

Campanula Swinging Bells™

syngenta® flowers

Culture Guide

Botanical name: *Campanula cochleariifolia*

Product form: Seed

Containers: Quarts, Gallons

Habit: Mounding

Vernalization: Not required (First Year Flowering)

Garden Specifications

Garden Height: 4–6" (10–15 cm) tall

Garden Width: 8–12" (20–30 cm) wide

Exposure: Full sun

USDA zone: 5–9

AHS zone: 9–5

Product use: Containers, Landscapes

Germination

Stages 1 & 2

Germination time: 5–7 days

Media temp: 68–72 °F (20–22 °C)

Chamber: Optional

Light: Required for germination

Seed cover: No

Moisture level: 4 - WET: Soil is dark brown but not shiny, no free water is seen at the surface of the soil, when pressed or squeezed water drips easily, and trays are heavy with a visible bend in the middle.

Rec. tray size: 288–cell tray

Seeds per cell: 3–4

Young Plant Production

Stage 3 & 4

Temperature

Day: 66–68 °F (19–20 °C)

Night: 62–64 °F (17–18 °C)

Average daily temperature: 64 °F (18 °C)

Lighting

Day extension lighting: Not necessary

Light intensity: 200–250 $\mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$ for the first two weeks after sowing or until root development occurs. Light levels can be increased up to 600 $\mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$ as rooting increases and the seedling matures.

Day length response: Obligate long day

Daily light integral: 10–12 $\text{mol}\cdot\text{m}^{-2}\cdot\text{d}^{-1}$

Media pH: 6.1–6.5

Media EC: SME 0.5 to 0.75 mS/cm



Swinging Bells™ White

Fertilizer: 50–75 ppm N

Moisture level: Media should be allowed to dry between irrigations. Alternate between moisture level 3 and 4.

3 - MOIST: Soil is brown in color, strongly squeezing the soil will extract a few drops of water, and trays are light with no visible bend.

4 - WET: Soil is dark brown but not shiny, no free water is seen at the surface of the soil, when pressed or squeezed water drips easily, and trays are heavy with a visible bend in the middle.

Pinching: No

Plant growth regulators (PGRs): If needed, spray B-Nine® WSG (daminozide) at 2,500 ppm.

Plug grow time: 8–9 weeks in a 288–cell tray

Comments: Grow plants under short day conditions (less than 12 hours).

Bulking and Vernalization

Vernalization: Not required (First Year Flowering)

Finishing

Temperature

Day: 68–70 °F (20–21 °C)

Night: 66–68 °F (19–20 °C)

Average daily temperature: 67 °F (20 °C)

Lighting

Day extension lighting: Necessary to 14 hours

Light intensity: 800–1,200 $\mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$

Day length response: Obligate long day

Daily light integral: 12–14 $\text{mol}\cdot\text{m}^{-2}\cdot\text{d}^{-1}$



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Transplanting: Transplant directly into the finished container. Place the rooting media slightly above the level of media in the container. Make sure that the root ball is covered and that the plug is situated in the center of the pot.

Media pH: 6.1–6.5

Media EC: SME EC: 0.9–1.3 mS/cm, PourThru EC: 1.4–2.0 mS/cm

Fertilizer: 125–175 ppm N

Pinching: No. Pinching is not recommended or needed.

Plant growth regulators (PGRs): If necessary, B-Nine® WSG spray at 2,500–3,750 ppm, or Altercel™ (chlormequat chloride) spray at 500–1,000 ppm.

Tech tip: After transplanting, grow plants under short day conditions for 2–3 weeks, then transition to day lengths greater than 14 hours, or provide 4 hours of night interruption lighting to induce flowering.

Moisture level: Media should be allowed to dry between irrigations. Alternate between moisture level 2 and 3.

2 - MEDIUM: Soil is light brown in color, no water can be extracted from soil, and soil will crumble apart.

3 - MOIST: Soil is brown in color, strongly squeezing the soil will extract a few drops of water, and trays are light with no visible bend.

Common pests: Aphids, Whiteflies, Spider Mites

Common diseases: Botrytis, Pythium, Rhizoctonia

Scheduling

Size	Crop Time	Plants Per Pot
1.0 quart (4.5 to 5 inch)	10–12 weeks	1–2 ppp
1.25 to 2.5 quart (5.5 to 6.5 inch, trade gallon)	10–12 weeks	2–3 ppp

Estimated finish crop time is from transplant of a 288-cell tray and finished at an average daily temperature (ADT) of 67 °F (20 °C).

Example crop schedule for a 1.0 quart

Weeks From Transplant	Description
1 week	Transplant 1–2 plugs per quart pot and finish at 67 °F (20 °C) ADT; grow plants at day lengths of 12 hours or less to bulk for 3–4 weeks
4 weeks	Force flower initiation by providing day lengths greater than 14 hours or 4 hours of night interruption lighting
6 weeks	PGR spray of B-Nine® WSG or Altercel™ as needed to tone
10 weeks	Finish



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