

## Echinacea Cheyenne Spirit

(*Echinacea x hybrida*)

Perennials Culture (revised 06/21/22)

### More colours! More flowers! More sales!

Award-winning Cheyenne Spirit is the more economical way to bring high-demand colours to market, compared to traditional tissue-culture material. This incredibly vibrant segregating mix delivers maximum flower power at retail and shines all season long in landscapes.

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

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

- Plants are shorter, better branched and fuller than many tissue-culture varieties. This makes it possible to grow without PGRs and offers the ability to ship on tightly spaced racks.
- Flexible scheduling is possible to meet a range of market dates.
- Fits a broad range of sizes from premium packs to gallons. Packs are suitable for in-colour or green plant sales for landscape or prairie -to-go uses.
- Broad and consistent palette includes shades of red, orange, purple, scarlet, cream, yellow and white.
- Long retail shelf life, heat and drought tolerance, and excellent Winter hardiness.

**Height:** 18 to 24 in./46 to 61 cm first year; 22 to 30 in./56 to 76 cm second year

**Spread:** 10 to 16 in./25 to 41 cm first year; 14 to 20 in./36 to 51 cm second year

## General Information

Exposure	Bloom Season	Height	Spread	Spacing
Sun	Late Spring, Summer, Late Summer, Autumn	18-30 in. (46-76 cm)	10-20 in. (25-51 cm)	10-14 in. (25-36 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
<b>Moisture</b>	Level 4	Level 3-4	Level 2-4	Level 2-4
<b>Temperature</b>	71-76°F (22-24°C)	71-73°F (22-23°C)	68-70°F (20-21°C)	65-67°F (18-19°C)
<b>Light</b>	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>
<b>Fertiliser</b>		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
Overwinter	5"/6"/1 Gallon/15 cm	1-3 (ppp)	30-34 (weeks)	Late Spring, 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)	-
Forcing	5"/6"/1 Gallon/15 cm	1-3 (ppp)	9-11 (weeks)	Late Summer, 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

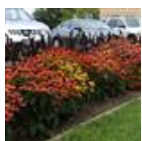
Short days are recommended to bulk the liners prior to long day conditions. Produce plugs to the 2 fully mature leaf stage. At the 2 fully mature leaf stage, begin short day conditions. Continue short day conditions until plants reach at least 7 fully mature leaves. Bulking can take place in the liner 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.

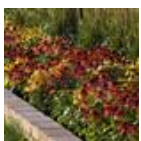
## Variety Pictures



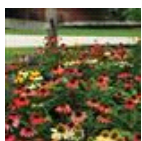
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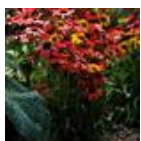
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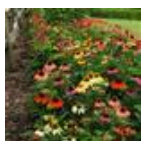
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