

(*Dianthus barbatus*)

Annuals Culture (revised 12/02/24)

It's your turn to win with Dart! Save money on crop time, heating, chemical use and space in the greenhouse. Dart is 1 to 2 weeks earlier than the competition, with no heat required for production. And, it requires fewer to no PGRs to fit in a range of pot sizes, saving growing space as well as making shipping easier.

Plug crop time: 4 to 6 weeks

Transplant to finish: Spring/late Spring 9 to 11 weeks, late Summer/Autumn 5 to 7 weeks (outdoors)

- Dart doesn't require heat for production, compared to other Spring products.
- Naturally fits in more pot sizes with fewer to no PGRs, and more plants can be grown per ft²/m² compared to other varieties.
- More layers can be transported on a rack due to the compact habit.
- Dart shows much more colour at retail compared to competing series, and has the potential for more blooming.
- Suitable for both small (4 in./13 cm, 6 in./15 cm, quarts) and larger (8 in./19 cm, gallon, 2 gallon) pots.
- Fits nicely into retail programs due to its versatility in all pot sizes and a uniform flowering window for all colours except Scarlet, which is 1 week later to flower.

Exposure	Bloom Season	Height	Spread	Spacing
Sun	Early Spring, Spring, Late Spring, Summer, Late Summer, Autumn	6-12 in. (15-30 cm)	6-8 in. (15-20 cm)	

Seed Form	Recommended Plug Size	Seeds/Cell	Plug Crop Weeks	Days from 50% to maximum germination	Initial Media pH/EC (1:2)	Cover Seed
PEL	288	1	5-6	5-7	5.8-6.2 pH 0.75 mmhos/cm	Yes

	Stage 1	Stage 2	Stage 3	Stage 4
Moisture	Level 4	Level 3-4	Level 2-3	Level 2-3
Temperature	64-68°F (18-20°C)	65-70°F (18-21°C)	60-65°F (16-18°C)	55-60°F (13-16°C)
Light	Optional	5-8 mol·m ⁻² ·d ⁻¹	8-10 mol·m ⁻² ·d ⁻¹	10 mol·m ⁻² ·d ⁻¹
Fertiliser		Less than 100 ppm N (Less than 0.7 EC)	100 to 175 ppm N (0.7 to 1.2 EC)	175 to 225 ppm N (1.2 to 1.5 EC)
PGR			paclobutrazol/5 ppm/Spray	

Growing on Temperature	Target Media pH/EC (1:2)	Fertiliser	Daylength
(day) 65-75°F (18-24°C) (night) 43-60°F (6-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	175 to 225 ppm N (1.2 to 1.5 EC)	Facultative Long Day

Dart is lightly sensitive to daylength. Temperature and light intensity have higher impact on flowering timing/crop time than daylength.

Crop Scheduling

Container Size	Plugs/Pot	Crop Time	Season	PGR
4"/4.5"/Quart/10 cm	1 (ppp)	8-11 (weeks)	Spring	paclobutrazol 0-5 ppm Spray
5"/6"/1 Gallon/15 cm	1-2 (ppp)	8-11 (weeks)	Spring	paclobutrazol 0-5 ppm Spray
8"/2 Gallon/20 cm	3 (ppp)	9-12 (weeks)	Spring	paclobutrazol 0-5 ppm Spray
4"/4.5"/Quart/10 cm	1 (ppp)	6-9 (weeks)	Autumn	paclobutrazol 0-5 ppm Spray
5"/6"/1 Gallon/15 cm	1-2 (ppp)	6-9 (weeks)	Autumn	paclobutrazol 0-5 ppm Spray
8"/2 Gallon/20 cm	3 (ppp)	7-10 (weeks)	Autumn	paclobutrazol 0-5 ppm Spray

Fertiliser Notation

Starting a week after transplant, apply fertilizer at a rate of 175 to 225 ppm N once a week from nitrate-based fertilizer with low phosphorus.

Common Problems

Pests: Thrips, Aphid, Mites Diseases: Powdery Mildew, Botrytis

Finishing Key Tips

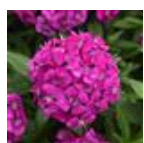
Dart is a naturally compact plant. Responds well to paclobutrazol (bonzi) when necessary. Dart will benefit from being grown under high light levels for promoting plant branching and flower colour and quality. Plants grow bigger and fill pots easier under higher DLI. Providing high light will also keep plants compact and will reduce the need for PGRs. Plants will develop faster and will be earlier to flower when temperatures increase. Total crop time will be around 2 weeks faster when average day temperatures change from 62°F/16°C to 68°F/20°C. Dart can be grown cool in outdoor containers, field or in cool tunnels after transplant at 40°F/5°C night temperatures. Greenhouse production is possible as well. Avoid Summer finishing. Plants will develop very fast due to high temperatures and stay much more compact. Example: To fill a 5"/6"/Gallon/15 cm, 1-2 ppp are necessary. Autumn finishing is possible as well. Plants will finish faster because of higher average day temperatures. For southern areas with mild winters, Winter and early Spring production can be done as well. Lower average day temperatures increase flower shelf life. Pinching is not required or needed.

NOTE: Growers should use the information presented here as guidelines only. PanAmerican Seed recommends that growers conduct a trial of products under their own conditions. Crop times will vary depending on the climate, location, time of year, and greenhouse environmental conditions. It is the responsibility of the grower to confirm the treatment is available in their region as well as read and follow all the current label directions relating to the products. Nothing herein shall be deemed a warranty or guaranty by PanAmerican Seed of any products listed herein. PanAmerican Seed's terms and conditions of sale shall apply to all products listed herein.

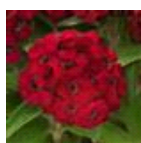
Variety Pictures



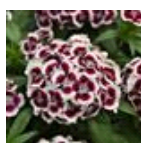
Pink Magician



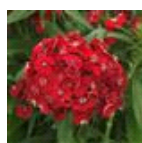
Purple



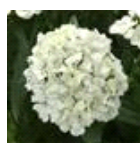
Raspberry



Red White
Picotee



Scarlet



White



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