

how to grow PotMums

PLANTING

- ▶ This is the most critical period in the production of a quality Pot Mum crop. Most growers plant the rooted cuttings directly into the final container whenever the space is available. Be prepared – have all the containers filled and the media slightly moist.
- ▶ A lighter, well-drained media makes deeper planting less risky. In a heavier media, root loss will delay take-off, reducing the quality of the finished crop.
- ▶ It may be necessary to mist or syringe the newly planted cuttings for the first few days after planting to prevent wilting.
- ▶ Water the cuttings in with fertilizer such as 20-10-20 at 250 to 300 ppm.
- ▶ If outdoor temperatures are cool (nights in the 10 to 15°C, it is recommended that the plants be started in a greenhouse where the night temperatures can be maintained in the 15 to 20°C, with 18°C being ideal. Better take-off and initial growth will be seen.

PINCHING

- ▶ Pinching encourages lateral branching which promotes a fuller plant with high flower count. Don't pinch until the plants are established in the pot with a good root system. Plants should also have at least 25mm of new growth before their pinch.
- ▶ This should be approximately 12 to 14 days after planting in spring and summer months. When pinching, take out 15 to 25mm of new growth, leaving 5 to 7 leaves on the plant.

TEMPERATURE

- ▶ Many times in late Spring to early Summer, cool nights may trigger premature bud formation. One cool night at 10°C will not do this, but several days or more of cool temperatures can promote crown bud formation. This is not desirable and may cause the plants to finish too small.
- ▶ The best solution is to start the crop in the greenhouse if you are in an area that has cooler night temperatures in the Spring. However, a little crown bud formation followed by warm night temperatures will be no problem, as the plants will go back to being vegetative and grow around the crown buds.
- ▶ If crown bud formation occurs, applications of Florel and pinching will help to promote vegetative growth. Most importantly, be sure fertility levels are high.

HEAT DELAY

- ▶ High day and night temperatures may cause heat delay. As temperatures increase, there is a point when chrysanthemum flower initiation and development begin to slow down. Some varieties are more sensitive than others. All efforts should be made to minimize extremely high day and night temperatures.
- ▶ Suggestions to avoid heat delay for shaded crops:
 - Start cooling very early in the morning
 - Cool at night with a pad and fan system that pulls air under the black cloth
 - Close the black cloth late in the day at 8 p.m. to avoid heat buildup and leave the cloth closed until 8 am
 - For enhanced cooling, a computerized black cloth system may be programmed to open after the sun has set and closed before the sun rises
 - Cover before sunrise versus evening

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IRRIGATION & FERTILISATION

- ▶ Pot Mums may be grown using overhead irrigation, sub-irrigation and drip methods. A drip irrigation system is often the best choice as it keeps the foliage dry to prevent spotting of the leaves and also reduces the chance of developing foliar disease problems.
- ▶ When irrigating, apply enough water to thoroughly wet the soil mass. At each irrigation there should be adequate water applied to drip from the container. Never allow the plant to wilt during the early stages of production.
- ▶ It is very important to fertilize immediately after planting. Watering in with a fertilizer solution is recommended. A constant liquid feed program using a 20-10-20 type of fertilizer at a rate of 250 to 350 ppm will usually work well. In some growing situations, other formulations may be better. A program of regular soil testing is the best guide to determine the optimum fertilization program.
- ▶ Slow-release fertilizers such as Osmocote, in combination with liquid feeds, may also be used.
- ▶ Once you see colour in the crop, stop feeding and finish the crop with fresh water, which will improve the post-harvest shelf life.

HEAT CONTROL & GROWTH REGULATORS

NOTE: With all growth regulators we recommend an initial small-scale trial.

- ▶ Alar has been used for decades for height control, and is the preferred chemical to improve the quality of a mum crop.
- ▶ Alar applications not only control height but also produce darker, greener leaves and stronger stems.
- ▶ An application at 5,000 ppm 2 to 3 weeks after planting may be necessary to control the more vigorous varieties, especially for greenhouse-forced Summer-flowering crops.
- ▶ Alar may not be necessary for most Pot Mums grown outside.
- ▶ Bonzi is also a very effective chemical, but takes more skill to apply correctly. A 1 or 2ppm drench when the plants are at the desired finished height will stop the growth. Growers must be extremely careful when using Bonzi.

PESTS & DISEASES

- ▶ An IPM (Integrated Pest Management) program is the best defence against the various insects and related pests that attack a mum crop. Constant monitoring of the crop will enable the grower to detect pests before they become a problem and take appropriate action to control them. Culture-indexing programs being done by the propagator have overcome many diseases of mums, but there are still a number of root, stem, foliar and flower diseases, which the grower might face.
- ▶ The best control is to start with clean cuttings and growing media. Proper control of the environment, heat, moisture, ventilation, etc. will then be the best defence.
- ▶ There are many effective chemical and natural controls for the numerous insects and diseases that attack mums. Before using any pesticides, check with local agencies in your state to ensure they are registered for specific use. Always follow the labelled rates and application methods.

Three Ways to Order:

Customer Service

• By Phone: (03) 9798 5355

• By Fax: (03) 9798 3733

• By Email: orders@ballaustralia.com



PotMums
chrysanthemum collection



Bali
Australia



Be Bop Rose - Bi-colour
response time | 9 weeks



Pink Zumba - Bi-colour
response time | 9 weeks



Kena Pink - Large Double
response time | 9 weeks



Kena White - Large Double
response time | 9 weeks



Yellow & Red Rap - Bi-colour
response time | 9 weeks



Pink Biguine - Double
response time | 9 weeks



Kena Yellow - Large Double
response time | 9 weeks



Red Choke - Single
response time | 9 weeks



Purple Quadrille - Double
response time | 9 weeks



White Reggae - Double
response time | 9 weeks



White Jerk - Single
response time | 9 weeks



Yellow Jerk - Single
response time | 9 weeks



Yellow Pogo - Double
response time | 9 weeks



Kena Copper - Large Double
response time | 9 weeks



Fontana Yellow - Spider
response time | 10 weeks



Paso Double White - Spider
response time | 9 weeks

PROGRAMMING RECOMMENDATIONS

- ▶ Chrysanthemums are short-day plants and initiate flower buds in response to an interaction of day length, temperature and plant age. The time to plant depends on projected sales date, size of the container, number of cuttings per container, variety and local climatic conditions.
- ▶ A minimum of 12 hours darkness defines short days and is required for flowering. For months with less than 12 hours darkness, short days need to be provided manually.
- ▶ Black cloth or 4 to 6ml black plastic can be used to provide an impermeable light barrier over the crop. The material is pulled over the crop to provide 12 to 15 hours of darkness daily. To reduce heat build-up, which can delay flowering, a 7 p.m. to 7 a.m. schedule is helpful. Panda plastic is a preferred material with the white side up to reflect the light, reducing heat. Some growers use supports and nylon wire slightly above the crop or simply lay the plastic right on the plants and hold it down along the edges with pipes, soil, or stones. This may not be that easy to manage during heavy rains or wind. A better structure can be made from 3m electrical conduit or PVC pipe at 2.4 to 3m spacing. These are bent and stuck into pipe driven into the ground. The material is then pulled over the frame at the end of the day.
- ▶ It is best to black cloth the crop until the buds are well formed and show colour.
- ▶ Our variety offerings are all 9-10-week response times so planting should be scheduled approximately 9 weeks prior to desired finish time.
- ▶ It is important to plant your plugs right away. Holding plugs will stunt their growth and significantly reduce final product quality.

PLANTS PER POT & SPACING

- ▶ A key to excellent quality, spacing depends on the pot size and the desired finished product.
- ▶ Spacing plants too tightly promote weak, stretched and poor-quality plants. Disease problems are also more likely to occur.
- ▶ The number of plants per pot (ppp) varies depending on the pot size.
- ▶ The chart below shows recommend plants per pot and pot spacing

CONTAINER SIZE	PLANTS PER POT (PPP)	FINAL SPACING
125 mm pot	1	15 x 15 cm
140 mm pot	1	25 x 25 cm
200 mm pot	2	40 x 40 cm
25cm hanging basket	3	50 x 50 cm
30cm hanging basket	4	65 to 70 cm

MEDIA

- ▶ Choose a well-drained mix, but avoid mixes that are too light and may dry out too rapidly.
- ▶ The starting pH in a soil-based mix should be 6.0 to 6.5, and in a soilless mix slightly lower at 5.8 to 6.4.

LIGHT INTENSITY

- ▶ Pot Mums should be grown in full sun.
- ▶ Newly planted cuttings may need light shade for a few days until they are fully established.

all **PotMums**
are available in a 144 tray

