

## Echinacea PowWow® Series

(*Echinacea purpurea*)

Perennials Culture (revised 06/21/22)

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

**Transplant to finish:** 13 to 17 weeks

- PowWow puts more flowers on every plant than any other seed Echinacea, for a terrific, non-fading colour show!
- Colour-packed pair is well-matched for habit and timing.
- Fuller, shorter and better branched than many tissue culture Echinacea – can be grown without growth regulators and shipped tight on racks.
- Programmable to meet market dates.
- Versatile series works well from gallon containers to premium packs.
- Packs are suitable for landscaper in-colour or green plant sales, and for prairie-to-go programs.
- Very drought-tolerant, easy-care plants stay tidy at retail with long holdability.

**Height:** 16 to 20 in./40 to 50 cm first year; 22 to 24 in./56 to 61 cm second year

### General Information

Exposure	Bloom Season	Height	Spread	Spacing
Sun	Late Spring, Summer, Late Summer, Autumn	16-20 in. (41-51 cm)	12-16 in. (30-41 cm)	8-14 in. (20-36 cm)

### Germination

Seed Form	Recommended Plug Size	Seeds/Cell	Plug Crop Weeks	Days from 50% to maximum germination	Initial Media pH/EC (1:2)	Cover Seed
RAW	128 72*	1 1	5-6 11-13	4-14	5.8-6.2 pH 0.75 mmhos/cm	Yes

\* Recommend plug size for forcing.

### Plug Production

	Stage 1	Stage 2	Stage 3	Stage 4
Moisture	Level 4	Level 3-4	Level 2-4	Level 2-4
Temperature	71-76°F (22-24°C)	71-73°F (22-23°C)	68-70°F (20-21°C)	65-67°F (18-19°C)
Light	Optional	5-8 mol·m <sup>-2</sup> ·d <sup>-1</sup>	10 mol·m <sup>-2</sup> ·d <sup>-1</sup>	10-15 mol·m <sup>-2</sup> ·d <sup>-1</sup>
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)

### Vernalisation

No

### Juvenility

Up to the 2 fully mature leaf stage.

### Propagation Key Tips

Forcing Protocol: Produce plug or liner to the 2 fully mature leaf stage. At the 2 fully mature leaf stage, begin short day conditions. Continue short day conditions until plant reaches 7 fully mature leaves. The 128 is the minimum size for SD grown plugs to 7 fully mature leaves. For more forcing info: See Perennials Forcing Guide and GrowerFacts Extra Spring and Fall forcing.

## Growing on to Finish

Growing on Temperature	Target Media pH/EC (1:2)	Fertiliser	Daylength
(day) 65-75°F (18-24°C) (night) 60-65°F (16-18°C)	5.8-6.5 pH 1.5-2.0 mmhos/cm	175 to 225 ppm N (1.2 to 1.5 EC)	Short Day-Long Day

### Daylength Notation

Grow plugs under SD ( $\leq$ 12 hours) until 7 mature leaves. Thereafter, 100% plants flower at  $\geq$ 10 hours when grown under high daily light integral (DLI;  $\sim$ 15 moles/m<sup>2</sup>/d) and at  $\geq$ 12 hours under low DLI ( $\sim$ 5 moles/m<sup>2</sup>/d). Plants flowered  $\sim$ 5 weeks faster at  $\geq$ 13 hours than at 10 under higher DLI and  $\sim$ 2 weeks faster at  $\geq$ 13 hours than at 12 under low DLI. Therefore, fastest flowering at  $\geq$ 13 hours.

## Crop Scheduling

Crop Type	Container Size	Plugs/Pot	Crop Time	Season	PGR
Forcing	5"/6"/1 Gallon/15 cm	1-3 (ppp)	9-11 (weeks)	Late Summer, ADT 72°F (22°C)	-
Annual	5"/6"/1 Gallon/15 cm	1-3 (ppp)	13-17 (weeks)	Late Spring, ADT 72°F (22°C)	-
Overwinter	5"/6"/1 Gallon/15 cm	1-3 (ppp)	30-34 (weeks)	Late Spring, ADT 72°F (22°C)	-

### Common Problems

Soil that is too wet during overwinter production can result in Root Rot and uneven plant development. Bark media is recommended for best drainage. Powdery Mildew.

### Bulking Strategy

Short days are recommended to bulk the liners prior to long day conditions. Produce plugs to the 2 fully mature leaf stage. At the 2 fully mature leaf stage, begin short day conditions. Continue short day conditions until plants reach at least 7 fully mature leaves. Bulking can take place in the liner or in the finish container. After short day treatment, grow under long day conditions (natural or extended).

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



White

Wild Berry