

Polemonium pulcherrimum* Hook. var. *pulcherrimum

showy Jacob's ladder

Family: Polemoniaceae



Figure 110. Documented range of *Polemonium pulcherrimum* in northern British Columbia.



Figure 111. *Polemonium pulcherrimum* growing in cultivation.

***Polemonium pulcherrimum* Hook.**
(continued)

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Background Information

Polemonium pulcherrimum is found north to Alaska, the Yukon and Northwest Territories, east to southwestern Alberta, and south to Colorado and California. It is common in B.C. east of the Coast-Cascade Mountains. It has also been found at a single location in the Queen Charlotte Islands. Only the variety *P.p.* var. *pulcherriumum* is recognized from B.C. (Douglas et al. 1999).

Growth Form: Tufted basal compound leaves grow from a branched stem base, 10-25 opposite leaflets; terminal head-like clusters of long stalked bell-shaped flowers with blue corollas and yellow centers, rounded petals; mature plant size is 5–35 cm tall (MacKinnon et al. 1992, Douglas et al. 1999).

Site Preferences: Dry rocky or sandy places, roadsides, exposed slopes, rocky slopes at low to high elevations throughout the northern Interior (MacKinnon et al. 1992, Douglas et al. 1999). It is reported to be moderately shade-tolerant (Beaudry et al. 1999). In northern B.C., this species is found on xeric to sub-xeric, poor to rich sites in the SBSx or SBSd subzones; on xeric, poor to rich sites in the SBSm subzones; on poor to medium, subxeric sites in the ESSFx or ESSFd subzones; on poor to medium xeric sites in the ESSFw or ESSFv subzones; on xeric to mesic, very poor to medium sites in the SBPSx or SBPSd subzones; and on xeric poor sites in the SBPSmk (Beaudry et al. 1999).

Seed Information

Seed Size: Length: 2.03 mm (1.64 - 2.44 mm)
Width: 0.98 mm (0.81 - 1.17 mm)

Seeds per gram: 1,139 (range: 1,123 - 1,144)

Volume to Weight Conversion: Unknown

Germination Capacity: At 30°/20° C untreated: 79.0%
(65 - 3%)
At 25°/15° C untreated: 85.2%
(75- 93%)
stratified: 51.2%
(22 – 80%)

Germination Speed: To first germination: 6.0 days
To 50% potential: 11.0 days

Seed Longevity: Unknown

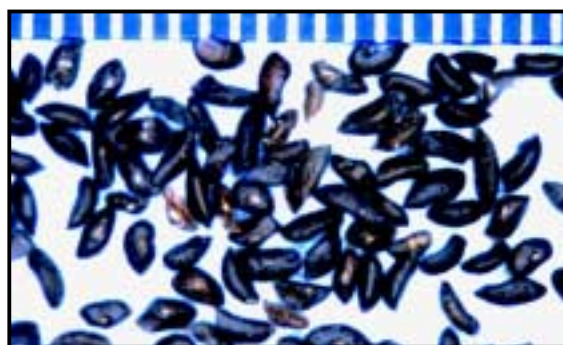


Figure 112. Seeds of *Polemonium pulcherrimum*.
Rule divisions are 1.0 mm.

Considerations for Growing

Techniques for Seed Production

Seed treatment: As stratification at 5°C for two months resulted in reduced germination capacity (at least when tested at 25°/15°C), no pre-germination treatment is recommended.

Stand establishment: Loamy firm seedbed recommended; site should be free of all weeds, especially rhizomatous grasses, because selective herbicides cannot be used once plants are growing.

Row spacing: Unknown; suggest 75 to 120 cm under dryland conditions, 30 to 90 cm with good irrigation.

***Polemonium pulcherrimum* Hook.**
(continued)

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(Techniques for Seed Production, continued)

Seeding density: Unknown at present; suggest 60-100 PLS seeds per linear metre (Smith and Smith 2000).

Seeding depth: Moderately shallow, with light dusting of peat moss or dry soil to hold seed in place.

Stand maintenance: Regularly cultivate rows and spot spray with herbicide to keep plot weed free. Though natural stands typically bloom once and go to seed in early summer, we have found that some aspect of our cultivation protocol (including weed control, watering, and light fertilization with a balanced NPK fertilizer) promoted flowering and seed production all summer long. Annual fertilization with low N formulations may further extend the life of the plot.

Harvesting and Seed Processing

Dates of selective harvesting in the Bulkley Valley of northwestern B.C. have ranged from July 7th to October 19th, though wild stands frequently have ripe seeds in June. Harvest seeds as soon as capsules turn papery tan brown, as they shatter easily.

Hand clipping: Use sharp hand clippers or scissors. Hold the seed heads over bins or trays placed alongside the plants being clipped or place a bag over the seed heads before clipping to minimize seed loss. Do not allow seed capsules to become over-ripe or they will dehisce before harvest and you will lose many seeds. Placing plastic between rows is recommended so dehisced seeds can be salvaged.

Vacuum: Not recommended for this species. However, since this species dehisces easily from ripe capsules, plastic placed between rows will enable you to harvest lost seeds that were dropped early or are scattered while being harvested by hand clipping or mechanical methods. We recommend that scattered seed be vacuumed from weed cloth immediately after any method of harvesting. These seeds often spoiled when they got wet on plastic, as they would not dry out after becoming covered in a gelatinous coat, perhaps indicative of fungal attack or a property of the seeds themselves.

Seed stripper: Suitability unknown at present; not likely appropriate.

Combine/thresher settings: 1241 rpm with a 3 mm gap.

Seed cleaning: Run through fanning mill with the following configuration: prescreen 1.2 x 7.1 mm slot; top screen 1.5 mm square; bottom screen blank. Then run through vacuum separator at medium suction to remove chaff.

Storage requirements: Cool dry conditions.

Considerations for Use in Revegetation

- A useful addition to seed mixes for low nutrient, gravelly and compacted soils, and where a bit of colour is desired.
- *Polemonium pulcherrimum* has a pretty little flower, so has potential for ornamental use.
- If grown in cultivation as a horticultural planting, it is worth noting that it can bloom throughout the growing season if the soil is kept fertilized and moist.

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(continued)

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Notes

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