

Penstemon Carillo

(*Penstemon x mexicali*)

Germination

Approximate seed count (raw): 51,000 - 68,000 S./oz
(1800 - 2400 S./g)

Key Flowering Facts

- First-year-flowering perennial.
- Vernalization: not required.
- Photoperiod response: facultative long day plant.
- Unique and attractive (early) summer item.
- Long flowering and heat tolerant.
- Eye-catching, great visual appeal.

Media

Use a well-drained, disease-free, soilless media with a pH of 5.8 to 6.5 and an EC of 0.75 mmhos/cm.

Sowing

Sow 4 seeds per cell in 288 or larger plug tray.
Do not cover the seed. Spray after sowing preventively against fungi.

Germination takes 3 to 6 days.

Soil temperature: 65 to 68°F (18 to 20°C)

Light: Light is not required but beneficial.

Moisture: Keep soil medium moist to medium wet (level 3-4).

Humidity: Maintain 95 to 97% relative humidity (RH) until radicles emerge.

Plug Production

Media

Use a well-drained, disease-free, soilless media with a pH of 5.8 to 6.5 and an EC of 0.75 mmhos/cm.

Sowing

Sow 4 seeds per cell in 288 or larger plug tray.
Do not cover the seed. Spray after sowing preventively against fungi.

Stage 1 – Germination takes 3 to 6 days.

Soil temperature: 65 to 68°F (18 to 20°C)

Light: Light is not required but beneficial.

Moisture: Keep soil medium moist to medium wet (level 3-4).

Humidity: Maintain 95 to 97% relative humidity (RH) until radicles emerge.

Stage 2

Soil temperature: 65 to 68°F (18 to 20°C)

Light: Up to 2,500 f.c. (26,900 Lux)

Moisture: Reduce media moisture slightly to medium moist (level 3) to allow the roots to penetrate into the media. Don't let the media dry out.

Fertilizer: Apply fertilizer at rate 1 (less than 100 ppm N/less than 0.7 mmhos/cm EC) from nitrate-form fertilizers with low phosphorous.

Stage 3

Soil temperature: 60 to 65°F (16 to 18°C)

Light: Up to 2,500 f.c. (26,900 Lux)

Moisture: Maintain the moisture level constantly medium moist (level 3). Avoid both excessive watering and drought.

Fertilizer: Maintain fertilizer at rate 1 (less than 100 ppm N/less than 0.7 mmhos/cm EC) from nitrate-form fertilizers.

Growth Regulators: Not needed for height control; however, plant quality seems improved in a later stage when using 2 applications of B-Nine/Alar (daminozide) of 2,000 ppm (2.5 gr/l 85% formulation or 3.0 gr/l 64% formulation) applied about 2 to 2½ weeks after sowing.

Stage 4

Soil temperature: 60 to 65°F (16 to 18°C)

Light: Up to 5,000 f.c. (53,800 Lux) if temperature can be controlled.

Moisture: Same as Stage 3.

Fertilizer: Apply fertilizer at rate 2 (100 to 175 ppm N / 0.7 – 1.2 mmhos/cm EC) from nitrate-form fertilizers.

Growing On to Finish

Container Size

4 to 5 in. (10,5 to 13cm) or square/quart pots: 1 plug per pot

Media

Use a well-drained, disease-free, soilless media with a pH of 5.8 to 6.5 and an EC of 1.2 mmhos/cm).

Vernalization

Not required for flower induction.

Temperature

Nights: 55 to 59°F (13 to 15°C)

Days: 65 to 72°F (18 to 22°C)

Light

No additional light is required.

Photoperiod

Carillo is a facultative long day plant and will flower faster when daylength is 12 hours or longer.

Irrigation

Keep media constantly medium dry to medium moist (level 2 to 3).

Root-system of Carillo is sensitive to both excessive watering and drought.

Fertilizer

Apply fertilizer at rate 2 to 3 (150 to 225 ppm N / 1.1 to 1.5 mmhos / cm EC) from Nitrate form fertilizer. Avoid high ammonium levels.

Growth Regulators

In general, PGR is not needed for height control when grown cool. However, *Penstemon mexicali* is responsive to B-Nine/Alar (daminozide) in an early stage after transplant. An application of 2,500 ppm (3.0 gr/l 85% formulation or 4.0 gr/l 64% formulation) can be applied about 10 days to 2 weeks after transplant. If necessary, repeat the application after approximately 1 week depending on growth, temperature and light level. Best reaction to PGR treatments may be expected the first month after transplant.

Note: Avoid using Bonzi (paclobutrazol) as it may cause a wild, open and coarse plant habit. Plants also tend to stretch earlier.

Pinching

Not needed. However, for pot-culture, pinching approximately 1 week after transplant can result in more flower stems. This delays crop time by approximately 3 to 5 weeks.

Spacing:

Space plants when foliage is touching.

Crop Scheduling

Sow to transplant (288 cell plug): 6 to 8 weeks

Transplant to flower:

- Red and Purple: 12 to 14 weeks
- Rose: 13 to 15 weeks

Total crop time:

- Red and Purple: 18 to 22 weeks
- Rose: 19 to 23 weeks

Note: Larger plug size, bigger pot size, cool temperatures, pinching or the use of PGR may cause a longer crop time.

Production: Sow early to middle of January for natural flowering in May to June under Northwest European conditions.

Common Problems

Insect: Aphids, Spider Mites, White Flies

Disease: Powdery Mildew

Garden and Landscape Information

- Carillo is a first-year-flowering perennial to USDA Hardiness Zone 5 to 7.
- Space plants at 8 to 10 in. (20 to 25 cm) apart in well-drained soil.

Note: Growers should use the information presented here as a starting point. Crop times will vary depending on the climate, location, time of year, and greenhouse environmental conditions. Chemical and PGR recommendations are only guidelines. It is the responsibility of the applicator to read and follow all the current label directions for the specific chemical being used in accordance with all regulations.

