



Baïi  
Australia

CUT FLOWER  
*Guide*

# Anemone Mistral Series

- Italian bred anemones
- Large flowers with long stems
- Brightly coloured blooms
- Adds a delicate touch to arrangements
- Suitable for greenhouse or field production

Anemones need extra protection from cold temperatures, but if carefully tended, they will produce an abundance of blooms during the early months of spring.

Mistral Anemones are bred by Biancheri Creations of San Remo, Italy. Their breeding program combines tradition with research and focuses not only on creating amazing flowers, but also on producing quality, early flowering plants with high production and consistency. Mistral Anemones are eye-catching blooms, always a favorite with floral designers and brides

WE CARRY A WIDE SELECTION OF COLOURS IN THIS SERIES - ASK US FOR MORE INFORMATION



## CULTURAL INFORMATION

### *Anemone coronaria*

**CROP TIME:** From plug to flower is approximately 12-14 weeks.

**PLANTING DENSITY:** 2-4 plants per 15 x 20cm netting square.

**PRE-PLANTING:**

- **SOIL:** Respond best in a soil with good fertility, high organic matter, and excellent drainage
- **pH:** 6.0 to 7.0
- Protection from wind, and ideally, some shade.
- **NETTING:** Netting size 15 x 20cm.

**IRRIGATION:** Water frequently to maintain adequate and uniform soil moisture. Drip irrigation is best.

**FERTILISATION:** Basic production requires a soluble fertiliser with a 2:1:2 (N:P:K) ratio such as a 20-10-20 at 100-200 ppm N. The fertiliser should be applied at every irrigation (fertigation). EC readings for soluble salt levels should not exceed 2.0 mmhos/cm (ds/m).

**HARVEST:** Anemones should be harvested when flowers have just started to open. Harvest when the petals begin to separate from the center of the flower, but are not all the way open. If cut flowers are transferred between containers of water, re-cut the stem, preferably with an underwater cutter.

**POST HARVEST:** Flowers are sensitive to ethylene gas, which will shorten vase life. Anemones should not be mixed with narcissus stems because exudate from narcissus causes limp stems in anemones.

**INSECTS AND DISEASES:**

- Pythium
- Rhizoctonia
- Botrytis
- Powdery mildew



# Aster Matsumoto Series

- Perfect for monoculture bunches or bouquets
- Classic colours
- Suitable for greenhouse or field production

Aster are an old-time favourite that have never gone out of style. They were introduced through Ball Seed Company by George J. Ball himself in the early 1900s. The aster (*Callistephus chinensis*) family is a big one, and has flowers that come in many bright colours and different sizes.

It's a versatile flower since it comes in a wide range of colours, providing the vintage and cottage look that is so much in fashion. And it can be grown year-round.

Fusarium tolerant, large-flowered Matsumoto offer all the characteristics needed for a focal-point flower in a bouquet or flower arrangements. Matsumoto can be grown single stem or as sprays, making this series a favourite in the ever-expanding bouquet business.

WE ALSO CARRY THE FOLLOWING SERIES:

- BONITA
- SYRINGA
- BALLOON



## CULTURAL INFORMATION

### Aster (*Callistephus chinensis*)

**CROP TIME:** 16 weeks from plug to flower.

**PLANTING DENSITY:** One plant per 15 x 20cm netting square.

**PRE-PLANTING:**

- **SOIL:** Well-drained soil, very well-leveled surface, no clumps, tilled to 25cm deep.
- **pH:** 6.0 to 7.0
- **NETTING:** Netting size 15 x 20cm.

**PINCH:** Not recommended.

**IRRIGATION:** Aster root systems are shallow. Do not overwater. Avoid overhead irrigation to keep the leaves as dry as possible, which helps prevent disease.

**DAYLENGTH LIGHTING:**

Start seven days after transplant when the plants have true leaves. The flower bud growth initiation takes place under long day conditions, but the final flower development is hastened under short days. Therefore the light should be stopped when the plants are 35-40cm high. Take into consideration that these plants have a critical 14 hour photoperiod, and an optimum of 16 hours, for flower bud initiation. Planting this crop without photoperiod lighting is not recommended.

**FERTILISATION:** Fertilise as needed to maintain healthy growth. Low fertiliser levels will cause lower leaves to yellow. High fertiliser levels will result in large foliage, delayed flowering and shorter vase life.

**HARVEST:** Harvest when 60% of the flowers are open.

**POSTHARVEST:** Hydrate stems in bactericide solution.

**INSECTS AND DISEASES:**

- Aphids
- Thrips
- Leafminers
- Fusarium (crop rotation is recommended)
- Botrytis
- Very susceptible to phytotoxicity from chemical applications

# Campanula Champion

- More colour in the stem
- Can be used as fillers or as focal-point flower
- Adds a delicate touch to arrangements
- Versatile

The genus *Campanula* consists of about 250 species, mostly long-lived perennials. The flowers are bell-shaped, hence, the Latin name *Campanula*, meaning, 'little bell.'

Propagated by seed, the Champion series is the best-known commercial variety. The Champion series is fast-finishing and high-yielding. The flower colours are blue, lavender, white and pink. Because of the unique and varied arrangement of the campanula flowers on the stems, campanula can be used in different ways in flower arrangements.

FOUR COLOURS AVAILABLE IN THIS SERIES - ASK US FOR MORE INFORMATION



## CULTURAL INFORMATION

### *Campanula medium*

**CROP TIME:** From plug to flower is approximately 13 weeks.

**PLANTING DENSITY:** One plant per 15 x 20cm netting square.

**PRE-PLANTING:**

- **SOIL:** Well-drained, loose soil with no clumps, tilled at least 25cm deep.
- **pH:** 6.0 to 7.0
- **LEAF REMOVAL:** Seven weeks after planting, remove the leaves from the lower one third of the stem.

**PINCH:** Weeks seven to eight (to even up the sprays).

**HARVEST:** When two to three of the flowers are open (once petals start spreading out).

**POST HARVEST:** Anti-shatter product is recommended. Hydrate after cutting in an STS (silver thiosulphate) solution for two hours and then use flower preservative solution.

**INSECTS AND DISEASES:**

- Pythium
- Aphids
- Botrytis
- Leafminers
- Thrips

Buy plants from a quality cut flower supplier such as Ball Australia, because plugs must be properly day-length-treated before shipment. Plant late autumn in mild climates, early spring in colder climates.

# Celosia Neo Series

- Unique colours and a much better leaf habit
- Heat Tolerant
- Suitable for greenhouse production

Celosia Neo features new, unique colours and a much better leaf habit, offering outstanding presentation making it easier to work with for bouquets or flower arrangements due to smaller leaves.

Neo lets you grow over a longer period through the year and yield more usable stems from every sq. metre. The crop is less long-day sensitive, making it easier to produce over a longer period during the year for most growers.

**FIVE COLOURS AVAILABLE IN THIS SERIES - ASK US FOR MORE INFORMATION**



## CULTURAL INFORMATION

### *Celosia cristata*

**CROP TIME:** 8 to 12 weeks from plug to flower.

**PLANTING DENSITY:** 6-8 plants per 15 x 20cm netting square.

**PRE-PLANTING:**

- **SOIL:** Well-drained soil, very well-leveled surface, no clumps, tilled to 25cm deep.
- **pH:** 5.8 to 6.2
- **NETTING:** Netting size 15 x 20cm.

**IRRIGATION:** Maintain a constantly moist media, especially for the first 2 weeks after transplanting to prevent premature flowering.

**DAYLENGTH LIGHTING:** Facultative short-day plant. Flowers will initiate faster under short days. We

recommend to give the plants a short-day treatment for 3 to 4 weeks after transplant for the best uniformity and quality crop. After the short day treatment, plants can be grown in long days.

Celosia form a taproot and are sensitive to root damage, which will result in early bud formation, deformed flowers and less uniformity. Therefore, plant before the plugs get rootbound.

**FERTILISATION:** Celosia is susceptible to salt and high EC. PGRs are generally not recommended. Celosia is responsive to B-Nine/Alar (daminozide) 2,000 ppm (2.5 g/l 85% formulation or 3.0 g/l of 64% formulation).

**HARVEST:** Harvest stems as crest is almost completely full.

**POSTHARVEST:** Strip 50-75% foliage. Use distilled water; no need for hydration or holding solutions. Avoid cold storage if possible.

**INSECTS AND DISEASES:**

- Aphids
- Spider Mites
- Leaf Miners
- Powdery Mildew
- Fusarium
- Botrytis (treat one week after planting.)



# Celosia Sunday Series

- Unique colours and a much better leaf habit
- Heat Tolerant
- Suitable for greenhouse or field production

Celosia Sunday features attractive plumes in a wide colour range making this series a novel textural addition to mixed bouquets. The full plumes and long, strong stems, also makes this an eye-catching backyard cut flower

The short, programmable production time and high yield, makes this crop ideal for high-density programs. Excellent vase life over a longer period during the year for most growers.

**FOUR COLOURS AVAILABLE IN THIS SERIES - ASK US FOR MORE INFORMATION**



## CULTURAL INFORMATION

### *Celosia plumosa*

**CROP TIME:** 8 to 12 weeks from plug to flower.

**PLANTING DENSITY:** 6-8 plants per 15 x 20cm netting square.

**PRE-PLANTING:**

- **SOIL:** Well-drained soil, very well-leveled surface, no clumps, tilled to 25cm deep.
- **pH:** 5.8 to 6.5
- **NETTING:** Netting size 15x20cm.

**IRRIGATION:** Maintain a constantly moist media, especially for the first 2 weeks after transplanting to prevent premature flowering.

**DAYLENGTH LIGHTING:** The optimum daylength for Celosia Sunday to reach the maximum stem length is between 12 to

13 hours. Under greenhouse short-day conditions, provide day-length extension up to 13 hours to allow plants to elongate and to prevent early flowering. When daylength is over 13 hours, short-day treatments may be applied. Provide a dark period for a minimum of 12 hours for 5 to 6 weeks. Do not start short days until one week after planting.

Under field conditions, crop will initiate flowers faster under short days. Schedule your crop to receive long days after transplant to achieve stem length desired.

Celosia form a taproot and are sensitive to root damage, which will result in early bud formation, deformed flowers

and less uniformity. Therefore, plant before the plugs get rootbound.

**FERTILISATION:** Celosia is susceptible to salt and high EC. PGRs are generally not recommended. Use if needed to control excessive stem length. Celosia is responsive to B-Nine/Alar (daminozide) 2,000 ppm (2.5 g/l 85% formulation or 3.0 g/l of 64% formulation) when excessive stem length is expected. Starting at 30 to 50cm height, depending on weather, a weekly spray is advised. At final desired lengths, a spray with B-Nine/Alar (daminozide) 3,250 ppm (3.8 g/l 85% formulation or 5.0 g/l of 64% formulation) could be given to stop the plant growing further.

**HARVEST:** Harvest stems as plume is 90-100% developed.

**POSTHARVEST:** Strip 50-75% foliage. Use distilled water; no need for hydration or holding solutions. Avoid cold storage if possible.

**INSECTS AND DISEASES:**

- Aphids
- Spider Mites
- Leaf Miners
- Powdery Mildew
- Fusarium
- Botrytis (treat one week after planting.)

# Delphinium Guardian Series

- Makes great flower arrangements and adds a difference to bouquets
- Suitable for greenhouse or field production
- Programmable + Predictable = Profitable

An excellent commercial cut flower series with richly coloured flower spikes, this seed-bred breakthrough is programmable and provides very uniform blooming.

Reliable, easy to program and easy to sell, the Guardian series features large flower spikes, tightly packed with semi-double blossoms. It's an essential choice for commercial cut flower growers as well as consumers. Delphinium's dark blue, lavender and white spikes make for great solid bunches, and it also provides height to flower arrangements, making it outstanding for creating huge hotel-style flower arrangements. Guardian stands above the rest in uniformity, programmability and versatility.

WE CARRY A WIDE SELECTION OF SERIES - ASK US FOR MORE INFORMATION



## CULTURAL INFORMATION

### *Delphinium elatum*

**CROP TIME:** From plug to harvest is 12 weeks.

**PLANTING DENSITY:** One plant per 15 x 20cm netting square.

**PRE-PLANTING:**

- **SOIL:** Well-drained soil, loose soil with no clumps, tilled to 25cm deep.
- **pH:** 5.8 to 6.5
- **NETTING:** Optional lateral wiring.

**IRRIGATION:** Beds should be well-watered before planting. Begin production with overhead irrigation, then switch to drip irrigation one week after transplant. Keep constant moisture (field capacity) for five weeks after planting, then reduce irrigation by 50%.

At the end of harvesting, discontinue irrigation one week before pruning, then resume irrigation to 30% one week after pruning. For re-blooming, increase irrigation gradually back to normal levels.

**FERTILISATION:** Use nitrogen and potassium at 160 ppm. Delphinium absorbs little nourishment at the beginning of its crop time but increases absorption during the period of growth. The application of highly concentrated fertiliser can cause root injury at the beginning of growth. EC of 1.5 is ideal.

**PRUNING:** Optional.

Leave between 2-5cm of the stems. If no drip irrigation is available, do a higher pruning.

**HARVEST:** Harvest when flowers are 40% to 50% open.

**POSTHARVEST:** Immediately after cutting, place the flowers in an STS (silver thiosulphate) solution to prevent ethylene damage. Pre-cool to 33F (1C) prior to shipping for best post-harvest quality and vase life.

**INSECTS AND DISEASES:**

- Slugs
- Pythium
- Thrips
- Powdery mildew
- Spider mites

# Dianthus Amazon Series

- Perfect filler for bouquets, while making exceptional monoculture bunches
- No vernalization required for flowering
- High yields of saleable commercial stems
- Suitable for greenhouse or field production

This versatile and programmable crop from Ball's own breeding can be produced year-round in cool climate conditions. Amazon performs as an exceptional filler in bouquets, and due to its strong quality stems and flower, makes a great monoculture bunch.

The glossy, dark green leaves on strong, 90cm stems contrast nicely with the bright-coloured serrated flowers, making Amazon even more appealing for large flower arrangements.

Highly productive when cut tight, it can be used 'green' in bouquets to give it a novel 'back-to-basics' texture. The variety of vivid flower colours has made dianthus Amazon a high-priority item in the bouquet-making industry.

THREE COLOURS AVAILABLE IN THIS SERIES - ASK US FOR MORE INFORMATION



## CULTURAL INFORMATION

### *Dianthus barbatus*

**CROP TIME:** 18 weeks (Neon Purple requires 19 weeks).

**PLANTING DENSITY:** One plant per 15 x 20cm netting square.

**PRE-PLANTING:**

- **SOIL:** Well-drained, loose soil with no clusters, tilled at least 25cm deep.
- **pH:** 5.0 to 6.0
- **EC:** 5.0 to 6.0
- **NETTING:** Two levels.

**SHOOT SELECTION:** Due to its high production of shoots, Amazon plants require selection. Leave the main stem and two laterals (week seven).

**IRRIGATION:** Use overhead watering for the first week

after planting, then begin drip irrigation.

**FERTILISATION:** Begin fertilisation one week after transplanting.

**HARVEST:** Harvest when 50% to 60% of flowers are open. Stems can be harvested before buds show colour and be sold as 'Green Amazon.'

**POST HARVEST:** Immediately after cutting, place the flowers in anti-shatter solution for at least two hours and then hydrate in a bactericide solution for at least eight hours before going into the cooler.

**INSECTS AND DISEASES:**

- Rust
- Leafminer (especially when plants are young).



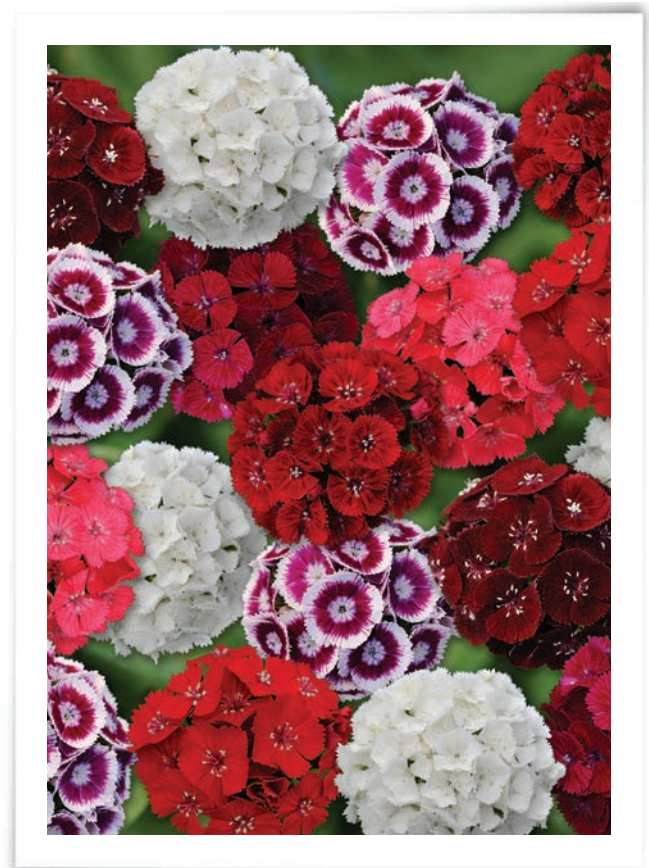
# F1 Dianthus Sweet Series

- Excellent bouquet item
- Unique focal point flower
- Long vase life
- Sweet fragrance

Dianthus Sweet is a great cut flower for greenhouse or field production. It gives professional cut flower growers the strongest, straightest stems of any Dianthus barbatus on the market. The Sweet series is offered in separate colours with no vernalization required. Sweet produces vibrant, long-lasting blooms and shiny foliage, and makes an excellent bouquet.

As a professional greenhouse and field-grown cut flower, Sweet produces high numbers of stems. The first year flowering plants are uniform for height and flowering time. Sweet likes cool weather conditions; stems grow from 45 to 90cm tall, with longer stems achievable from plugs transplanted in early autumn.

WE CARRY A WIDE SELECTION OF COLOURS IN THIS SERIES - ASK US FOR MORE INFORMATION



## CULTURAL INFORMATION

### *Dianthus barbatus*

**CROP TIME:** Approximately 16 weeks.

**PLANTING DENSITY:** One plant per 15 x 20cm netting square.

**PRE-PLANTING:**

- **SOIL:** Well-drained loose soil with no clumps, tilled to 25cm deep for best results.

- **pH:** 5.8 to 6.2

- **NETTING:** A single layer of 15 x 20cm support netting is recommended.

**SHOOT SELECTION:** Due to its high production of shoots, Sweet plants require thinning at week seven. Leave only the main stem, for best results.

**IRRIGATION:** Use overhead irrigation for the first week after planting and then start drip

irrigation, avoid excess water during the first seven weeks after transplanting. After thinning, keep constant moisture (field capacity).

**FERTILISATION:** Begin fertilisation one week after transplanting. Use N: 100-120 ppm, K: 100-120 ppm, Ca: 180-200 ppm. EC: 1.5 to 2.0.

**HARVEST:** Harvest when 50% to 60% of flowers are open.

**POSTHARVEST:** Immediately after cutting, place the flowers in STS for two hours to prevent ethylene damage, then hydrate in a bactericide solution for at least eight hours before cooling down. Dianthus Sweet should be stored and shipped upright at all times. Place cut stems vertically after harvest to maintain flower quality.

**INSECTS AND DISEASES:**

- Powdery mildew
- Rust
- Leafminer (especially when plants are young)
- Fusarium
- Thrips

# Flowering Kale Crane Series

- Adds texture and contrast to bouquets
- Colours fit today's styles and trends
- Suitable for cool greenhouse or field production

Ornamental cabbage, or flowering kale, has a tall, upright habit with a compact kale head, which makes it perfect for adding a unique touch for your bouquets. Growers can change the head size to suit their market by adjusting the density at which it's grown. This trait makes flowering kale a versatile focal-point cut flower.

The dark leaves that surround the colourful centre of the head provide nice contrast. The brightness of the colour depends on production temperature—cooler temperatures yield brighter, more vivid colour.

**WE CARRY A WIDE SELECTION OF VARIETIES - ASK US FOR MORE INFORMATION**



## CULTURAL INFORMATION

### *Brassica oleracea*

**CROP TIME:** 15 weeks from planting.

**PLANTING DENSITY:** One plant per 15 x 20cm netting square.

**PRE-PLANTING:**

- **SOIL:** Well-drained, loose soil with no clumps, tilled at least 40cm deep.
- **pH:** 6.0 to 6.5
- Add calcium carbonate and DAP (di-ammonium phosphate).
- Watering in surface of soil helps with root formation.
- **NETTING:** One level of net, eight holes, 10x12cm, or 11 to 13 cm.

**LEAF REMOVAL:** Remove lower leaves; repeat three to four times as the plant grows taller.

**IRRIGATION:** Keep constant moisture (field capacity).

**FERTILISATION:** Use fertiliser at the beginning of the crop and reduce as leaves de colour.

**HARVEST:** As soon as height is achieved and head has appropriate density formation.

**POST HARVEST:** Use clean water with a bactericide and immediate hydration.

**INSECTS AND DISEASES:**

- Leafminer (especially when plants are young)
- Aphids
- Cut worm
- Cabbage white butterfly
- Slug



# Gomphrena Series

- First-class professional cut flower for dried or cut flower arrangements
- Heat tolerant
- Vivid colour range makes them a standout
- Suitable for greenhouse or field production

Gomphrena are hardy plants and have a high tolerance for heat and humidity, and crave sunshine. Once established little water is required, making them a low maintenance crop. Gomphrena produce lovely rounded, papery flower heads that are available in an array of vivid shades. The blossoms are colourfast, sturdy, and long-lasting.

A bright addition for florists, gomphrena comes in all sizes, the flower heads dry beautifully for use in wreaths and everlasting arrangements.

WE CARRY AUDRAY™, QIS RED & STRAWBERRY FIELDS - ASK US FOR MORE INFORMATION



## CULTURAL INFORMATION

### *Gomphrena globosa / Gomphrena haageana*

**CROP TIME:** Allow 10 to 12 weeks from plug to flower.

**PLANTING DENSITY:** 1-2 plants per 15 x 20cm netting square.

**PRE-PLANTING:**

- **MEDIA:** Well-drained, loose soil with no clumps, tilled at least 40cm deep.

- **pH:** 5.8 to 6.2

- To increase productivity, the first blooms of the plants can be removed so that the secondaries will develop strongly.

- **NETTING:** If grown indoors support netting will be necessary.

**TEMPERATURES:** For best quality days over 75°F day / nights over 55°F.

**IRRIGATION:** Keep consistent moisture levels.

**FERTILISATION:** Mix a light application of a balanced organic fertiliser into the soil prior to planting. In midsummer, drench plants with a liquid fertiliser to prolong bloom time.

**HARVEST:** Harvest when flowers are in colour and head is rounded, but before heads elongate.

**POST HARVEST:** Good-quality, clean water. No additional benefits from use of commercial floral solutions. Store at 3-4°C (36-41°F) if necessary for less than 7 days for best performance.

**INSECTS AND DISEASES:**

- Leafminer (especially when plants are young)
- Aphids
- Botrytis
- Thrips

# Lisianthus Series

- Essential for bouquets, corsages and other arrangements
- Single and double flowers
- Best for greenhouse production
- Quickly becoming the wedding flower of choice

Ball has a wide offering of lisianthus series available. All made up of the very best new and existing genetics in single and double-flowered lisianthus that offer consumers and florists a flower of choice.

Lisianthus is a long day response plant.

Flowering is triggered by three factors in order of importance:

- Temperature - warmer temperatures accelerate flowering
- Light intensity - high light intensity accelerates flowering
- Day length - long days accelerate flowering

**Group 1:** winter flower - flower under shortest days

**Group 2:** spring - summer flowering - flower when the days begin to lengthen

**Group 3:** Flower late summer into autumn

**Group 4:** Autumn - winter

WE CARRY A WIDE SELECTION OF VARIETIES - ASK US FOR MORE INFORMATION

## CULTURAL INFORMATION

*NOTE: Groups provided by the breeder sometimes differ from what the customer may experience in their region because different & varying climates can / will affect the specific outcome*

### *Eustoma grandiflora*

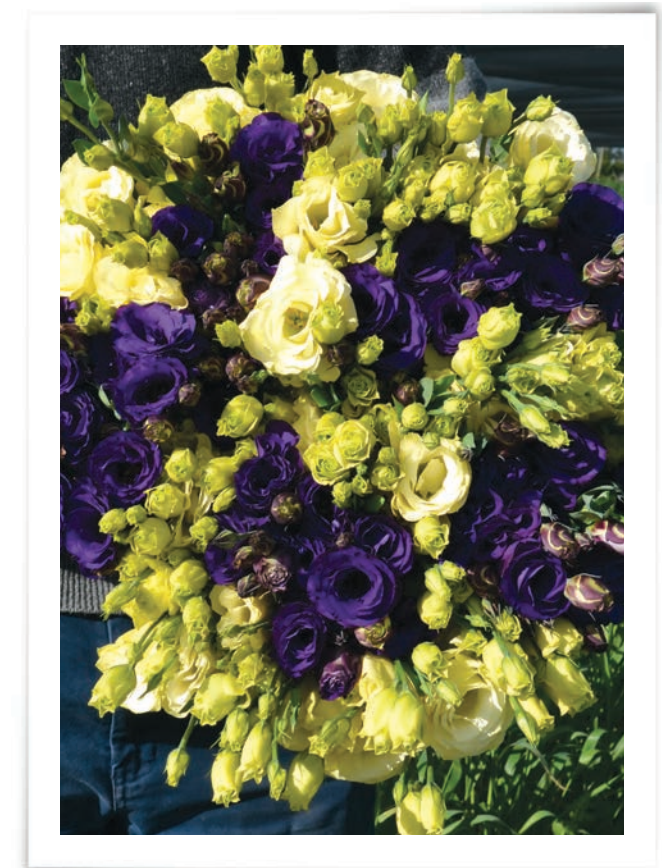
**CROP TIME:** Allow 14 to 18 weeks from plug to flower.

**PLANTING DENSITY:** Two plants per 15 x 20cm netting square.

**PRE-PLANTING:**

- **MEDIA:** Lisianthus should be produced in disease-free soils with a medium initial nutrient charge.
- **pH:** 6.5 to 7.2 - Lisianthus prefers a high pH media.
- High salt levels will delay flowering and can promote rot setting in susceptible varieties.
- It is important for Lisianthus to set deep roots after planting.
- **NETTING:** One to two layers of support netting (15x20cm) are recommended.

**TEMPERATURES:** Cooler growing temperature will add to stem strength and caliper,



*It is best to trial each cultivar to see which one works best for your growing environment and climate. The flowering seasons may, overlap depending upon environmental factors.*

but will increase the production time. Higher temperatures above 82F (28C) during the first four weeks after transplant can induce rosetting in susceptible varieties.

**IRRIGATION:** It is important upon transplanting of plugs that Lisianthus roots set down deep, they need good watering to become established. Begin production with overhead irrigation, then switch to drip irrigation two to three weeks following transplant. Keep the media moist but not wet; allow to dry slightly between waterings. Lisianthus grow slowly at first, and therefore require little water. Do not allow the soil to dry out when plants are in flower.

**FERTILISATION:** Fertilise at every other irrigation with calcium nitrate based fertiliser

at 100 to 200 ppm N, EC: 1.5. Discontinue fertiliser applications as buds become visible.

**HARVEST:** Harvest lisianthus when one or more flowers are open. Harvest in the mornings, when flower and plant tissues are cool.

**POST HARVEST:** Always use clean buckets with fresh cool water and flower preservative for harvested stems.

**INSECTS AND DISEASES:**

- Leafminer (especially when plants are young)
- Aphids
- Thrips
- Whitefly
- Botrytis
- Fusarium
- Pythium
- Rhizoctonia
- Tospoviruses



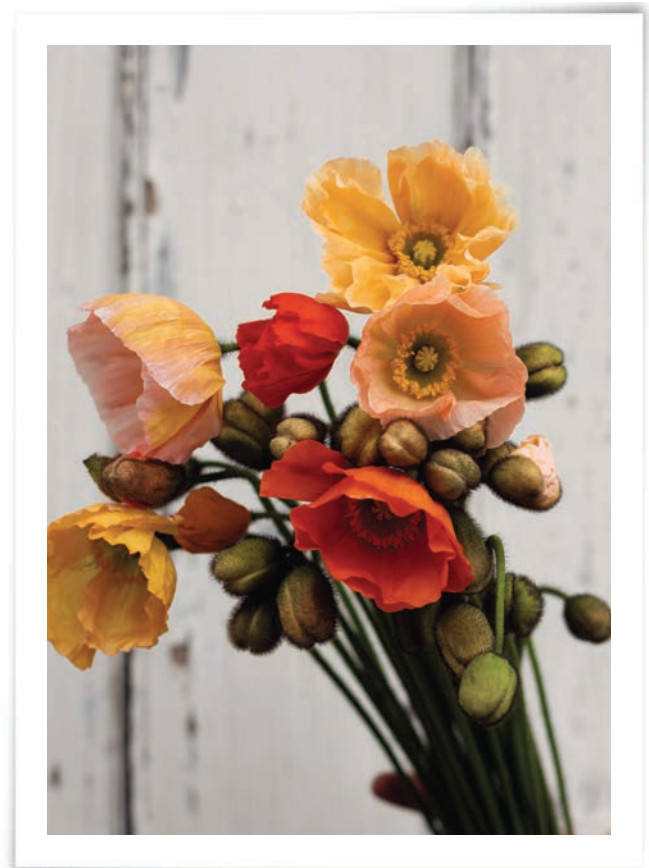
# Poppy Series

- Tissue paper-like blooms
- Grow easily in all climates
- Flowers may be single, double or semi-double
- Florists delight in the colours available
- Suitable for greenhouse or field production

Poppies have a long history, they were grown as ornamental plants in about 5,000 BC in Mesopotamia. The flowers may be single, double or semi-double. The flower buds are nodding or bent downwards, turning upwards as they open. Flowers consist of two layers: the outer layer of two dark furry sepals drops off as the bud opens. The inner layer consists of 4 (but sometimes 5 or 6) brightly coloured petals that expand and unfurl.

Poppies are dramatic on their own or create an artful arrangement when paired with other foliage.

WE CARRY AUSTRALIS, CHAMPAGNE BUBBLES, SPRINGSONG & WINDSONG - ASK US FOR MORE INFORMATION



## CULTURAL INFORMATION

### *Papaver nudicaule*

**CROP TIME:** Allow 10 weeks from plug to flower.

**PLANTING DENSITY:** 15-30cm spacing.

**PRE-PLANTING:**

- **MEDIA:** Plant in free draining soil with good air circulation around the plants.
- **pH:** 5.8 to 6.0
- It is important poppies are sown early enough to ensure they have made sufficient vegetative growth prior to flowering.

**FERTILISATION:** Crops can develop nitrogen deficiency during december, which will reduce yield.

**IRRIGATION:** Poppies require water being available at times that are physiologically

critical to the plants. These times include germination and establishment, vegetative growth, hook stage and flowering and post flowering prior to leaf senescence.

**HARVEST:** Harvest at split bud stage or as soon as you can see the flower colour through the calyx.

**POST HARVEST:** Keep cool at all times. Recut 2 cm off each stem with sharp secateurs, to remove the seared stem end and place in cold water immediately. Do not mix with other flowers for the first 24 hours after stem ends are cut. Preservative is needed, it will help buds to open and flowers to last. Replace water every day

**INSECTS AND DISEASES:**

- Aphids
- Mites
- Snails
- Downy mildew
- Leaf smut
- Sclerotinia

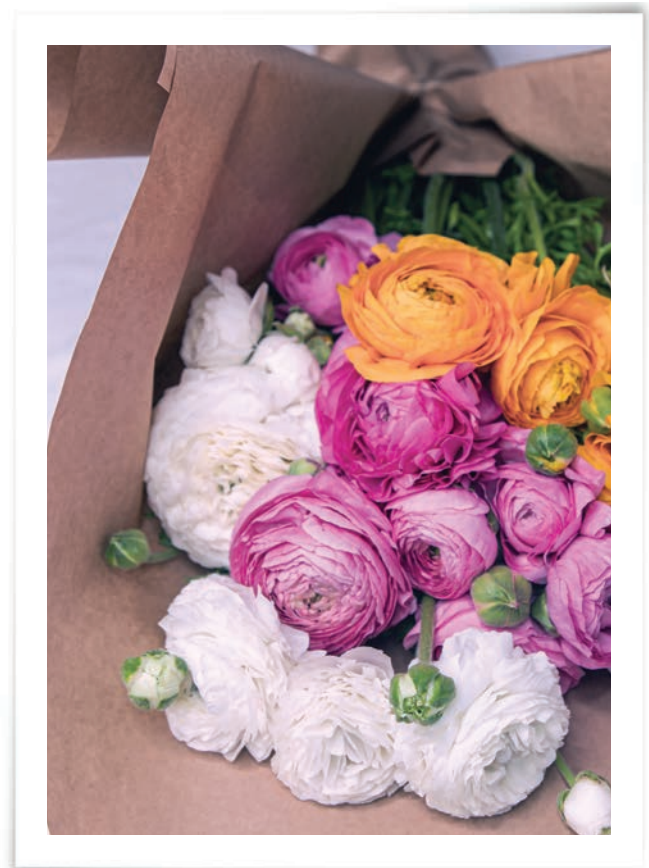
# Ranunculus Elegance

- Blooms are big and uniform
- Elegance has the most consistent flowerhead size
- Florists delight in the colours available
- Suitable for greenhouse production

Elegance ranunculus carry a unique range of colours. Their stems are shorter (30cm-50cm) with their buds making up for their height, with paper-thin petals nestled into a swirly bud perched onto a flexible, bright green stem. They look so intricate they are reminiscent of papier-mâché.

High quality Ranunculus is best obtained with cool night temperatures and short day conditions. Low temperatures and high light levels will result in large flowers with an intense colour.

WE CARRY A WIDE SELECTION OF COLOURS IN THIS SERIES - ASK US FOR MORE INFORMATION



## CULTURAL INFORMATION

### *Ranunculus asiaticus*

**CROP TIME:** Allow 8 to 10 weeks from plug to flower.

**PLANTING DENSITY:** One plant per 15 x 20cm netting square.

**PRE-PLANTING:**

- **MEDIA:** Select a porous media that drains well. This is important during the cool season when temperatures and light levels are low, and media is slow to dry.

- **pH:** 5.8 to 6.0

**TEMPERATURES:** 14°-16°C 2-3 weeks, until the roots have reached the edges of pots. Once established lower temperature to 10°-13°C.

**FERTILISATION:** 14-4-14 or 17-5-17 at 100-150 ppm to maintain an EC of 1.25-1.75. Provide 10-15 ppm phosphorus.

**LIGHTNING:** Ranunculus initiates the highest flower count and the best growth under the natural days for spring production. Daylength extension in combination with high light will promote earlier flowering.

**PINCHING:** Plants are ready for pinch about 3 weeks after planting. This results in well established plants, many shoots and good quality of flowering branches right from the start.

**HARVEST:** Harvesting is done with 2-3 whorls open- not completely open flowers.

**POST HARVEST:** The flowers should be placed in a standing position throughout the whole process including shipments & marketing.

**INSECTS AND DISEASES:**

- Cercospora ranunculi
- Pythium Root Rot
- Botrytis
- Tomato
- Spotted Wilt Virus
- Aphids
- Whitefly
- Leaf miner
- Thrips
- Fungus Gnats



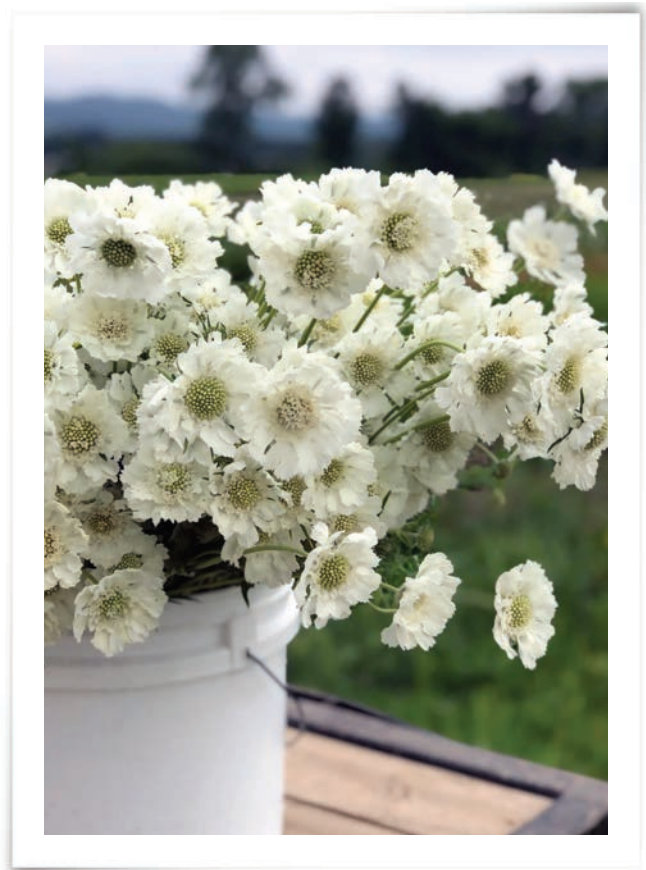
# Scabiosa Fama

- Huge, delicate blooms
- Happy in dry summer heat with minimal irrigation
- A favourite for flower arrangers
- Suitable for greenhouse or field production

Scabiosa are extremely long-blooming compact, clump-forming perennials with uniquely shaped, eye-catching flowers. The flowers of Fama are exceptionally large and uniform. Multiple pincushion-shaped flowers produced all season, available in deep blue and white. An excellent, long lasting cut flower.

This series has a high heat tolerance and needs well drained soil.

**TWO COLOURS AVAILABLE IN THIS SERIES - ASK US FOR MORE INFORMATION**



## CULTURAL INFORMATION

### *Scabiosa caucasica*

**CROP TIME:** Allow 15 to 20 weeks from plug to flower.

**PLANTING DENSITY:** One plant per 15 x 20cm netting square.

**PRE-PLANTING:**

- **MEDIA:** Loamy sandy to sandy humus soils with good drainage and good nutrition levels.
- **pH:** 5.8 to 6.5
- **NETTING:** Support netting 15 x 20cm is recommended.

**TEMPERATURES:** Grow at 12-15 °C or outdoors. Overwinter indoors frost free at 3-5 °C.

**FERTILISATION:** Moderate fertilisation levels are required. Fertilise the crop weekly with 130-150 ppm nitrogen (at 2 kg/m<sup>3</sup> slow release fertiliser in substrate), using a

complete balanced fertiliser. Don't fertilise after mid september. In spring fertilise 150-200 ppm nitrogen of a potassium balanced fertiliser (N: K<sub>2</sub> O-ratio: 1:1,5). Prevent magnesium deficiency by applying magnesium sulphate (0,05 %) 1-2 times and in case of iron deficiency (above pH 6.0) apply iron-chelate 1-2 times.

**LIGHTNING:** Above 11 hours of day-length, natural and spontaneous flowering occurs. In regions where day-length is shorter than 11 hours, supplementary lighting of 4-6 hours should be provided, depending on the environment temperatures. When day length exceeds 11 hours there is no need to provide lighting for

the Scabiosa plants unless it is very cold or there is a will to accelerate flowering.

**PINCHING:** Plants are ready for pinch about 3 weeks after planting. This results in well established plants, many shoots and good quality of flowering branches right from the start.

**HARVEST:** Harvesting is done with 2-3 whorls open-not completely open flowers.

**POST HARVEST:** The flowers should be placed in a standing position throughout the whole process including shipments & marketing.

**INSECTS AND DISEASES:**

- Downey Mildew
- Sclerotinia sclerotiorum

# Snapdragon Potomac Series

- Suitable for bouquets, solid bunches and makes great flower arrangements
- Suitable for greenhouse or field production

The Potomac series produces tall, strong, sturdy stems and long, well-defined spikes with good flower quality. Outstanding colours they are well suited for solid bunches and bouquets.

Snapdragons can be produced year round in most climates. Varieties are categorised into groups based on their optimum growing conditions.

**Group 1:** Short days, low light, night temps 7-10 degrees c

**Group 2:** Short days, (but not as short as group 1), moderate light, night temps 10-13 degrees c

**Group 3:** Medium to long days, moderate to high light, night temps 10-16 degrees c

**Group 4:** high light, long days night temps higher than 16 degrees c

WE CARRY A WIDE SELECTION OF SERIES - ASK US FOR MORE INFORMATION

## CULTURAL INFORMATION

### *Antirrhinum majus*

**Note:** Please ensure you research the best 'Seasonal Group' for your local growing conditions.

**CROP TIME:** From planting, approximately 9 to 12 weeks.

**PLANTING DENSITY:** Three plants per 15 x 20cm netting square.

**PRE-PLANTING:**

- **SOIL:** Well levelled, loose soil with no clumps; tilled to at least 25 cm deep.
- **pH:** 5.0 to 6.0
- **NETTING:** Two levels

**FLOWERING GROUPS:**

Snapdragons are grouped based on the response of the varieties to night time temperatures, light intensity and day length:

**Group 1:** Night: 45-50F (7-10C), Day: 50-55F (10-13C)

**Group 2:** Night: 50-55F (10-13C), Day: 55-60F (13-15C)



**Group 3:** Night: 55-60F (13-15C), Day: 60-65F (15-18C)

**Group 4:** Night temperature above 60F (15C)

Generally, the lower temperatures in the ranges give the best quality, but at the expense of a longer crop time.

**IRRIGATION:** Begin production with overhead irrigation. Then switch to drip irrigation one week after transplant.

**FERTILISATION:** Feed at 100-150 ppm NPK, EC: 1.0 to 1.75. Feed for the first week, then give little or no feed. Excessive side shoots are an indication of high moisture or fertilisation levels.

**HARVEST:** Harvest stage should be 40% to 50% open. Premature harvesting leads to

poor colour development and reduced flower size as flowers continue to open.

**POSTHARVEST:** Immediately after cutting, place the flowers in an STS solution for four hours to prevent ethylene damage (shattering). Remove foliage on the lower stems, grade and bunch.

**STORAGE:** Snapdragons should be stored and shipped upright to prevent curvature of the spikes.

**PRUNING:** Do not prune. Re-plant after each bloom cycle.

**INSECTS AND DISEASES:**

- Botrytis
- Leafminer
- Thrips
- Aphids
- Mildew
- Rust



# Stock Iron Series - (Matthiola)

- Great accent item that provides fragrance, volume and colour to bouquets and arrangements
- Suitable for greenhouse production

Stock (Matthiola) is an old-time favourite that has never gone out of style.

The Iron series combines all the desirable characteristics of the standard stock, such as sweet fragrance, bright colours, plus an amazingly full flower spike.

This full-blooming spike makes it desirable in flower arrangements as well as in the increasingly popular bouquet business. It's an excellent choice for high-end flower decorations, too.

WE CARRY A WIDE SELECTION OF SERIES - ASK US FOR MORE INFORMATION

## CULTURAL INFORMATION

### *Matthiola incana*

*Note: Stock seed produce both single and double flowers.*

**CROP TIME:** 11 weeks. Crop time is dependent on day-length and light intensity. As a general rule, with day-length of 13 hours or more, the crop time will be 10 weeks. Shorter days will slow down the crop time (depending on the temperature) to 15 weeks.

**PLANTING DENSITY:** One plant per 15 x 20cm netting square.

**PRE-PLANTING:**

- **SOIL:** Well-drained, loose soil at least 25cm deep. Avoid hard packed soil.
- **pH:** 5.0 to 6.0
- **NETTING:** One level of support netting 15 x 20cm is recommended.

**IRRIGATION:** Begin production with overhead irrigation, then switch to drip irrigation one week after transplant. Keep at field capacity for the first four weeks, depending on the climatic conditions.



Allow to dry slightly between waterings; the more mature the plants are, the drier you can go. In the end, go a little drier to get a stronger stem and a better flower form.

Avoid conditions that are too wet or too dry. Wet conditions can cause diseases. Dry conditions can cause wilting and lower leaf chlorosis, which then exposes plants to other infections.

**FERTILISATION:** Begin fertilisation one week after transplanting and continue fertilising until the end of the crop time. When stock is sown on a rotation program with crops that are heavily fertilised (i.e. carnations), there is no need to fertilise the first sowing after the rotation. Apply potassium nitrate starting on week six to improve the flower spike. Ideal EC: 1.0 to 1.3.

**HARVEST:** Stems can be harvested when 35% to 50% of

the flowers are open, depending on your market demand. Begin hydrating newly cut flowers while still in the greenhouse

**POST HARVEST:** Floral preservatives are useful in extending vase life. Use anti-shatter for two hours and then use a bactericide solution for at least eight hours before putting into coolers. Stems should be pre-cooled prior to shipping at a temperature of 34F (1C) for an optimal postharvest life. Stems can be packed flat.

**INSECTS AND DISEASES:**

- Leafminer (especially when plants are young)
- Sclerotinia
- Caterpillars
- Thrips
- Downy mildew
- Bacteria blight
- Botrytis• Pythium
- Fusarium
- Xanthomonas

# Statice Sinuatum (QIS)

- Essential filler for bouquets, corsages and other arrangements
- Suitable for greenhouse or field production

Recognised as a real winner by professional cut flower growers the world over, statice QIS (Quality in Seed) is a considerable improvement over standard varieties in uniformity, colour, flower size and stem quality. The plants produce clouds of tiny, non-shattering flowers and deliver shipability and long vase life.

WE CARRY A WIDE SELECTION OF COLOURS IN THIS SERIES - ASK US FOR MORE INFORMATION



## CULTURAL INFORMATION

### *Limonium sinuatum*

**CROP TIME:** Allow 15 to 16 weeks from planting, plus three to four weeks in production.

**PLANTING DENSITY:** Six plants per square mtr.

**PRE-PLANTING:**

- **SOIL:** Well-drained, loose, sandy soil with no clumps: tilled to at least 25 cm deep.
- **pH:** 5.0 to 6.0
- **EC:** 1.4.
- **NETTING:** According to plant growth.

**PINCH:** Soft pinch when the first stem has induced. Be careful not to pinch too low because the stems can open up, then rot.

**STEM INDUCTION:** Cold conditions are more favourable for vernalization and flower induction. Apply 150 ppm of gibberellic acid (GA) five weeks after planting. A second application of GA can be used to help plants that have not induced.

**IRRIGATION:** Maintain constant moisture (field capacity) during the first six weeks. Avoid excessive irrigation. Reduce irrigation by 40% during production. In perennials, increase irrigation gradually one week after harvest.

**HARVEST:** Harvest when 70% to 80% of the flowers are open.

**POST HARVEST:** Place in clean water with bactericide.

**INSECTS AND DISEASES:**

- Botrytis
- Powdery mildew
- Cercospora
- *Pseudomonas caryophylli*
- *Pseudomonas solanacearum*

# Sunflowers

- Excellent, long-lasting flower show
- Use as single arrangement or large floral displays
- Best for field production

On offer we have single stem and multi branching spray types. Normal, compact and dwarf heights available. Petal colours include yellow, orange, rust, chocolate, lemon, peach, lilac and mauve. This range represents a major advancement in sunflower breeding.

Sunflowers are a heat-loving plants and will not tolerate frosts. They make an excellent focal point either on their own or as cheery bouquet.

**WE CARRY A WIDE SELECTION OF SERIES - ASK US FOR MORE INFORMATION**

**NOTE:** Sold in seed form only- Sourced locally as we are unable to import Sunflower seed due to potential bio security risk to our own Sunflower seed oil Industry.



## CULTURAL INFORMATION

### *Helianthus annuus*

**CROP TIME:** Allow 70-80 days from sowing of seed. Sow seed from late winter till early autumn.

**PLANTING DENSITY:** Plant seed at 6cm apart and 3-5cm deep.

**PRE-PLANTING:**

- **SOIL:** Well-moistened loose soil with no clumps, tilled to 25cm deep for best results.

- Less frequent, deeper watering is preferred to help plants tolerate periods of hot-dry weather.

**IRRIGATION:** Keep moderately moist to a depth of 30cm, leave for 2-3weeks to encourage a primary tap root.

**TEMPERATURE:** Keep soil temperatures above 10c. In warmer climates, sunflowers are best planted in march to october.

**HARVEST:** Sunflowers should be harvested as soon as the petals start to lift from the center disc. If the sunflower is fully open, the vase life will be drastically shortened, and the petals may fall from the disc a short time after harvest.

**POST HARVEST:** Use a sharp pair of pruners to cut the stems. Remove the bottom three-fourths of leaves from the stem and place them in a clean bucket.

**DENSITY:** The closer sunflowers are planted, the smaller the flowers. This is an effective way to grow different flower sizes for different uses.

**INSECTS AND DISEASES:**

- Botrytis
- Mildew
- Aphids
- Thrips
- Whiteflies
- Ethylene sensitive



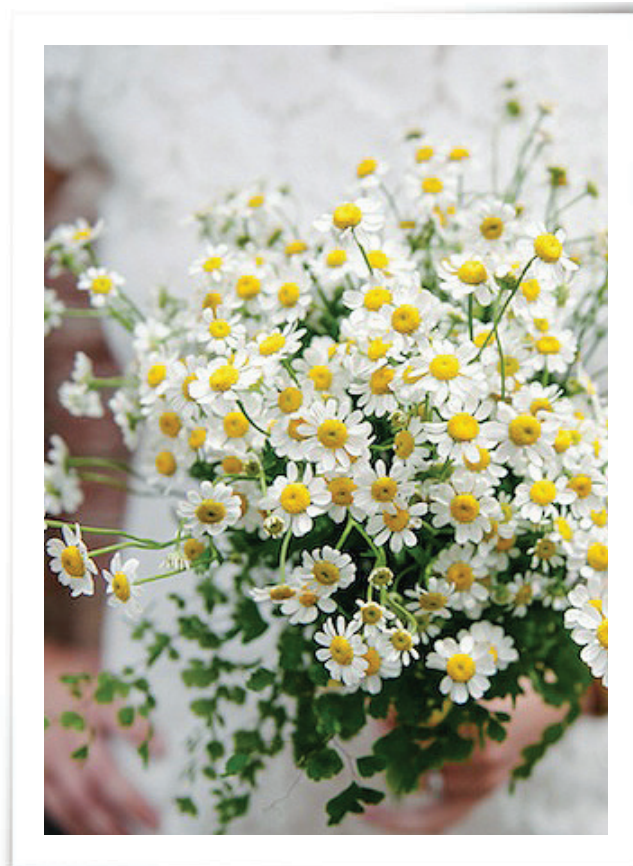
# Matricaria

- Perfect for bouquets and solid bunches
- Suitable for greenhouse or field production

Matricaria is the perfect florist filler foliage with a sweet scent. A fast year-round crop with good uniform stems and reliable post-harvest life.

This product has excellent repeat harvest capabilities, offering a profitable return. For florists it is an ideal filler plant or perfect informal bouquets.

WE CARRY A SELECTION OF VARIETIES - ASK US FOR MORE INFORMATION



## CULTURAL INFORMATION

### *Tanacetum parthenium*

**CROP TIME:** Allow 10-14 weeks from plug to flower

**PLANTING DENSITY:** One plant per 15 x 20cm netting square.

**PRE-PLANTING:**

- **SOIL:** Well-drained loose soil with no clumps, tilled to 25cm deep for best results.
- **pH:** 5.6 to 5.9
- Stem length is affected by daylength, temperature and fertility. High temperatures during induction will result in shorter stems.
- Matricaria is not sensitive to ethylene.

**FERTILISATION:** Soil EC levels should be maintained at 0.2 to 0.6 during crop production. When fertilising through the irrigation system, maintain EC levels from 0.8 to 1.2. Very high EC levels promote

lack of plant uniformity. Utilise potassium nitrate during the bud formation. Matricaria is sensitive to high salts.

**LIGHTING:** Matricaria has an obligate long day flowering response. Critical daylength is 14 hours.

**HARVEST:** Harvest when stem has 65-75% of flowers open.

**POSTHARVEST:** Use a holding solution for best performance.

**INSECTS AND DISEASES:**

- Aphids
- Leaf miners
- Lepidopterous larvae
- Thrips
- Botrytis
- Pythium
- Rhizotonia
- Sclerotinia
- Tospo viruses

# Zinnia Queeny Series

- Big bold colours on strong stems
- Provides cut flower gardeners and florists with wonderful hues for today's floral trends
- Suitable for greenhouse or field production

This show-stopping series is highlighted by the unique and individual colours available. Resembling dahlias, they are borne on long, sturdy stems and bloom profusely over a lengthy season. The petals lighten towards the centre, creating a tonal appearance with a dark centre.

Perfect for cut flower gardens and florists, making them desirable in flower arrangements as well as in the increasingly popular bouquet business.

**FOUR COLOURS AVAILABLE IN THIS SERIES - ASK US FOR MORE INFORMATION**

**NOTE:** Benary's Giants also available, please contact us for more information.



## CULTURAL INFORMATION

### *Zinnia elegans*

**CROP TIME:** Allow 9-12 weeks from sowing.

**PLANTING DENSITY:** 20-30cm deep.

**PRE-PLANTING:**

- **SOIL:** Use a well-drained, disease-free soilless medium with a medium initial nutrient charge
- **pH:** 5.5 to 6.2

**IRRIGATION:** Water early in the day to allow leaves to dry rapidly. Use drip irrigation systems to minimize wet foliage which leads to disease problems.

**FERTILISATION:** Fertilise every irrigation with 50-75 ppm from 13-2-13. Maintain medium electrical conductivity around 1.0 mmhos/cm.

**HARVEST:** During the cool time of the day. Harvest when flowers are fully open.

**POST HARVEST:** Remove stems from the field asap and cool.

**INSECTS AND DISEASES:**

- Alternaria leaf spot
- Aster Yellows
- Bacterial Leaf Spot
- Powdery Mildew

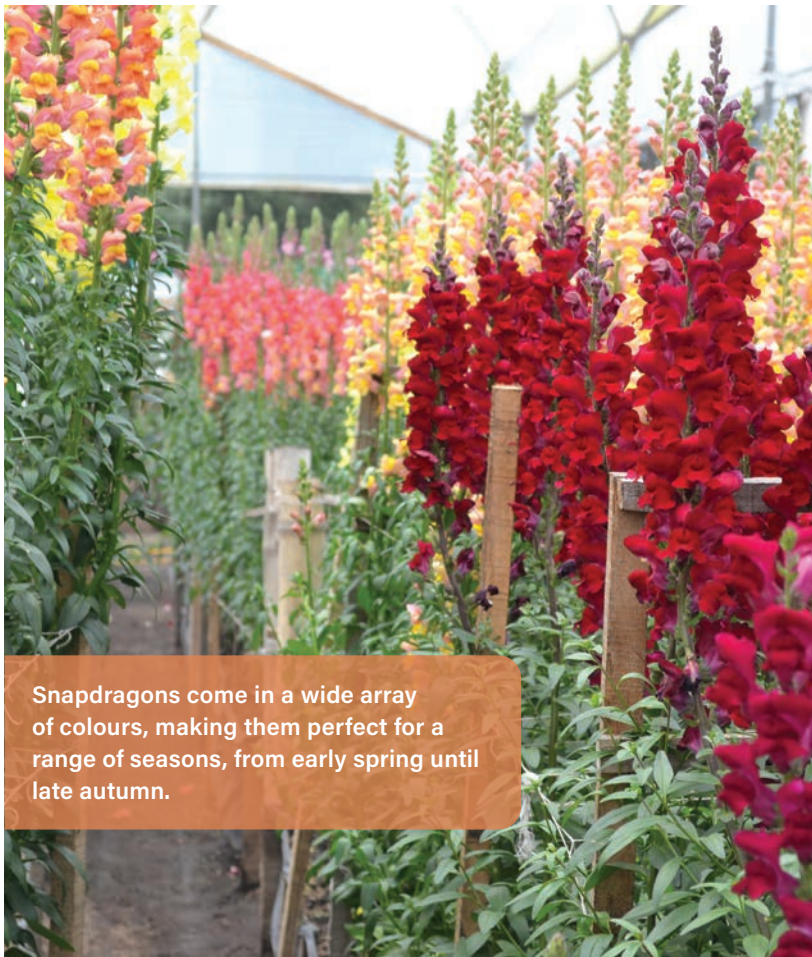




Stock plugs after planting. Irrigation and netting are already in place. These are planted at about eight plants per sq. ft.



Stock in production. Note netting has been raised to support the stems. This greenhouse is equipped with raised beds, and is appropriately weed free and tidy. Essential to preventing diseases.



Snapdragons come in a wide array of colours, making them perfect for a range of seasons, from early spring until late autumn.

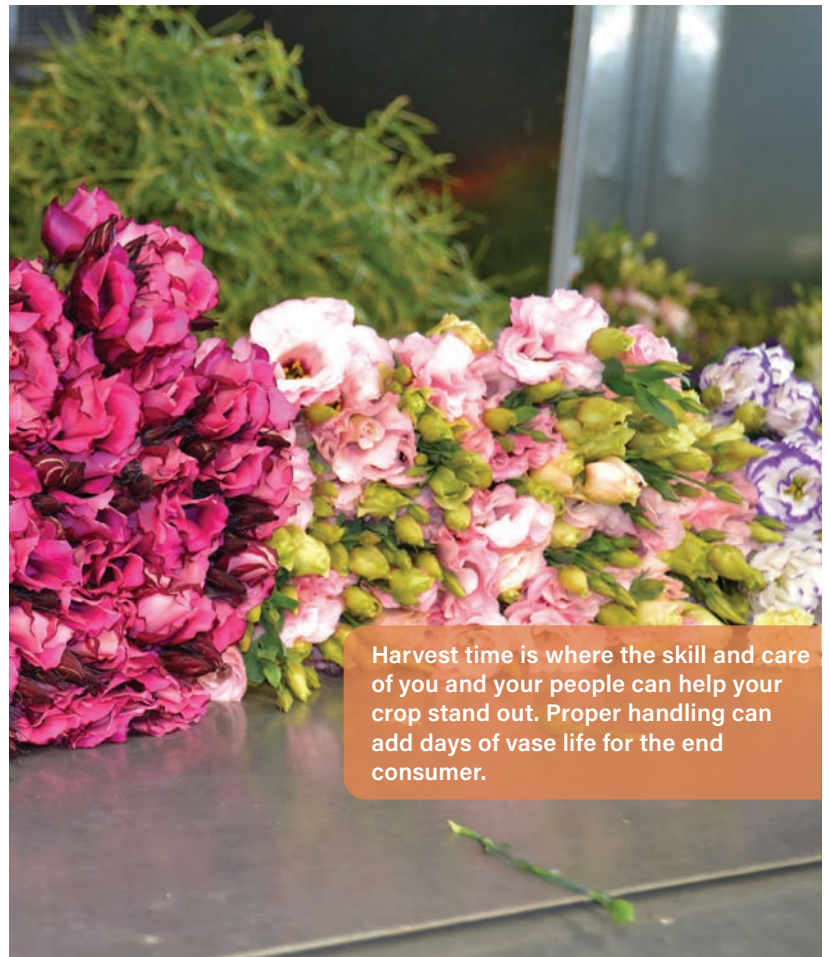


Traditionally used primarily in autumn, ornamental kale actually lends its unique shape, texture and colour to a wide range of uses, seasons and holidays.





Lisianthus correctly wired and supported on raised beds.



Harvest time is where the skill and care of you and your people can help your crop stand out. Proper handling can add days of vase life for the end consumer.





Whether you are planting and growing an annual or perennial as a bedding plant, or planting and growing it as a cut flower, there is not as much difference as you might think. The same principles apply: good soil, appropriate amounts of irrigation and fertiliser, a little bit of care and some grower common sense, and you are ready to go.

# How To:

## BED PREPARATION

There's an old farmers' saying: 'Good roots' will keep your feet on the ground.' In the case of cut flowers, it's no different: good roots give power and vitality to an already powerful and full product.

Soil preparation starts with weed removal and tillage, either chemical or mechanical. First, beds must be as level as possible. Next, when applying chemical herbicides, be sure they won't affect the crop you are going to plant. Once the bed is weed-free, loosen the soil with a rototiller to at least 25cm deep. Loose soil on top is important, but a deeply tilled bed provides air and water pockets that allow roots to grow.

You can also build raised beds, which allow excellent drainage and air flow.

In either case, you'll want to test your soil for pH and nutrients, taking samples in a zig zag pattern along the beds. Dig at least 15cm when taking samples. Optimum pH is between 6.0 and 7.0.

Be sure to mark your sample locations so you know where any deficiencies are located. Use a granular chemical or organic fertiliser before planting.





### NETTING

Not all crops require support netting, but for those that do it is a lot easier to install netting before planting. Netting is vital to keep your flowers upright; depending on your crop, you may have to use multiple levels depending on the length of stems. Plus, the netting helps you to sow your seed or plant your plugs in an evenly spaced pattern more easily.

This table will help you determine appropriate planting density.

NETTING SIZE 15 X 20CM	PLANTS PER SQUARE
Delphinium	1 every other square
Snapdragon	3 per square
Lisianthus	2 per square
*Other crops that needs support	1 per square

\* Except Limonium, which requires a wide spacing of one plant per 2 sq. ft.

### IRRIGATION

Drip irrigation is the best way to provide water, as it provides the exact amount of water and fertiliser you need to apply, with no waste and without getting your foliage and flowers wet.

A standard overhead sprinkler system works, too, but with more waste, and more risk of disease due to wet plants.



# How To: BUILD BOUQUETS



To create eye-catching bouquets that sell, be sure to apply these five fundamental principals to your designs.

## FLOWER STRUCTURE

Use different structures of flowers in a mixed bouquet to create excitement. The various structures are as follows:

### FILLER

*spray*



### FOCAL

*round*



### LATERAL

*spiked*



### GREENERY

*spray*



### FILLER

*shaped*



### FOCAL

*shaped*



### LATERAL

*shaped*



### GREENERY

*fanned*



## COLOUR

The colours you choose will be the first thing that catches the customers' eyes.

The five important colour combinations are:

*monochromatic*



*complementary*



*warm*



*cool*



*fashion*



NOTE: Seasons, holidays and the fashion industry (clothing and interior design) are important influences on colour combinations that appeal to consumers.

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CUT FLOWER

*Guide*