

Protocol Information



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United States Department of Agriculture
Natural Resources Conservation Service

Corvallis

Plant Materials Center

Corvallis, Oregon

Family Scientific Name: **Polemoniaceae**

Family Common Name: **Phlox**

Scientific Name: ***Phlox diffusa* Benth.**

Common Name: **spreading phlox**

Species Code: **PHDI3**

Ecotype: **Crater Lake National Park, 7,000 ft elevation on pumice flats and open gravelly slopes around Rim Village.**

General Distribution: **Western US and Central Plains on open, dry, gravelly or sandy soils, in openings and large clearings.**

Propagation Goal: **Plants**

Propagation Method: **Seed**

Product Type: **Container (plug)**

Stock Type: **4**

Time To Grow: **1 year**

Target Specifications: **Healthy, branched crown foliage with healthy central tap root.**

Propagule Collection: **Seeds are slow and tedious to collect from these low-growing plants; not present at all in some collection years and sparse in most; tend to wither if collected at less than full ripeness, single seed per flower.**

Propagule Processing: **No processing needed other than perhaps blowing away chaff / light, empty seeds.**

Pre-Planting Treatments: **Germination was significantly enhanced in our**

trials with 17 weeks cold moist pre-chill (cold moist stratification).

Growing Area Preparation/

Annual Practices for Perennial Crops: **Seeds sown into standard "1040" flats with a fine, soil-less potting mix (Fisons' Sunshine #3 seedling starter); topped with a thin layer of fine vermiculite; watered-in and placed in polyethylene bags in a walk-in cooler at 34 - 36°F for 17 weeks.**

Establishment Phase: **Flats with stratified seeds placed in warm greenhouse (approx 60°F nights / 70 to 85°F days) and lightly watered as needed until germination was complete, in about 45 days: approximately 50 % of seeds germinated with this treatment. Good air circulation and drainage is crucial; these seedlings are highly susceptible to damping-off and other fungal attacks. Seedlings remained in these flats for another 4 to 6 weeks until large enough to transplant. 1 gram of seed produced 36 healthy container plants for us in this trial.**

Length of Establishment Phase: **12 weeks**

Active Growth Phase: **When large enough to handle for transplant, seedlings are placed in a light, fast-draining potting medium (Fisons' Sunshine Aggregate 4 Plus) in 4" deep pots and moved outdoors to a lightly shaded area (we placed ours at the outside northern edge of the shadehouse). Plants should be protected from overwatering and given plenty of room for air circulation. A light fertilization of Peters' starter (9-45-15) given once after transplanting; excess fertilizer should be avoided on these slow-growing plants.**

Length of Active Growth Phase: **May to July**

Hardening Phase: **Plants can be allowed to become rather dry in August: pots should become quite light between waterings and then drained very quickly after watering.**

Length of Hardening Phase: **August - September**

Harvesting, Storage and Shipping: **Plants were shipped up to Crater Lake in late August via refrigerated van to a holding facility at the park; they can also be placed into a walk-in cooler with soil very lightly moistened for dormant storage over winter. Most important is for the plants not to be moved outside in early spring in Corvallis where they can become waterlogged and overwhelmed by foliar / fungal diseases.**

Length of Storage: Seeds - not known; plants can be held over winter but may need transplanting to deeper containers in the following spring.

Outplanting performance on typical sites: A small observational plot of seeds direct-sown in September at Crater Lake near the revegetation test plots resulted in successful germination the following spring; however none of these seedlings survived. Transplants were successfully established in the Rim Village landscape planting from the plants grown and shipped as described above.

Other Comments: Although called "spreading", our experience with this phlox was that it produced only a single, very deep taproot. We did not find evidence of spontaneous root spreading in even the very large plants at the park; nor were we successful in producing significant numbers of transplants from stem cuttings.

The use of manufacturer and trade names in this document is for clarification only. No discrimination is intended and no endorsement is given by the USDA NRCS.

References: Corvallis Plant Materials Center Technical Report: Plants for Woodland and Rangeland Reclamation and Erosion Control 1980 - 1997 (includes Annual Reports to Mount Rainier National Park from 1990 – 1996).

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Citation:

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