotation strategy.



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 **Ornamentals**

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®

# 2022

## January 2022

	S	M	T	W	TH	F	S
52							1
1	2	3	4	5	6	7	8
2	9	10	11	12	13	14	15
3	16	17	18	19	20	21	22
4	23	24	25	26	27	28	29
5	30	31					

## February 2022

	S	M	T	W	TH	F	S
5			1	2	3	4	5
6	6	7	8	9	10	11	12
7	13	14	15	16	17	18	19
8	20	21	22	23	24	25	26
9	27	28					

## March 2022

	S	M	T	W	TH	F	S
9			1	2	3	4	5
10	6	7	8	9	10	11	12
11	13	14	15	16	17	18	19
12	20	21	22	23	24	25	26
13	27	28	29	30	31		

## April 2022

	S	M	T	W	TH	F	S
13						1	2
14	3	4	5	6	7	8	9
15	10	11	12	13	14	15	16
16	17	18	19	20	21	22	23
17	24	25	26	27	28	29	30

## May 2022

	S	M	T	W	TH	F	S
18	1	2	3	4	5	6	7
19	8	9	10	11	12	13	14
20	15	16	17	18	19	20	21
21	22	23	24	25	26	27	28
22	29	30	31				

## June 2022

	S	M	T	W	TH	F	S
22			1	2	3	4	
23	5	6	7	8	9	10	11
24	12	13	14	15	16	17	18
25	19	20	21	22	23	24	25
26	26	27	28	29	30		

## July 2022

	S	M	T	W	TH	F	S
26						1	2
27	3	4	5	6	7	8	9
28	10	11	12	13	14	15	16
29	17	18	19	20	21	22	23
30	24	25	26	27	28	29	30
31	31						

## August 2022

	S	M	T	W	TH	F	S
31		1	2	3	4	5	6
32	7	8	9	10	11	12	13
33	14	15	16	17	18	19	20
34	21	22	23	24	25	26	27
35	28	29	30	31			

## September 2022

	S	M	T	W	TH	F	S
35					1	2	3
36	4	5	6	7	8	9	10
37	11	12	13	14	15	16	17
38	18	19	20	21	22	23	24
39	25	26	27	28	29	30	

## October 2022

	S	M	T	W	TH	F	S
39							1
40	2	3	4	5	6	7	8
41	9	10	11	12	13	14	15
42	16	17	18	19	20	21	22
43	23	24	25	26	27	28	29
44	30	31					

## November 2022

	S	M	T	W	TH	F	S
44			1	2	3	4	5
45	6	7	8	9	10	11	12
46	13	14	15	16	17	18	19
47	20	21	22	23	24	25	26
48	27	28	29	30			

## December 2022

	S	M	T	W	TH	F	S
48					1	2	3
49	4	5	6	7	8	9	10
50	11	12	13	14	15	16	17
51	18	19	20	21	22	23	24
52	25	26	27	28	29	30	31

Special Dates	2022
New Year's Day	Jan. 1
Martin Luther King Jr. Day	Jan. 17
Lunar New Year	Feb. 1
Valentine's Day	Feb. 14
Presidents Day	Feb. 21
St. Patrick's Day	Mar. 17
Palm Sunday	Apr. 10
Easter	Apr. 17
Earth Day	Apr. 22
Admin. Professionals Day	Apr. 27

Special Dates	2022
Cinco de Mayo	May 5
Mother's Day	May 8
Armed Forces Day	May 21
Victoria Day (Canada)	May 23
Memorial Day	May 30
Father's Day	June 19
Canada Day	July 1
Independence Day	July 4
Civic Holiday (Canada)	Aug. 1
Labor Day	Sept. 5

Special Dates	2022
Patriot Day	Sept. 11
Grandparents Day	Sept. 11
Thanksgiving (Canada)	Oct. 10
Sweetest Day	Oct. 15
Boss's Day	Oct. 16
Halloween	Oct. 31
Veteran's Day	Nov. 11
Thanksgiving Day	Nov. 24
Christmas Day	Dec. 25

# 2023

## January 2023

	S	M	T	W	TH	F	S
1	1	2	3	4	5	6	7
2	8	9	10	11	12	13	14
3	15	16	17	18	19	20	21
4	22	23	24	25	26	27	28
5	29	30	31				

## February 2023

	S	M	T	W	TH	F	S
5				1	2	3	4
6	5	6	7	8	9	10	11
7	12	13	14	15	16	17	18
8	19	20	21	22	23	24	25
9	26	27	28				

## March 2023

	S	M	T	W	TH	F	S
9				1	2	3	4
10	5	6	7	8	9	10	11
11	12	13	14	15	16	17	18
12	19	20	21	22	23	24	25
13	26	27	28	29	30	31	

## April 2023

	S	M	T	W	TH	F	S
13							1
14	2	3	4	5	6	7	8
15	9	10	11	12	13	14	15
16	16	17	18	19	20	21	22
17	23	24	25	26	27	28	29
18	30	31					

## May 2023

	S	M	T	W	TH	F	S
18		1	2	3	4	5	6
19	7	8	9	10	11	12	13
20	14	15	16	17	18	19	20
21	21	22	23	24	25	26	27
22	28	29	30	31			

## June 2023

	S	M	T	W	TH	F	S
22					1	2	3
23	4	5	6	7	8	9	10
24	11	12	13	14	15	16	17
25	18	19	20	21	22	23	24
26	25	26	27	28	29	30	

Special Dates	2023	Special Dates	2023
New Year's Day	Jan. 1	Earth Day	Apr. 22
Martin Luther King Jr. Day	Jan. 16	Administrative Professionals Day	Apr. 26
Lunar New Year	Jan. 22	Cinco de Mayo	May 5
Valentine's Day	Feb. 14	Mother's Day	May 14
Presidents Day	Feb. 20	Armed Forces Day	May 20
St. Patrick's Day	Mar. 17	Victoria Day (Canada)	May 22
Palm Sunday	Apr. 2	Memorial Day	May 29
Easter	Apr. 9		

# 2024



## July 2023

	S	M	T	W	TH	F	S
26							1
27	2	3	4	5	6	7	8
28	9	10	11	12	13	14	15
29	16	17	18	19	20	21	22
30 31	23 30	24 31	25	26	27	28	29

## August 2023

	S	M	T	W	TH	F	S
31			1	2	3	4	5
32	6	7	8	9	10	11	12
33	13	14	15	16	17	18	19
34	20	21	22	23	24	25	26
35	27	28	29	30	31		

## September 2023

	S	M	T	W	TH	F	S
35						1	2
36	3	4	5	6	7	8	9
37	10	11	12	13	14	15	16
38	17	18	19	20	21	22	23
39	24	25	26	27	28	29	30

## October 2023

	S	M	T	W	TH	F	S
40	1	2	3	4	5	6	7
41	8	9	10	11	12	13	14
42	15	16	17	18	19	20	21
43	22	23	24	25	26	27	28
44	29	30	31				

## November 2023

	S	M	T	W	TH	F	S
44				1	2	3	4
45	5	6	7	8	9	10	11
46	12	13	14	15	16	17	18
47	19	20	21	22	23	24	25
48	26	27	28	29	30		

## December 2023

	S	M	T	W	TH	F	S
48						1	2
49	3	4	5	6	7	8	9
50	10	11	12	13	14	15	16
51	17	18	19	20	21	22	23
52 1	24 31	25	26	27	28	29	30

Special Dates	2023
Father's Day	June 18
Canada Day	July 1
Independence Day	July 4
Civic Holiday (Canada)	Aug. 7
Labor Day	Sept. 4
Grandparents Day	Sept. 10
Patriot Day	Sept. 11

Special Dates	2023
Thanksgiving (Canada)	Oct. 9
Boss's Day	Oct. 16
Sweetest Day	Oct. 21
Halloween	Oct. 31
Veteran's Day	Nov. 11
Thanksgiving Day	Nov. 23
Christmas Day	Dec. 25

## January 2024

	S	M	T	W	TH	F	S
1		1	2	3	4	5	6
2	7	8	9	10	11	12	13
3	14	15	16	17	18	19	20
4	21	22	23	24	25	26	27
5	28	29	30	31			

## February 2024

	S	M	T	W	TH	F	S
5					1	2	3
6	4	5	6	7	8	9	10
7	11	12	13	14	15	16	17
8	18	19	20	21	22	23	24
9	25	26	27	28	29		

## March 2024

	S	M	T	W	TH	F	S
9						1	2
10	3	4	5	6	7	8	9
11	10	11	12	13	14	15	16
12	17	18	19	20	21	22	23
13 14	24 31	25	26	27	28	29	30

## April 2024

	S	M	T	W	TH	F	S
14		1	2	3	4	5	6
15	7	8	9	10	11	12	13
16	14	15	16	17	18	19	20
17	21	22	23	24	25	26	27
18	28	29	30				

## May 2024

	S	M	T	W	TH	F	S
18				1	2	3	4
19	5	6	7	8	9	10	11
20	12	13	14	15	16	17	18
21	19	20	21	22	23	24	25
22	26	27	28	29	30	31	

## June 2024

	S	M	T	W	TH	F	S
22						1	
23	2	3	4	5	6	7	8
24	10	11	12	13	14	15	
25	16	17	18	19	20	21	22
26 27	23 30	24	25	26	27	28	29

Special Dates	2024
New Year's Day	Jan. 1
Martin Luther King Jr. Day	Jan. 15
Lunar New Year	Feb. 10
Valentine's Day	Feb. 14
Presidents Day	Feb. 19
St. Patrick's Day	Mar. 17
Palm Sunday	Mar. 24
Easter	Mar. 31
Earth Day	Apr. 22
Admin. Professionals Day	Apr. 24

## July 2024

	S	M	T	W	TH	F	S
27		1	2	3	4	5	6
28	7	8	9	10	11	12	13
29	14	15	16	17	18	19	20
30	21	22	23	24	25	26	27
31	28	29	30	31			

## August 2024

	S	M	T	W	TH	F	S
31					1	2	3
32	4	5	6	7	8	9	10
33	11	12	13	14	15	16	17
34	18	19	20	21	22	23	24
35	25	26	27	28	29	30	31

## September 2024

	S	M	T	W	TH	F	S
36	1	2	3	4	5	6	7
37	8	9	10	11	12	13	14
38	15	16	17	18	19	20	21
39	22	23	24	25	26	27	28
40	29	30					

## October 2024

	S	M	T	W	TH	F	S
40			1	2	3	4	5
41	6	7	8	9	10	11	12
42	13	14	15	16	17	18	19
43	20	21	22	23	24	25	26
44	27	28	29	30	31		

## November 2024

	S	M	T	W	TH	F	S
44						1	2
45	3	4	5	6	7	8	9
46	10	11	12	13	14	15	16
47	17	18	19	20	21	22	23
48	24	25	26	27	28	29	30

## December 2024

	S	M	T	W	TH	F	S
49	1	2	3	4	5	6	7
50	8	9	10	11	12	13	14
51	15	16	17	18	19	20	21
52	22	23	24	25	26	27	28
1	29	30	31				

Special Dates	2024
Cinco de Mayo	May 5
Mother's Day	May 12
Armed Forces Day	May 18
Victoria Day (Canada)	May 20
Memorial Day	May 27
Father's Day	June 16
Canada Day	July 1
Independence Day	July 4
Civic Holiday (Canada)	Aug. 5
Labor Day	Sept. 2

Special Dates	2024
Grandparents Day	Sept. 8
Patriot Day	Sept. 11
Thanksgiving (Canada)	Oct. 14
Boss's Day	Oct. 16
Sweetest Day	Oct. 19
Halloween	Oct. 31
Veteran's Day	Nov. 11
Thanksgiving Day	Nov. 28
Christmas Day	Dec. 25



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FRONT PHOTO:  
Imara® XDR Rose Impatiens

BACK PHOTO:  
Calliope® Medium Dark Pink Interspecific Geranium

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