Welcome to the new PanAmerican Seed® and Kieft Seed fresh, on-trend collection.

We are proud to offer you a particularly strong and diverse lineup. Discover flowers and vegetables to strengthen your current program. Be inspired to branch out with a new-to-you class. And perhaps 2019 is the year you’ll take a leap in an all-new direction!

Of special note: 20 more exciting selling opportunities in our Plug & Play combo program, including first-ever Cool Wave® cool-season selections. Five regal colours in the HUGE-bloomed Corona dianthus series. Big Blue salvia...this name says it all. A big-time upgrade to essential Easy Wave® Red spreading petunia. A pepper to fire up your veggie sales, Habanero Primero Red.

For over 60 years, PanAmerican Seed has kept a laser-sharp focus on reliability, consistency and creativity...from our innovative products to unmatched seed quality, well-researched culture and notable marketing programs. We invite you to grow and sell tomorrow’s products for today’s marketplace: durable, beautiful and profitable.

Enjoy!
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plug & play combos

All-seed. All-proven. All you need.

20 on-trend Plug & Play newcomers expand the lineup of easy, fresh and fun combos that deliver. We’re excited to offer first-ever cool-season combos featuring Cool Wave® pansies. And to answer the big demand for heat lovers, you’ll also find all-new warm-season combos perfect for Summer.

Plug & Play combos let you move seamlessly from plant to perfect. Every Plug & Play seed combo is tested over and over to prove that it delivers unstoppable performance from bench to store to garden. Trialing in saleable sizes begins in our research greenhouses and in our outdoor Summer containers. But we don’t stop there – every potential introduction heads out to commercial greenhouses and to real-life gardens. It’s only when our customers give the combos they’ve seen in action two thumbs up that they move into the lineup. All 80 Plug & Play combos promise easy, economical production; big retail shows and gardener-satisfying results.

Find all the program details at panamseed.com/PlugandPlay
NEW FLOWER DATE
Cool Wave Golden Yellow & Cool Wave Purple

Revolutionary Fuseables Precision Multi-Pellets...
flow right through your seeder...

NEW SUNNY SKIES
Cool Wave Blue Skies & Cool Wave Golden Yellow

transform into “easy-sow, easy-grow” plugs...
to grow great-looking, balanced combos that sell!

PanAmerican Seed.
Find product & growing info at panamseed.com
**NEW OCEAN BREEZES**
Cool Wave Blue Skies, Cool Wave Purple & Cool Wave White

- **8 in./20 cm** 3
- **10 in./25 cm** 3
- **12 in./30 cm** 3

**Transplant to finish: 7-8 weeks**

<table>
<thead>
<tr>
<th>Variety</th>
<th>Seeds per Cell</th>
<th>Plug Size</th>
<th>Plants per Pot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cool Wave Blue Skies Pansy</td>
<td>1</td>
<td>128</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Cool Wave Purple Pansy</td>
<td>1</td>
<td>128</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Cool Wave White Pansy</td>
<td>1</td>
<td>128</td>
<td>1 2 3</td>
</tr>
</tbody>
</table>

Grow cool for best finish.

**NEW ON A CLEAR DAY**
Cool Wave Purple, Cool Wave White & Cool Wave Golden Yellow

- **8 in./20 cm** 3
- **10 in./25 cm** 3
- **12 in./30 cm** 3

**Transplant to finish: 7-8 weeks**

<table>
<thead>
<tr>
<th>Variety</th>
<th>Seeds per Cell</th>
<th>Plug Size</th>
<th>Plants per Pot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cool Wave Purple Pansy</td>
<td>1</td>
<td>128</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Cool Wave White Pansy</td>
<td>1</td>
<td>128</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Cool Wave Golden Yellow Pansy</td>
<td>1</td>
<td>128</td>
<td>1 2 3</td>
</tr>
</tbody>
</table>

Grow cool for best finish.

Request your Product Information Guide for full culture details.
### NEW PURPLE SUNSET
Cool Wave Purple, Cool Wave Golden Yellow & Cool Wave Blue Skies

<table>
<thead>
<tr>
<th>Plug Size</th>
<th>Plants per Pot 8 in./20 cm</th>
<th>Plants per Pot 10 in./25 cm</th>
<th>Plants per Pot 12 in./30 cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 in./20 cm</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10 in./25 cm</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>12 in./30 cm</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Grow cool for best finish.

### NEW YELLOW HEAVEN
Cool Wave Lemon Improved, Cool Wave White & Cool Wave Golden Yellow

<table>
<thead>
<tr>
<th>Plug Size</th>
<th>Plants per Pot 8 in./20 cm</th>
<th>Plants per Pot 10 in./25 cm</th>
<th>Plants per Pot 12 in./30 cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 in./20 cm</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10 in./25 cm</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>12 in./30 cm</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Grow cool for best finish.

NOTE: Individual varieties sold separately.
key grower tips

Start out right!

The first step in defining the Plug & Play combination pot starts on the planting line. Follow the recipes and planting diagrams for best success. Plug size, number and planting position is key.

**PLUG SIZE:** Every Plug & Play recipe takes each ingredient’s growth rate and flower timing into consideration. Larger inputs are used when necessary to obtain the best balance of growth and flowering.

**PLUG NUMBER:** It is important to use the right ratio of inputs, just as with vegetative intermingled combos. The correct number of plugs per component leads to the best balanced combination finish. Note that there is an additional input needed in the center of the pot in some mixes in this collection.

**PLUG POSITIONING:** Plant your plugs halfway between the middle of the pot and the rim. A tight circle of plugs is key to getting the intermingled look desired in a multi-plant combination. Planting at the rim results in a “clumpy,” less intermingled look. All varieties in each Plug & Play combo are transplanted at the same time in order to finish at the same time. Sow times may vary.

**NOTE:** In multi-species combos, shear Kabloom plugs before transplanting.

Easy does it!

Next up is PGR application, specifically for multi-species combinations. We recommend the following for the best toned and fully mixed multi-species combination finish.

**PGRS:** Daminozide spray at 2,500 to 5,000 ppm (depending on your conditions) 1 week after transplant, followed by a second daminozide spray 7 to 10 days later. Daminozide will allow the axils to expand, versus a paclobutrazol treatment which can lock up axillary branching. The result is controlled growth early, while still allowing good branching for the combination’s development.

When plants grow to the rim and begin to fill the pot, switch to a repeated low rate paclobutrazol drench at 1 to 2 ppm (depending on your conditions). Go easy – too high a rate for the paclobutrazol drench can stop the non-petunia components and lead to a bad mix result.

**NOTE:** In multi-species combos, shear Kabloom plugs before transplanting.

---

8 in./20 cm 10 in./25 cm

1. Transplant
2. After 3 weeks
3. After 6 weeks

---

8 in./20 cm 10 in./25 cm

1. Transplant
2. After 3 weeks
3. After 6 weeks

Rates are based on trials in the northern U.S.
single-species plug & play combos

**NEW AIRBRUSH'D**
Tattoo Raspberry, Titan Polka Dot & Titan Rose Halo Vinca

- Tattoo Raspberry Vinca
- Titan Polka Dot Vinca
- Titan Rose Halo Vinca

Transplant to finish: 6-7 weeks

<table>
<thead>
<tr>
<th>Variety</th>
<th>Seeds per Cell</th>
<th>Plug Size</th>
<th>Plants per Pot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tattoo Raspberry Vinca</td>
<td>1</td>
<td>288</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Titan Polka Dot Vinca</td>
<td>1</td>
<td>288</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Titan Rose Halo Vinca</td>
<td>1</td>
<td>288</td>
<td>1 2 3</td>
</tr>
</tbody>
</table>

**NEW BERRY BURST**
Tattoo Black Cherry, Titan Really Red & Titan Rose Halo Vinca

- Tattoo Black Cherry Vinca
- Titan Really Red Vinca
- Titan Rose Halo Vinca

Transplant to finish: 6-7 weeks

<table>
<thead>
<tr>
<th>Variety</th>
<th>Seeds per Cell</th>
<th>Plug Size</th>
<th>Plants per Pot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tattoo Black Cherry Vinca</td>
<td>1</td>
<td>288</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Titan Really Red Vinca</td>
<td>1</td>
<td>288</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Titan Rose Halo Vinca</td>
<td>1</td>
<td>288</td>
<td>1 2 3</td>
</tr>
</tbody>
</table>

NOTE: Individual varieties sold separately.

Find product & growing info at panamseed.com
NEW SUMMER SMOOTHIE
Valiant Orchid, Valiant Pure White & Valiant Burgundy Vinca

- Lucky Star White Pentas
- Lucky Star Dark Red Pentas

8 in./20 cm
10 in./25 cm
12 in./30 cm

Transplant to finish: 6-7 weeks

<table>
<thead>
<tr>
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<th>Plug Size</th>
<th>Plants per Pot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valiant Orchid Vinca</td>
<td>288</td>
<td>1</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Valiant Pure White Vinca</td>
<td>288</td>
<td>1</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Valiant Burgundy Vinca</td>
<td>288</td>
<td>1</td>
<td>1 2 3</td>
</tr>
</tbody>
</table>

NEW CHRISTMAS IN JULY
Lucky Star White & Lucky Star Dark Red Pentas

- Lucky Star White Pentas
- Lucky Star Dark Red Pentas

8 in./20 cm
10 in./25 cm
12 in./30 cm

Transplant to finish: 8 weeks

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>Lucky Star White Pentas</td>
<td>288</td>
<td>2</td>
<td>3 4</td>
</tr>
<tr>
<td>Lucky Star Dark Red Pentas</td>
<td>288</td>
<td>2</td>
<td>3 4</td>
</tr>
</tbody>
</table>
single-species plug & play combos

**NEW SHINING STARS**
Lucky Star Lavender, Lucky Star Deep Pink & Lucky Star White Pentas

- 8 in./20 cm
- 10 in./25 cm
- 12 in./30 cm

Transplant to finish: 8 weeks

<table>
<thead>
<tr>
<th>Variety</th>
<th>Seeds per Cell</th>
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<th>Plants per Pot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lucky Star Lavender Pentas</td>
<td>1</td>
<td>288</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Lucky Star Deep Pink Pentas</td>
<td>1</td>
<td>288</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Lucky Star White Pentas</td>
<td>1</td>
<td>288</td>
<td>1 2 3</td>
</tr>
</tbody>
</table>

**NEW STAR BRIGHT**
Lucky Star Dark Red, Lucky Star Deep Pink & Lucky Star Lavender Pentas

- 8 in./20 cm
- 10 in./25 cm
- 12 in./30 cm

Transplant to finish: 8 weeks

<table>
<thead>
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<th>Plants per Pot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lucky Star Dark Red Pentas</td>
<td>1</td>
<td>288</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Lucky Star Deep Pink Pentas</td>
<td>1</td>
<td>288</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Lucky Star Lavender Pentas</td>
<td>1</td>
<td>288</td>
<td>1 2 3</td>
</tr>
</tbody>
</table>

NOTE: Individual varieties sold separately.
NEW BERRY SPARKLER
Serena Purple Angelonia, Titan Punch Vinca & Purple Flash Ornamental Pepper

<table>
<thead>
<tr>
<th></th>
<th>Seeds per Cell</th>
<th>Plug Size</th>
<th>Plants per Pot</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1</td>
<td>128</td>
<td>1 2</td>
</tr>
<tr>
<td>B</td>
<td>1</td>
<td>288</td>
<td>1 2</td>
</tr>
<tr>
<td>C</td>
<td>1</td>
<td>105</td>
<td>1 1</td>
</tr>
</tbody>
</table>

10 in./25 cm
12 in./30 cm

Transplant to finish: 7 weeks

NEW CHERRY JAM
Chocolate Covered Cherry Premium Sun Coleus, Valiant Punch Vinca & Purple Prince Alternanthera

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1</td>
<td>288</td>
<td>1 1</td>
</tr>
<tr>
<td>B</td>
<td>1</td>
<td>288</td>
<td>1 2</td>
</tr>
<tr>
<td>C</td>
<td>1</td>
<td>288</td>
<td>1 2</td>
</tr>
</tbody>
</table>

10 in./25 cm
12 in./30 cm

Transplant to finish: 6 weeks

Treat Alternanthera plugs with 0.5 ppm paclobutrazol drench 1 week before transplant.
plug & play combos

**NEW INK'D**
Tattoo Raspberry Vinca & Serena Blue Angelonia

- 8 in./20 cm
- 10 in./25 cm
- 12 in./30 cm

Transplant to finish: 6-7 weeks

<table>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>8 in./20 cm</td>
</tr>
<tr>
<td>Tattoo Raspberry Vinca</td>
<td>1</td>
<td>288</td>
<td>2</td>
</tr>
<tr>
<td>Serena Blue Angelonia</td>
<td>1</td>
<td>128</td>
<td>2</td>
</tr>
</tbody>
</table>

**NEW PEACH MELBA PARFAIT**
Valiant Apricot Vinca, Serenita® Pink Angelonia & Silver Falls Dichondra

- 10 in./25 cm
- 12 in./30 cm

Transplant to finish: 7 weeks

<table>
<thead>
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<th>Plants per Pot</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>10 in./25 cm</td>
</tr>
<tr>
<td>Valiant Apricot Vinca</td>
<td>1</td>
<td>288</td>
<td>1</td>
</tr>
<tr>
<td>Serenita Pink Angelonia</td>
<td>1</td>
<td>128</td>
<td>1</td>
</tr>
<tr>
<td>Silver Falls Dichondra</td>
<td>3</td>
<td>288</td>
<td>1</td>
</tr>
</tbody>
</table>

NOTE: Individual varieties sold separately.
**NEW SEASIDE DELIGHT**  
Valiant Orchid Vinca & Serena Blue Angelonia

- **8 in./20 cm**
- **10 in./25 cm**
- **12 in./30 cm**

Transplant to finish: 6-7 weeks

<table>
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<th>Plug Size</th>
<th>Plants per Pot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valiant Orchid Vinca</td>
<td>1</td>
<td>288</td>
<td>2  3  4</td>
</tr>
<tr>
<td>Serena Blue Angelonia</td>
<td>1</td>
<td>128</td>
<td>2  3  4</td>
</tr>
</tbody>
</table>

**NEW SUMMER CANDY**  
Titan Really Red Vinca & Serena White Angelonia

- **8 in./20 cm**
- **10 in./25 cm**
- **12 in./30 cm**

Transplant to finish: 6 weeks

<table>
<thead>
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<th>Plants per Pot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Titan Really Red Vinca</td>
<td>1</td>
<td>288</td>
<td>2  3  4</td>
</tr>
<tr>
<td>Serena White Angelonia</td>
<td>1</td>
<td>128</td>
<td>2  3  4</td>
</tr>
</tbody>
</table>
plug & play combos

NEW SUN JEWELS
Zahara Yellow Zinnia, Valiant Pure White Vinca & Purple Prince Alternanthera

10 in./25 cm

12 in./30 cm

Transplant to finish: 6-7 weeks

<table>
<thead>
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<th>Variety</th>
<th>Seeds per Cell</th>
<th>Plug Size</th>
<th>Plants per Pot</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Zahara Yellow Zinnia</td>
<td>1</td>
<td>128</td>
<td>1</td>
</tr>
<tr>
<td>B: Valiant Pure White Vinca</td>
<td>1</td>
<td>288</td>
<td>1</td>
</tr>
<tr>
<td>C: Purple Prince Alternanthera</td>
<td>1</td>
<td>288</td>
<td>1</td>
</tr>
</tbody>
</table>

Treat Alternanthera plugs with 0.5 ppm paclobutrazol drench 1 week before transplant.

NEW YELLOW TAMBOURINE
Serena Blue Angelonia, Zahara Yellow Zinnia & Purple Flash Ornamental Pepper

10 in./25 cm

12 in./30 cm

Transplant to finish: 7 weeks

<table>
<thead>
<tr>
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<th>Plants per Pot</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Serena Blue Angelonia</td>
<td>1</td>
<td>128</td>
<td>1</td>
</tr>
<tr>
<td>B: Zahara Yellow Zinnia</td>
<td>1</td>
<td>288</td>
<td>1</td>
</tr>
<tr>
<td>C: Purple Flash Ornamental Pepper</td>
<td>1</td>
<td>288</td>
<td>1</td>
</tr>
</tbody>
</table>

NOTE: Individual varieties sold separately.
annuals

Kabloom Denim

CALIBRACHOA
Calibrachoa x hybrida

Kabloom® Series F1

Height: 8 to 12 in./20 to 30 cm
Spread: 10 to 14 in./25 to 36 cm
Seed supplied as: Pelleted
Plug crop time: 5 to 8 weeks
Transplant to finish: 7 to 11 weeks

- First-of-its-kind Kabloom is the ideal input for grower choice premium quarts. Also well-suited to 4 to 6-in./10 to 15-cm pots, hanging baskets and mixed combos.
- Easy-sow pelleted seed makes it easy to order and ready to ship, fits right into mechanized production and assures easy inventory management.
- Bushy, trailing plants show off abundant, bright blooms in core solid colours.

New Denim Flat, mounded plants produce flowers with darker blue tones under lower light and cooler conditions; the blooms age to silver-blue under higher light and warmer conditions. Optimal daylength for best flowering is 11 hours. The most prostrate in the series, with a height of 6 to 10 in./15 to 25 cm.

Ease and efficiency, at your fingertips!

The first seed calibrachoa, Kabloom lets you move beyond URCs and liners, and gives you peace of mind in this very popular class. You can schedule based on your needs, not on cutting availability dates. You can still receive product when the weather holds up vegetative shipments. Best of all...grown side by side with vegetative varieties, it’s impossible to tell the difference.
Megawatt series F1

Height: 20 to 28 in./51 to 71 cm
Spread: 16 to 24 in./41 to 61 cm
Seed supplied as: Pelleted
Plug crop time: 7 to 8 weeks
Transplant to finish: 7 to 9 weeks

- Striking, non-stop flowers keep plants covered in huge colour from Spring through Autumn...even in heat and drought.
- Sturdy flower stems hold flowers above the foliage for superior show versus others.
- Shows well at retail and perfect for landscapes, baskets, big tubs and borders.

New Pink Green Leaf
- A “must-have” colour for retail programs. More uniform than the competition, with similar or earlier timing.

New Red Green Leaf Improved
- Upgraded to match the series for timing and plant habit.

New Rose Green Leaf Improved
- Upgraded to match the series for timing and plant habit.

Megawatt offers even more opportunities for 2019 with another colour addition plus two key timing/habit improvements. This fresh, high-energy begonia option has quickly proven itself in the marketplace with great timing benefits, one-of-a-kind varieties, ultimate garden power and more. These bigger-than-life hybrids let you offer the earliest colour to early-bird gardeners.

Look to PanAmerican Seed for your complete interspecific program, starting with fastest-to-market BabyWing® for day-neutral growing...

Megawatt for big Spring sales...and main-season Dragon Wing® to round out the season.

MEGAsize + MEGAcolour = MEGAsales!

Begonia interspecific
CELOSIA
Celosia plumosa
First Flame Series
Height: 10 to 14 in./25 to 36 cm
Spread: 10 to 16 in./25 to 41 cm
Seed supplied as: Coated
Plug crop time: 3 to 4 weeks
Transplant to finish: 8 to 10 weeks
• Excellent, brightly colored Summer crop finishes 10 to 14 days earlier than competing varieties to reduce production costs.
• Mid-height series branches like a regular C. plumosa to produce full blooms.
• Ideal for Asian and southern markets.
New Purple Unique colour to this type of celosia. About 1 week earlier to flower, with a thicker plume compared to First Flame Red, Yellow and Scarlet. Non-fading in high light/high heat. NOTE: Not included in First Flame Mixture.

COSMOS
Cosmos bipinnatus
Sonata Series
Height: 24 in./61 cm
Spread: 12 to 14 in./30 to 36 cm
Seed supplied as: Raw
Plug crop time: 4 to 5 weeks
Transplant to finish: 6 to 7 weeks
• The best-performing garden cosmos.
• Extremely easy to grow, professional growers choose Sonata because of its capabilities for blooming in the pack and pot.
• Recommended for 5 to 6-in./13 to 15-cm pots.
New Purple Shades Unique variety shows off shades of purple that hold colour well in high light.

ORNAMENTAL CORN
Zea mays
New Pink Zebra
Height: 48 to 60 in./122 to 152 cm
Spread: 12 to 18 in./30 to 46 cm
Seed supplied as: Raw
Plug crop time: 1 to 2 weeks
Transplant to finish: Late Spring 4 to 6 weeks, Autumn 3 to 5 weeks
• Grow late Summer and Autumn sales with the only dwarf variegated ornamental corn on the market. Home gardeners will love the dramatic colour and texture in their late-season mixed planters and gardens, and fresh market farmers will captivate their customers, too!
• Green and white striped foliage adds showy purples/red/pinks in cool nights/long days.
• Better tillering in Autumn than other ornamental corns – each stalk produces many small ears with purple kernels and tassels.
• Great for quarts and gallons, with fast finish from plugs or direct sown.

Request your Product Information Guide for full culture details
CYCLAMEN Cyclamen persicum

Dreamscape Series F1
Height: 6 to 9 in./15 to 23 cm
Spread: 9 to 13 in./23 to 33 cm
Seed supplied as: Raw
Plug crop time: 8 to 9 weeks
Transplant to finish: 19 to 20 weeks

- Dreamscape varieties are specially bred and selected to deliver the best outdoor performance of any cyclamen.
- Pro landscapers and home gardeners alike can now confidently plant cyclamen in-ground and count on better, longer performance.
- Sow all colours at the same time to ship and sell together.

**New Deep Burgundy** Unique colour for the outdoor cyclamen market.

**New Deep Rose** Unique colour for outdoor and landscape use. The model for the series, Deep Rose is outstanding in landscape and garden beds.

**New Purple** Deep, intense purple colour.

**New Salmon Eye** Large, dark salmon flowers with very nice eye, on a slightly larger plant than the other Dreamscape varieties.

**New White** The best white cyclamen for outdoor performance.

**New Dark Flamed Mixture** Well-balanced mix of dark Flamed colours.

**Find product & growing info at panamseed.com**
Crowned with huge flower power

Wow ’em with the biggest blooms of any dianthus of this type…exceptional flower form…and a palette of showstopping colour choices. Corona adds a regal touch to cool-season landscapes, gardens and patio planters.

DIANTHUS

*Dianthus chinensis*

**Corona Series F1**

**Height:** 8 to 10 in./20 to 25 cm  
**Spread:** 8 to 10 in./20 to 25 cm  
**Seed supplied as:** Pelleted  
**Plug crop time:** 4 to 6 weeks  
**Transplant to finish:** 6 to 8 weeks

- Corona features larger blooms than the competition, plus uniform flowering time and habit.  
- Produces multiple flowers on a compact, mounded plant.  
- Gives its best performance in cool weather, making it great planted along with other cool-season annuals such as pansies.

**New Cherry Red** Solid cherry colour; some flowers show a darker red centre.

**New Rose** Solid rose colour, with some blooms showing a darker centre.

**New Salmon Red Eye** Consistent bicolour pattern of salmon/coral with darker red centre.

**New Strawberry** Variable pattern in coral/salmon shades. Some flowers are solid coral, some are coral bicolour and some have a darker coral picotee against a lighter background.

**New White** Clean, clear white.
**DIANTHUS**
*Dianthus chinensis x barbatus*

**Floral Lace Series F1**
- **Height:** 8 to 10 in./20 to 25 cm
- **Spread:** 8 in./20 cm
- **Seed supplied as:** Raw, Pelleted
- **Plug crop time:** 4 to 5 weeks
- **Transplant to finish:** 4 to 5 weeks

- Early flowering with the largest blooms of any *D. chinensis x barbatus* - up to 1.5 in./4 cm across.
- Performs well in gardens under tough conditions as an annual or biennial.
- Good for high-density Spring and Autumn pack or small pot programs.

**New Picotee Improved**
More uniform habit, less stretch and 1 week earlier to flower than original Picotee. Colour pattern is not as distinct a traditional “picotee,” but delivers a nice novelty white and rose-red bicolor.

**New Purple Improved**
More controlled habit and richer colour. Replaces both Purple and Violet to offer the best genetic in this important colour class.

**New Mixture Improved**
Streamlined mix includes the most uniform, brightest colours in the series for better uniformity for the finished grower.

**FUSEABLES**
See Plug & Play, p. 5

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**NEW**
- Corona Cherry Red
- Floral Lace Mixture Improved
- Floral Lace Picotee Improved
- Floral Lace Purple Improved
- Corona Rose
- Corona Strawberry R: Competing variety
**Bonanza Series**

**FRENCH MARIGOLD**

- **Tagetes patula**

**Height:** 10 to 12 in./25 to 30 cm  
**Spread:** 6 to 8 in./15 to 20 cm  
**Seed supplied as:** Coated, De-tailed

**Plug crop time:** 3 weeks  
**Transplant to finish:** 3 to 4 weeks

- Double crested flowers are the largest of any in this type – 2 to 3 in./5 to 8 cm across – in a wide range of pure, intense colours.  
- Fast to flower with a tight flowering window.  
- Excellent garden performers under a wide range of conditions.

**New Flame Improved**  
Larger flowers and less stretch in the pack; this upgrade brings even greater uniformity into the series.

**New Deep Orange Improved**  
Improved habit brings this colour class into line with the series. Replaces Deep Orange (more compact than others in the series).

**All-around performance**

The market leader in French marigolds, Bonanza is the series to choose when you want to pump up your pack sales. This popular series delivers earliness, large flowers, uniformity and superior performance under a wide range of conditions.

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**PANSY**

- **Viola x wittrockiana**

**Promise® Series F1**

- **Height:** 8 to 12 in./20 to 30 cm  
- **Spread:** 8 to 12 in./20 to 30 cm  
- **Flower size:** 2.75 in./7 cm  
- **Seed supplied as:** Raw, Primed

**Plug crop time:** 5 weeks  
**Transplant to finish:** Spring 6 to 7 weeks, Autumn 4 to 5 weeks

- Selected for European growing conditions, Promise is ideal for high-density, pot-tight Spring programs for the European market.
- Early, compact plants with large flowers will not extend beyond the edge of the pot in production.

**New Antique Shades Improved**  
Better plant habit and earlier flowering than the original variety.

**New Pure Silver Azure Improved**  
Better plant uniformity and habit.

**New Rose Blotch**  
Replaces Rose Shades.

**New Yellow Blotch Improved**  
Better plant branching and habit plus narrower flowering window.
Make your life easier

Matrix is your best option for longer days and warmer growing. Uniformity of timing and plant habit simply can’t be beat by any other varieties in the marketplace. Only Matrix has a tight 7-day bloom window in Autumn production that allows every colour to ship the same week.

Matrix® Series F1

- Height: 8 in./20 cm
- Spread: 8 to 10 in./20 to 25 cm
- Flower size: 3.5 in./9 cm
- Seed supplied as: Raw, Primed
- Plug crop time: 5 weeks
- Transplant to finish: Spring 6 to 8 weeks, Autumn 4 to 6 weeks

- Matrix offers less handling, less waste and exceptional holding power for higher profitability.
- Extra-large flowers hold up to the heat and PGR stress in Summer/Autumn production.
- Gives pro landscapers the best choice for uniform colour striping, plus the most flowers per plant of any large-flowered pansy.

New Deep Blue Blotch Improved

Greater plant vigour and better uniformity to match the series.

New Light Blue Improved

Earlier flowering fits series timing; flower colour is upgraded to a lighter blue shade.

Spring Matrix Series F1

- Height: 8 in./20 cm
- Spread: 8 to 10 in./20 to 25 cm
- Flower size: 3 in./8 cm
- Seed supplied as: Raw, Primed
- Plug crop time: 5 weeks
- Transplant to finish: Spring 6 to 7 weeks, Autumn 4 to 5 weeks

- Your best option for shorter days and cool growing – plants look better, last longer and have the tightest flowering window for less dump.
- Most uniform Spring-flowering series produces large blooms that maintain good presentation under cold, dark, wet Winter production.

New Blue Improved

Earlier flowering is in line with the series during Spring production. Flower colour is now a more true blue tone.

New Halloween Improved F1

- Height: 6 to 8 in./15 to 20 cm
- Spread: 8 to 10 in./20 to 25 cm
- Flower size: 1.75 to 2 in./4 to 5 cm
- Seed supplied as: Raw, Primed
- Plug crop time: 5 weeks
- Transplant to finish: Autumn 2 to 3 weeks

- Replaces Halloween II with less stretch under Autumn growing conditions and a larger flower size.
- Blooms are a unique, uniform pure black colour, on strong, short peduncles.
- Early, well-branched and floriferous plants are great for Autumn pots and packs, and overwinter with ease when planted in-ground.

Frizzle Sizzle Series F1

- Height: 6 to 8 in./15 to 20 cm
- Spread: 8 to 10 in./20 to 25 cm
- Flower size: 2.5 in./6 cm
- Seed supplied as: Raw, Primed
- Plug crop time: 5 weeks
- Transplant to finish: Spring 6 to 8 weeks, Autumn 4 to 6 weeks

- PanAmerican Seed is the only professional supplier of this unique frilly flower form – count on reliable seed supply.
- Great for cool-season Winter and early Spring end cap displays.
- Stronger ruffling occurs in cool conditions; Spring production is recommended.

New Yellow Improved

Flowers 5 days earlier with greater hybrid uniformity.
SPREADING PANSY
Viola x wittrockiana

Cool Wave® Series F1

- Height: 6 to 8 in./15 to 20 cm
- Spread: 24 to 30 in./61 to 76 cm
- Flower size: 2 to 2.25 in./5 to 6 cm
- Seed supplied as: Primed
- Plug crop time: 4 to 5 weeks
- Transplant to finish: Spring 6 to 7 weeks, Autumn 4 to 5 weeks

- The best-performing spreading pansy series delivers easy spreading colour for Spring and Autumn, so you can extend your growing and selling season for the popular Wave® Brand.
- Superior overwintering hardiness - Cool Wave is the earliest pansy to return in the Spring.

New Fire
All-new colour joins Cool Wave! Rich dark red with a yellow face brings “fire” to Cool Wave.

New Lemon Improved
Clear, buttery lemon blooms show some genetic dark and light shading. Replaces Lemon Surprise.

Twice the spread...double the colour!

Wow ’em with Cool Wave - hands down, it’s the fastest-growing, longest-lasting, truly trailing pansy for Spring and Autumn. One trip to the garden centre for lush baskets or pots for in-ground planting is enough to convince anyone that Cool Wave is a cool-season gardener’s dream.

COOL WAVE
Request your Product Information Guide for full culture details
Lucky Star Mixture

**Stays in colour... Really!**

Lucky Star is bred for the fastest follow-up blooming of any pentas on the market. Non-stop colour means plants look better getting off the truck and they just keep getting better in the store! Plus, this colour-rich series has a tight, compact habit that keeps them looking tidy with virtually no effort. The promise of continuous, show-stopping colour on full, lush plants... now that's a huge plus!

**PENTAS**

*Pentas lanceolata*

**Lucky Star® Series F1**

Height: 12 to 16 in./30 to 41 cm  
Spread: 12 to 14 in./30 to 36 cm  
Seed supplied as: Pelleted  
Plug crop time: 6 to 7 weeks  
Transplant to finish: 7 to 8 weeks

- With the fastest follow-up blooming of any pentas on the market and a 1-week bloom window, Lucky Star maintains a consistent show of colour from retail through end-of-season.
- Follow-up blooms do not eclipse the prior flush, so plants stay compact, tight and ready for sale at retail with minimal work.

**New Raspberry** Bright, no-fade colour is the first-of-its-kind for pentas!

**New Mixture** Dark Red, Deep Pink, Lavender, NEW Raspberry, Violet, White.
SPREADING PETUNIA
Petunia x hybrid

Easy Wave® Series F1
Height: 6 to 12 in./15 to 30 cm
Spread: 30 to 39 in./76 to 99 cm
Flower size: 2 to 3 in./5 to 8 cm
Seed supplied as: Pelleted
Plug crop time: 4 to 6 weeks
Transplant to finish: Spring 6 to 7 weeks, Summer 4 to 5 weeks

- Exceptional uniformity means simplified production, maximized plug yields and the ability to meet every ship date for every colour. Lets you grow specialty mixes, too!
- More mounded with more controlled spread than Wave varieties.
- Recommended in Wave branded packaging: 6-in./15-cm pots, premium quarts and gallons, 306 premium packs with handle, hanging baskets.

New Red Improved Offers many upgrades compared to original Red. Improved seed quality. Denser plant with more branching and shorter peduncles for a more controlled, holdable plant structure. Plant is slightly smaller with approximately 10% less spread. Foliage is dark green. Flowers are a deeper, richer red colour that does not wash out. Flower size is slightly smaller, yet not as small as Easy Wave Yellow. Timing to first flower is similar, however Easy Wave Red Improved is approximately 3 days faster to salable stage.

New Violet Improved 2 to 3 days slower to first flower than original Violet. Improved and more densely branched for a fuller plant. Less upright vigour and shorter peduncles for improved manageability. Deeper colour for improved retail show. Sturdier flowers for a less floppy appearance - delivers a better retail and garden show.

New Formula Mixture Improved
NEW Violet Improved, NEW Red Improved, Blue, White, Pink Passion, Neon Rose, Silver.

New Great Lakes Mixture
Improved NEW Violet Improved, Blue, White. Flower window is now 2 days shorter.

New Opposites Attract Mixture
Improved NEW Violet Improved, Coral Reef. Same time to first flower, with a narrower window to 50% flower by 3 days.

New Plum Pudding Mixture
Improved NEW Violet Improved, Plum Vein. Flowering time to 50% flower narrows to 1 day.

New South Beach Mixture
Improved NEW Violet Improved, NEW Red Improved, Coral Reef. Window to first flower shortens from 5 to 3 days.

New The Flag Mixture
Improved RED Improved, White, Blue. Time for first flower is the same; however, the time to 50% flower narrows from 3 days to 1 day.

All-season salesmakers kick it up a notch!
Red and Violet get big-time upgrades for 2019…and that moves 6 eye-catching mixes to the next level, too! Always a standout in the petunia market, bold and creative Easy Wave lets you bring in a wide array of decorator colours. Put the huge versatility to work - they’re perfect for solo and mixed planters and baskets, gardens and landscapes. Best of all, Easy Wave delivers customer-pleasing performance all Summer.
PRIMULA acaulis

**Optic Series F1**

- **Height**: 4 to 6 in./10 to 15 cm
- **Spread**: 6 to 8 in./15 to 20 cm
- **Seed supplied as**: Primed
- **Plug crop time**: 5 to 6 weeks
- **Transplant to finish**: Autumn, 13 to 15 weeks

- Full-flowering varieties with tidy green foliage provide bright and rich, non-fading color in Autumn and Winter gardens and planters.
- Compact plants require less PGRs, and the series needs less cold to initiate flowers, making for easier programming.
- Superior seed quality results in a very uniform crop.

- **New Blue**: One of the most compact in the series, featuring small, ruffled leaves.
- **New Copper**: Shades of copper spark up Autumn mixes.
- **New Cream**: One of the fastest to flower in the series.
- **New Rose**: One of the earliest to flower in the series, and one of the best varieties due to its uniformity and great habit.
- **New Scarlet**: One of the latest to flower in the series, with a more compact habit.
- **New White**: Flowers can be slightly ruffled.
- **New Mixture**: All of the important colours and some novelties, for a good, balanced, uniform mix with short flowering window.
The name says it all!

Big Blue salvia is exactly that - a vigorous flowering annual in a sales-inspiring clear blue colour. *The first of its type from seed*, this big beauty will pump up mid-Summer sales in large containers. Super easy and super showy for both landscapers and home gardeners for their back-of-border plantings, sending out blue spires continuously from July to first frost with little to no extra care.

**SALVIA INTERSPECIFIC**  
*Salvia longispicata x farinacea*

**New Big Blue**

- **Height:** 24 to 36 in./61 to 91 cm  
- **Spread:** 18 to 20 in./46 to 51 cm  
- **Seed supplied as:** Raw  
- **Plug crop time (288 tray):** 4 weeks  
- **Transplant to finish:** 8 to 13 weeks, depending on light, heat and daylength conditions

- Great performer in heat and low-water conditions.  
- Low-maintenance plant does not need deadheading.  
- Hummingbirds, bees, butterflies and more flock to Big Blue in the garden.  
- At its best in full sun, but will tolerate dappled shade or partial sun.

Request your Product Information Guide for full culture details.
SNAPDRAGON • Antirrhinum majus
Snapshot Series F1
Height: 6 to 10 in./15 to 25 cm
Spread: 10 to 12 in./25 to 30 cm
Seed supplied as: Raw
Plug crop time: 5 to 6 weeks
Transplant to finish: 6 weeks
• Perfect balance of pack performance and landscape success, with uniform flowering and a 7 to 10-day window for Spring and Autumn sales in packs and small pots.
• Bushy, compact plants are topped by closely spaced, full flower spikes.

TRAILING VINCA • Catharanthus roseus
Mediterranean XP Series
Height: 4 to 6 in./10 to 15 cm
Spread: 20 to 30 in./51 to 76 cm
Seed supplied as: Raw
Plug crop time: 5 weeks
Transplant to finish (basket): Spring 12 to 14 weeks, Summer 8 to 10 weeks
• The only full series of trailing vinca offering a true red.
• Mediterranean XP varieties fill in fast with terrific coverage.
• XP genetics deliver a tight, 5 to 7-day flowering window, luxurious spreading habit, larger flowers and reliable germination.
New Burgundy Halo Vibrant, deep burgundy with bright white eye.

Robust and ready for anything Mother Nature sends!
Titan is up to 2 weeks faster to flower than open-pollinated vincas, with superior branching and the biggest flowers in all the top-selling colours. The most uniform F1 vinca series on the market shows off flowers that are up to 50% larger than O.P. types in cooler temperatures.

UPRIGHT VINCA • Catharanthus roseus
Titan® Series F1
Height: 14 to 16 in./36 to 41 cm
Spread: 10 to 12 in./25 to 30 cm
Seed supplied as: Raw
Plug crop time: 5 weeks
Transplant to finish: 3 to 4 weeks
• More stress-tolerant due to hybrid vigour – tolerates heat and drought and can withstand cooler and wetter conditions compared to O.P. types.
• Perfect for landscapes and containers of all types.
• Well-suited to packs, 4-in./10-cm and 6-in./15-cm pots.
New Dark Red Improved Matches the series for both flowering and finish timing.
UPRIGHT VINCA

Tattoo Series

Height: 10 to 14 in./25 to 36 cm
Spread: 6 to 8 in./15 to 20 cm
Seed supplied as: Raw
Plug crop time: 5 weeks
Transplant to finish: 5 to 6 weeks

• Very floriferous and well-branched plants display one-of-a-kind flowers with an overlapping, fully rounded form that won’t show gaps in hot temperatures.
• 3 to 5-day flowering window with an appealing upright habit across all colours.
• Outstanding in hot and sunny conditions.
• NOTE: Tattoo blooms display the best colour contrast under warm conditions with higher light; colours brighten with increased temperatures and light. Grown under cooler conditions and lower light, colours appear darker overall with less contrast.

New Black Cherry Swirls of cherry and raspberry are lightly airbrushed with black tones.
New Papaya Beautiful, soft “orangesicle”-toned petals are marked with an inky black eye.
New Raspberry Deep raspberry blooms mature to a soft rose colour, each accented with an inky black eye.
New Tangerine Swirls of black airbrushed onto tangerine-colour blooms with a bright eye.

Make your mark on vinca sales!

The art of plants comes alive on every Tattoo bloom - each petal looks like it is inked or airbrushed with soft brush strokes of black. Adding these standout newcomers to your lineup shows that you have your finger on the pulse of what today’s gardener really wants: bold, fun, head-turning. Tattoo… without a doubt, the most unique vinca on the market today!
Send the best-looking violas to retail
Grow, ship, sell and plant the best-looking violas for Spring and Autumn – Sorbet XP genetics deliver a uniform plant habit and the tightest bloom window.

Sorbet® XP Series F1
Sorbet XP Yellow Burgundy Jump Up Viola
Sorbet XP Pink Wing Viola
Sorbet XP Yellow Improved Viola
Sorbet Yellow Blue Jump Up Viola
Sorbet XP Yellow Burgundy Jump Up Viola
Sorbet Yellow Blue Jump Up Viola

VIOLA Viola cornuta
Sorbet® XP Series F1
Height: 6 to 8 in./15 to 20 cm
Spread: 6 to 8 in./15 to 20 cm
Flower size: 1 to 1.5 in./3 to 4 cm
Seed supplied as: Raw, Primed
Plug crop time: 4 weeks
Transplant to finish: Early Spring 6 to 9 weeks, Autumn 4 to 6 weeks

• Sorbet XP needs fewer PGRs, with superior holdability and less shrink. Their F1 vigour assures greater germination, earliness, and excellent plug and garden performance.

• Violas are a key pro landscaper item and Sorbet XP excels at every turn: plants cover the soil at flowering, with more blooms on every plant and less stretching; stay compact in both heat and cold; excellent overwintering; wide range of clear colors allows for custom mixes.

New Pink Wing Highly sought-after pink cap/white face colour pattern joins the Sorbet XP series. Replaces Sorbet Pink Wing.
New Yellow Burgundy Jump Up Yellow face with burgundy cap.
New Yellow Improved Upgraded flower quality shows little to no whiskering; delivers greater flower power than original XP Yellow.

ZINNIA Zinnia marylandica
Double Zahara Series
Double Zahara Salmon Zinnia
Double Zahara Bright Orange Zinnia
Double Zahara White Zinnia

Sorbet® Series F1
Height: 6 to 8 in./15 to 20 cm
Spread: 6 to 8 in./15 to 20 cm
Flower size: 1 to 1.5 in./3 to 4 cm
Seed supplied as: Raw, Primed
Plug crop time: 4 weeks
Transplant to finish: Early Spring 6 to 9 weeks, Autumn 4 to 6 weeks

• Plants cover the soil at flowering with more blooms and less stretching, and fewer PGRs are needed.

• Superior holdability and less shrink.

• Use in Autumn and Spring programs - the novelty colors have good retail and home garden appeal.

New Bright Orange Intense bright orange colour on highly double flowers. Very floriferous, with slightly smaller flowers than others in the series.

New Salmon Holds its colour under hot conditions, while others in this colour class start to wash out.

New White Outstanding white joins the series, with larger and more double flowers than the competition. Up to 2% of plants can show pink blushing in the flowers.
**The early bird gets the…Sales!**

There’s early…and then there’s Double the Sun! This bright newcomer is 2 to 3 weeks earlier than our Early Sunrise and other comparable varieties in the early cool season. In Summer, it finishes 1 to 2 weeks earlier. Get this favourite perennial class into the store before any other compact, semi-double yellow coreopsis, and listen as those registers ring.

**COREOPSIS Coreopsis grandiflora**

**New Double the Sun**

- **Height:** 12 to 14 in./30 to 36 cm
- **Spread:** 12 to 14 in./30 to 36 cm
- **USDA Hardiness Zones:** 4a to 9b (-30 to 25°F/-34 to -4°C minimum temperatures)
- **A First-Year-Flowering Perennial.**
- **Seed supplied as:** Primed
- **Plug crop time:** 5 to 7 weeks
- **Transplant to finish:** 9 to 12 weeks

- Semi-double, clear golden yellow flowers are the same large, 2.5-in./6-cm size as SunKiss and Early Sunrise, and bigger than Sun Up and Sunfire.
- Great controlled habit with strong flowering.
- Ideal for quart and 1-gallon production in Spring and Summer with 13-hour critical daylength. For 2-gallon and larger containers in Summer, Early Sunrise is the optimal choice.
New Avignon Early Blue

Height: 10 to 12 in./25 to 30 cm
Spread: 9 to 11 in./23 to 28 cm
USDA Hardiness Zones: 6a to 8b (-10 to 15°F/-23 to -9°C minimum temperatures)
A First-Year-Flowering Perennial.

Seed supplied as: Raw
Plug crop time: 5 to 6 weeks
Transplant to finish: 10 to 14 weeks (24 to 36 weeks overwintered)

- Grow early, grow easy, grow beautiful! This tight, well-branched and strong-stemmed plant shows deeper blue blooms earlier than similar English Lavenders.
- Grown as annual in the early cool season, Avignon Early Blue finishes about 2 weeks earlier than our Ellagance Purple and 1 week before the competition.
- Critical daylength is only 10 hours, like Ellagance Purple, but Avignon Early Blue grows better in cool conditions.

New Blue Spear

Height: 11 to 13 in./28 to 33 cm
Spread: 9 to 11 in./23 to 28 cm
USDA Hardiness Zones: 6a to 8b (-10 to 15°F/-23 to -9°C minimum temperatures)
A First-Year-Flowering Perennial.

Seed supplied as: Raw
Plug crop time: 5 to 6 weeks
Transplant to finish: 11 to 15 weeks (24 to 36 weeks overwintered)

- The showiest English Lavender you can grow and sell! Blue Spear shows off bigger, taller spikes than any other seed lavender, with more upright flower stems that stand closer to each other for huge impact from a distance.
- Very easy to grow, with high uniformity, good habit and earliness (if grown with minimum 13-hour daylength).
- Bred for maximum show, Blue Spear is best used as a perennial in USDA Hardiness Zones 6a to 8b.

Pump up your lavender program!

These two newcomers join the Ellagance series and Lavance Deep Purple to boost our regionally focused program and round out the Lavandula angustifolia assortment from Kieft Seed. Find detailed information in the regional Lavender Scheduling Tool at panamseed.com/perennials.
Revolution Red with Dark Eye Improved Gerbera

GERBERA Gerbera jamesonii

Revolution Series F1

- Height: 4 to 8 in./10 to 20 cm
- Spread: 10 to 12 in./25 to 30 cm
- Flower size: 3 to 4 in./8 to 10 cm
- Seed supplied as: Coated
- Plug crop time: 6 to 7 weeks
- Transplant to finish: 8 to 10 weeks

- The most uniform gerbera you can grow! When it comes to uniformity of flowering window across a complete colour range, Revolution is the leading standard-size pot gerbera.
- Industry-leading seed quality.
- Better second flush of flowers than the competition assures much longer bloom time for the consumer.

New Red with Dark Eye Improved
Replaces Scarlet Red with Dark Eye with more uniform colour, stem length and plant size, plus shorter flowering window.

New Select Mixture Improved
Uniform mix of bold, bright colours now includes the latest and best genetics of the Revolution series. More uniform for flower timing, plant size and stem length than original Select Mixture.

Hit your schedule every time

Flower timing is synchronized across the colour range in each Revolution series, so your product flows smoothly. No surprises...you grow, pick, pack and ship just as you planned. High uniformity enables a consistent, fully programmable, high-density crop year-round.
More colour = repeat sales!
Meet the pot sunflower they’ll want again and again. SunBuzz keeps pumping out more blooms, thanks to the big show of secondary flowers. On the production end, SunBuzz lets you grow and sell a compact plant with fewer PGRs, so you send a good-looking and cost-effective product off to market.

SUNFLOWER
* Helianthus annuus

**New SunBuzz F1**
* Height: 12 to 20 in./30 to 51 cm
* Spread: 8 to 12 in./20 to 30 cm
* Seed supplied as: Treated
* Plug crop time: 2 to 3 weeks
* Transplant to finish: 6 to 8 weeks

- Clear, yellow-filled flowers make SunBuzz a real standout!
- Compact, smaller-leafed plants are more manageable and programmable on the bench, and more appealing in the store.
- Delivers better seed uniformity and needs fewer PGRs than similar varieties.
- A big improvement over Ballad, with less long day sensitivity, faster flowering and a more compact habit.

ORNAMENTAL PEPPER
* Capsicum annuum

**New Hot Pops Series**
* Height: 4 to 5 in./10 to 13 cm
* Spread: 6 to 8 in./15 to 20 cm
* Seed supplied as: Raw
* Plug crop time: 4 to 5 weeks
* Transplant to finish: 7 to 13 weeks for Autumn finish

- Hot Pops Purple has a new companion! Pump up your Autumn pot plant sales with a new fruit form and multicolours.
- Small, round peppers show off multiple colours simultaneously to make a high-impact display for outdoor and indoor decorating.
- Best for ornamental use. Fruit is edible but not palatable – Hot Pops Yellow fruit is medium hot, while Hot Pops Purple is very hot.

**New Yellow** Shows both yellow and red fruit. Sow Hot Pops Yellow 1 week earlier to time finish with Hot Pops Purple.

**New Hot Pops Purple**

**New Hot Pops Yellow Ornamental Pepper**
* US9,307,712

**New SUNFLOWER**
* Helianthus annuus

**New SunBuzz F1**
* Height: 12 to 20 in./30 to 51 cm
* Spread: 8 to 12 in./20 to 30 cm
* Seed supplied as: Treated
* Plug crop time: 2 to 3 weeks
* Transplant to finish: 6 to 8 weeks

- Clear, yellow-filled flowers make SunBuzz a real standout!
- Compact, smaller-leafed plants are more manageable and programmable on the bench, and more appealing in the store.
- Delivers better seed uniformity and needs fewer PGRs than similar varieties.
- A big improvement over Ballad, with less long day sensitivity, faster flowering and a more compact habit.
Dianthus barbatus

Sweet Series F₁

Height: 18 to 36 in./46 to 91 cm
Seed supplied as: Pelleted
Planting density: 4 to 6 plants/ft² (42 to 64 plants/m²)
Best for: Greenhouse, high tunnel; also suitable for field

Plug crop time: 4 to 5 weeks
Transplant to finish: Late Spring/Summer greenhouse/field, 8 to 9 weeks; Late Summer/Winter greenhouse, 9 to 13 weeks; Field, 15 to 18 weeks

- Top-notch filler series features large, fragrant and long-lasting blooms on strong, straight stems.
- Produces high yields of saleable stems.
- Taller growth comes from early, Autumn-transplanted, greenhouse-grown plants.

New Purple Improved Richer colour and improved uniformity.

New Purple Improved

Best in class makes the best bouquets

Sweet offers the best commercial D. barbatus series available. With no vernalization needed for first-year-flowering, you can program for year-round production. Add to that the very uniform height and flowering, excellent retail holdability and 11 separate bright colours, and you’ve got one sweet series to grow and send to market!
**PRODUCTION GUIDE**

<table>
<thead>
<tr>
<th>Class/Variety</th>
<th>Greenhouse</th>
<th>High Tunnel</th>
<th>Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>CELOSIA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sunday Bright Pink, Cherry, Orange Improved &amp; Purple</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>DIANTHUS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweet Purple Improved</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

See the full chart of all PanAmerican Seed cut flowers on page 197 of the 2018-2019 Catalogue.

**FLORAL SELECTION GUIDE FOR BOUQUETS**

<table>
<thead>
<tr>
<th>Class/Variety</th>
<th>Focal</th>
<th>Filler</th>
<th>Line</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>CELOSIA</td>
<td></td>
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</tr>
</tbody>
</table>

See the full chart of all PanAmerican Seed cut flowers on page 179 of the 2018-2019 Catalogue.

**CELOSIA**
*Celosia plumosa*

**Sunday® Series**
- **Height:** 28 to 40 in./71 to 102 cm
- **Seed supplied as:** Coated
- **Planting density:** 6 to 8 plants/ft.² (64 to 80 plants/m²)
- **Best for:** Greenhouse, high tunnel
- **Plug crop time:** 2 to 3 weeks
- **Transplant to finish:** 12 to 16 weeks

- **First professional cut version of the popular plume-shaped celosia.**
- **Full plumes and long, strong stems enhance high-end retail mixed bouquets.**
- **Short programmable production time and high yield – ideal for high-density programs.**

**New Bright Pink**
Slightly shorter plumes compared to other Sunday varieties.

**New Cherry**
Bright cherry colour. Slightly larger leaves than other Sunday varieties.

**New Orange Improved**
More stem length, less daylength sensitivity and darker orange colour than current Orange.

**New Purple**
Unique colour.
**NEW**

**Butterbaby Squash**

**BUTTERNUT SQUASH**
*Cucurbita moschata*

**New Butterbaby**

- **Height**: 8 to 12 in./20 to 30 cm
- **Spread**: 84 to 120 in./213 to 305 cm
- **Seed supplied as**: Raw

**Days to maturity from direct seed**: 100 to 105

**Fruit length**: 4 to 6 in./10 to 15 cm

**Fruit width**: 3 to 4 in./8 to 10 cm

**Plant habit**: Restricted vine

**Best for**: Home Gardener in-ground, Fresh Market Farmer in-ground

**Plug crop time**: 2 to 3 weeks (direct sow), 3 to 4 weeks

**Transplant to finish**: 2 to 3 weeks

- Produces an abundance of sweet, personal-size mini butternuts with classic light tan skin colour.
- High proportion of uniform fruit - around 1 lb./454 g each - means less grading for the fresh market farmer and satisfaction for the home gardener. Depending on vine spacing, average fruit size can range from 0.5 to 1.5 lb./227 to 680 g each.
- Restricted vines will not take over the garden like traditional butternuts; can be grown on a trellis to save even more space.
- Excellent storage quality - will last up to 4 months or more after harvest.
- Powdery Mildew resistance improves the ability to harvest high-quality fruit.

**NEW Snackabelle Red F1**

**SWEET PEPPER**
*Capsicum annuum*

**New Snackabelle Red F1**

- **Height**: 18 to 24 in./46 to 61 cm
- **Spread**: 12 to 18 in./30 to 46 cm
- **Seed supplied as**: Raw

**Days to maturity from transplant**: 70 to 75 to full ripe, 55 to 60 to green

**Fruit characteristics**: Mini bell, green to deep red

**Fruit length**: 2 to 2.25 in./5 to 6 cm

**Fruit width**: 2 to 2.25 in./5 to 6 cm

**Plant habit**: Compact

**Best for**: Home Gardener container, Home Gardener in-ground, Fresh Market Farmer in-ground

**Plug crop time**: 5 to 6 weeks

**Transplant to finish**: 4 to 7 weeks

- This mini bell excels across the board: earliness, ease and eating!
- “Easy-out” stem and seeds – simply push down or cut around cap to release seed cavity for quick cleaning.
- Thick-walled, blunt-end peppers have a rich, sweet flavour that’s great for fresh eating from green to red, and holds up well through grilling and stuffing.
- Superior disease resistance package for Bacterial Leaf Spot Races 1-3, 7, 8, plus Tobacco Mosaic Virus.
- Supplied as professional-quality, disease-tested seed.
### Habanero Primero Red

**Habanero Primero Red**  
*Capsicum chinense*

**New Habanero Primero Red F1**

- **Height:** 18 to 24 in./46 to 61 cm  
- **Spread:** 18 to 24 in./46 to 61 cm  
- **Seed supplied as:** Raw  
- **Days to maturity from transplant:** 75 to 80 to full ripe, 60 to 65 to green  
- **Fruit characteristics:** Habanero, green to bright red  
- **Fruit length:** 2.75 to 3.5 in./7 to 9 cm  
- **Fruit width:** 1.25 to 1.5 in./3 to 4 cm  
- **Plant habit:** Large  
- **Heat level:** Hot (4/5)  
- **Best for:** Home Gardener in-ground, Home Gardener container, Fresh Market Farmer in-ground  

**Plug crop time:** 5 to 6 weeks  
**Transplant to finish:** 4 to 7 weeks (no fruit), 7 to 9 weeks (green fruit)

- Thanks to outstanding vigour that assures stronger plants in packs and small pots, Primero Red goes head to head for early-season retail with bells and jalapenos.  
- Early flowering allows large pots to be sold with flowers and immature fruit.  
- Intermediate resistance to Tomato Spotted Wilt Virus (TSWV).  
- Supplied as professional-quality, disease-tested seed, with high germination rates even at lower temperatures than *C. annuum* varieties.  
- Bred in collaboration with the University of Wisconsin.

**Super early!**  
**Super tasty!**  
**Super yields!**  

Habanero Primero Red is the earliest ripening habanero on the market, with fruit ready to harvest and enjoy as early as bell peppers! And what a harvest it is – expect huge yields of peppers that are larger than other habaneros. But that’s not all - these big beauties have just about one-third the heat of standard habaneros, letting gardeners appreciate their rich flavour in fresh salsa and cooking. Primero Red is sure to be a Super seller!
Start strong, finish stronger!

Seven of our SimplyHerbs varieties and several of our SimplySalad® varieties are now supplied as Precision Multi-Pellets. This revolutionary seed technology guarantees that all varieties are present and at the ideal seed count for better germination and better uniformity. Plus, the rounded shape makes hand or mechanical sowing easier and more efficient. The Precision Multi-Pellets flow right through your seeder to create “easy-sow, easy-grow” plugs that grow into great-looking, balanced product that sells. One pellet into one plug and you’re ready to go!

SIMPLYHERBS

Dill

Curled Parsley

Large-Leaf Italian Flat Leaf Parsley

Rosemary

New! SimplyHerbs Dill, Curled Parsley, Large-Leaf Italian Flat Leaf Parsley and Rosemary are now available as Precision Multi-Pellets, joining Basil, ’Try Basil‘ and Sage with this upgraded seed form.

For Growers, this offers reliable plug production, improved order fill rate, uniform quality in plug trays and improved margin, meaning more sales.

For Hydroponic Growers, this offers a higher percentage of transplantable plugs and more uniform finished product.

One pellet into one plug and you’re ready to go!
THE AMERICAS

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ACCENT OF TERMS

These terms and conditions shall govern all sales placed with Seller. Purchaser acknowledges that these terms and conditions are those of Seller’s proposal, if any, to constitute the entire agreement between Seller and Purchaser and supersede any prior agreements and representations. Any prior or contemporaneous promises, agreements, negotiations or representations whether oral or written, or created the custom, usage or course of dealing are all superseded by these terms and conditions. No modification of these terms and conditions shall be effective unless in writing signed by Seller. Placement of the order shall constitute Purchaser’s acceptance of these terms and conditions. All orders are subject to acceptance by Seller at our corporate office. Any different or additional terms in any documents from Purchaser are objected to and rejected, are deemed to materially alter these terms, and will not become part of any contract between Seller and Purchaser.

PRICING

Prices and availability are subject to change without notice. Although Seller tries to assure accuracy, it shall not be held responsible for typographical or other errors in the price list. Purchaser’s price is determined by referring to the product price and calculating any applicable charge for which Purchaser may qualify. Please contact your sales representative for more information.

TERMS

All payments must be received before Goods are shipped unless otherwise agreed to in writing by Seller. Payment terms can be seen on your Order Confirmation or at the appropriate Terms & Conditions page at panamseed.com for North American, European and International credit-approved customers. A 2% per month finance charge (24% annual rate) will be added to all past due balances at the end of each month. Seller has no obligation to ship any Goods until payment in full is received.

MINIMUM ORDERS

The minimum quantity listed in the price list for each variety is the minimum order for that variety. Seller reserves the right to fill orders using pre-packaged inventory when available.

FREIGHT & HANDLING CHARGES, INSPECTION, DAMAGED GOODS

(a) The freight and handling charge on Purchaser’s invoice covers the freight cost of the Goods to Purchaser’s destination. Seller will pay to return damaged goods, for replacement Goods or provide Purchaser with a credit for damaged Goods if the steps listed in Section (b) below are followed. PURCHASER WILL NOT REFUSE TO RETURN DAMAGED OR DEFECTIVE GOODS, OR THE RIGHT TO FILE A CLAIM IS LOST AND PURCHASER WILL STILL BE LIABLE FOR THE MATERIAL AND THE FREIGHT.

(b) When Purchaser receives shipment, it shall immediately: 1) count all cartons; 2) inspect all cartons for external damage; 3) check for open or resealed cartons; 4) note any damages, shortages, open or resealed cartons on delivery receipt; the carrier’s representative must also sign the receipt; and 5) open all boxes immediately and inspected for damage; including, but not limited to, material shortages. PURCHASER MUST NOTIFY SELLER WITHIN TWO (2) BUSINESS DAYS IF A SHIPMENT IS DAMAGED by calling its Customer Service Representative to report the damage and receive details on what is needed to file a claim. The Goods shall be deemed accepted by the Purchaser and hence by (a) notice of acceptance to Seller, or (b) ten (10) days after delivery. Any claims for shortage, non-delivery, damage, or defect which would reasonably be discoverable in the course of such inspection shall be waived unless Purchaser notifies Seller in writing within ten (10) days after delivery of the goods to which the claim relates.

PACKAGING FEES

All orders will be filled in bulk and predetermined packet sizes unless special packaging instructions are given. If special packaging is requested, a packaging fee will apply and additional time may be required to complete the order. Purchaser shall contact Customer Service if it requires additional details.

CUSTOM SEED TREATMENTS

If a custom treatment is requested, a $125 (U.S.) fee per batch will apply and additional time may be needed to complete the order.

PHYSIOLOGICAL TREATMENTS

Depending on the Goods ordered by Purchaser, and the location of the Purchaser, Phytochemical Certificates may be required to comply with government regulations. If the shipment requires Physiochemical Treatment, an additional cost will be charged.

DELIVERY DATES

Please indicate the required ship date when the order is being placed. No orders can be accepted without a requested ship date. All shipping and delivery dates provided by the Seller are approximate.

DELAYS, SHORTAGES & SUBSTITUTIONS

Seller shall not be responsible for delays in delivery or for losses resulting from such delays. Seller reserves the right to make partial shipment. Seller will not be liable for any delay in performing or for partial or complete failure to perform hereunder if such delay or failure is due to fire, explosion, flood, Act of God, force majeure, accident, war, intervention of governmental authorities, strikes, labor disputes, natural shortages, transportation delays, any act or omission of Purchaser, its agents or employees or any party acting by, through or under the control of Purchaser, or any other cause similar or dissimilar which is beyond Seller’s reasonable control.

INSURANCE

Seller does not insure shipments via Air Mail, but insures all other shipments in transit, in commercially reasonable amounts.

SHIPPING

Any shipments outside of North America will be charged normal carrier rates.

RETURNS

No Goods may be returned without first obtaining written authorization. Authorized returns will only be considered if they are in original, unused Seller packages. All returns are subject to a 15% service charge. No credit or replacement will be given for Goods returned after nine (9) months from the ship date.

Upon receiving authorization, returns can be shipped to:

West Chicago
PanAmerican Seed
Attn: Returns
622 Town Road
West Chicago, Illinois USA 60185-2698

SEED COUNT

All seed counts given are approximate quantities due to variation based on a lot by lot comparison. Seed counts may also vary widely between colors and series.

NOTICE REGARDING SEED-BORNE DISEASES

Seller makes no representation regarding the freedom from seed-borne diseases of the seed sold and disclaims any liability relating to such diseases, whether previously known to exist or not identified until such seed is grown.

RESERVATION OF OWNERSHIP

In the event of bankruptcy, products delivered by the Seller remain the property of Seller until the Purchaser has paid the purchase price. This provision extends to ownership, which is also extended to claims that Seller may obtain towards Purchaser on account of the Purchaser’s failure to meet their obligations to Sale.

LIMITATION OF WARRANTY

Seller warrants, to the extent required by law, that Goods conform to the description appearing in Seller’s catalog and on container labels, within recognized tolerances. THE FOREGOING WARRANTIES ARE IN LIEU OF AND INCLUDE ALL OTHER WARRANTIES NOT EXPRESSLY SET FORTH HEREIN, WHETHER EXPRESSED OR IMPLIED BY OPERATION OF LAW OR OTHERWISE, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT.

LIMITATION OF REMEDY

PURCHASER’S SOLE AND EXCLUSIVE REMEDY SHALL BE REFUND OF THE PURCHASE PRICE. SELLER’S LIABILITY, WHETHER FOR BREACH OF CONTRACT, BREACH OF WARRANTY, NEGLIGENCE, PRODUCTS LIABILITY OR ANY OTHER THEORY OF LIABILITY, IS LIMITED TO THE AMOUNT OF THE PURCHASE PRICE. PURCHASER AGREES THAT IN NO EVENT, REGARDLESS OF THE FORM OF ACTION OR CASE IN WHICH RECOVERY IS asserting, WILL SELLER BE LIABLE FOR CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT OR PUNITIVE DAMAGES OR INDEMNITY, INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS OR REVENUES.

MANDATORY ARBITRATION

Any claim which Purchaser may have against Seller arising out of or relating to the sale of the Goods hereunder shall be submitted to arbitration. If at all, within twelve (12) MONTHS OF THE DELIVERY OF THE GOODS WHICH ARE THE SUBJECT OF THE CLAIM AND SHALL BE HELD BY BINDING ARBITRATION IN ACCORDANCE WITH THE COMMERCIAL ARBITRATION RULES OF THE AMERICAN ARBITRATION ASSOCIATION, SAID ARBITRATION TO BE HELD IN DUITRO OR DUPEG COUNTIES, ILLINOIS.

GOVERNING LAW, JURISDICTION & VENUE

The laws of the State of Illinois shall govern but not limited to the Uniform Commercial Code as adopted therein, shall govern all matters arising out of or relating to Seller’s sale of merchandise. ANY DISPUTE NOT SUBJECT TO ARBITRATION AND ANY ACTION TO ENFORCE AN ARBITRATION AWARD ARISING OUT OF OR RELATING TO THE SALE OF MERCHANDISE HEREUNDER SHALL BE MAINTAINED IN THE STATE OR FEDERAL COURTS LOCATED IN DUPAGE OR COOK COUNTIES, ILLINOIS, AND PURCHASER SUBMITS TO THE JURISDICTION OF AND VENUE IN SAID COURTS.

INDEMNITY

By accepting the Goods, Purchaser agrees to indemnify, defend and hold harmless Seller, its affiliates, successors and assigns from and against any and all liabilities, claims, demands, damages, losses and expense (including attorney’s fees) asserted by any or all transferees of such Goods or users of the products of such Goods (i) arising from any act or omission of Seller or its employees or agents, or (ii) who were not notified by Purchaser in writing of Limitation of Warranty, Limitation of Remedy, Mandatory Arbitration, Governing Law, Jurisdiction and Venue, and Notice Regarding Seed-Borne Diseases, in language substantially equivalent to that contained in these Terms and Conditions of Sale.

TRADEMARKS

Trademarks are and shall remain the property of Ball Horticultural Company, unless otherwise indicated. Nothing herein shall grant Purchaser a license to use any such trademark.

SALE LIMITATIONS

PANAMERICAN SEED PRODUCTS ARE NOT AVAILABLE FOR SALE IN AND MAY NOT BE RESOLD INTO AUSTRALIA, NEW ZEALAND, KOREA, BRAZIL AND SOUTH AFRICA. THE COMPANY’S PRODUCTS MAY NOT BE SOLD, DIVERTED, TRANSFERRED OR RE-EXPORTED, DIRECTLY OR INDIRECTLY, TO ANY INDIVIDUAL, ENTITY, OR DESTINATION THAT IS SUBJECT TO UNITED STATES OR UNITED NATIONS SANCTIONS PROGRAMS OR EMBARGOS (INCLUDING, BUT NOT LIMITED TO, OFAC SANCTIONS PROGRAMS AND THOSE LISTED ON OFAC’S “SPECIAL DESIGNATED NATIONALS” LIST) WITHOUT AN APPROPRIATE EXPORT LICENSE.

ALL SHIPMENTS MUST BE SHIPPED IN COMPLIANCE WITH THE FOREIGN CORRUPT PRACTICES ACT AND THE UK BRIBERY ACT.

IMAGES

High and low-resolution digital images are available upon request. Please contact photo@panamseed.com.

Fax: (1) 630 562-7887.

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Visit panamseed.com for current Terms & Conditions of Sale and current Variety Protection Information.
### Key Events

**FL/IPM**  
Essen, Germany  
Jan. 23-26, 2018  

**ASTA**  
San Diego, CA  
Jan. 27-30, 2018

**California Spring Trials**  
California, USA  
April 14-19, 2018

**National Hardware Show**  
Las Vegas, NV  
May 8-10, 2018

**Flower Trials**  
Netherlands & Germany  
June 12-15, 2018

**Salon du Végétal**  
Nantes, France  
June 19-21, 2018

**Cultivate**  
Columbus, OH  
July 14-17, 2018

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**Plan your production, plan your selling.** Use this calendar to plan everything you need for a great year!
NEW VARIETIES 2019
GROW & SELL EVERY PRODUCT WITH CONFIDENCE

SEED ON THE SHELF The industry’s best product availability

PEACE OF MIND The most reliable product quality

RELIABILITY Speedy shipping straight to your door

PARTNERSHIP Friendly, on-the-spot customer service

SUPPORT Cutting edge technical advice

panamseed.com makes it easier for you to grow

Contact your preferred supplier to order PanAmerican Seed and Kieft Seed products.

U.S.: 630 231-1400 or 800 231-7065
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