Protocol Information

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United States Department of Agriculture
Natural Resources Conservation Service

Corvallis
Plant Materials Center
Corvallis, Oregon

Family Scientific Name:	**Valerianaceae**
Family Common Name:	**Valerian**
Scientific Name:	***Valeriana sitchensis* Bong.**
Common Name:	**Sitka valerian; mountain heliotrope**
Species Code:	**VASI**
Ecotype:	**Mount Rainier National Park, Tipsoo Lake area**
General Distribution:	**Western US including Alaska; Idaho and Montana; moist places at mid and upper elevations in Cascade mountains.**
Propagation Goal:	**Plants**
Propagation Method:	**Seed**
Product Type:	**Container (plug)**
Stock Type:	**1-year containers**
Time To Grow:	**1 year**
Target Specifications:	**Well-developed rhizome or caudex with many healthy fibrous roots supporting a healthy crown of basal foliage.**
Propagule Collection:	**Ripe seeds collected generally when pappus-like "plumules" or plumose calyx appendages, are beginning to unfurl are best: seeds shatter and blow away easily once these have opened. However if collected too early we found incomplete seed fill.**
Propagule Processing:	**Air-drying seed on an open bench top in a warm room or greenhouse bench generally caused most of the seed "plumules" to unfurl as they dried; once dried these are easily rubbed off. Clean, air-dried seed weight in our lot was approximately 448,000**

	seed / lb.
Pre-Planting Treatments:	**Cold moist stratification is needed for this species. Seed lots were stratified by sowing into standard "1020" flats in Fisons' Sunshine #3 seedling starter mix; watered in and placed in polyethylene bags in a walk -in cooler at about 35 F. Our longest stratification time of 13 weeks yielded 4% germination; seeds stratified at 6 weeks or less had less than 1% germination within 6 weeks in a moderate greenhouse (70 to 80°F day / 60 to 65°F nights). A few stragglers germinated and grew slowly over the next few months after "final" seedling counts were taken. Longer stratification times should be tested for this species.**
Growing Area Preparation/ Annual Practices for Perennial Crops:	**At transplant time, seedlings were potted up into 4" square pots in a soil mix of 3 parts Fisons' Sunshine #1: 1 part "Black Gold" organic potting soil. This provided a richer, denser soil mix which was easier to keep at the higher moisture levels preferred by these plants.**
Establishment Phase:	**Seedlings were left in the "1020" flats for another month to 6 weeks after "germination phase" and fertilized with very low rates of Peters starter fertilizer (9-45-15 NPK) for the last few weeks in the flats.**
Length of Establishment Phase:	**3 months**
Active Growth Phase:	**These plants grow fairly slowly during the first season and were given low rates of fertilizer (Peters Triple 20 NPK at 1/2 label rate) with soil moisture kept fairly high but at the same time plants needed good drainage to allow fine, fibrous roots to develop. Plants were moved out to a shadehouse in July when top growth began to take off.**
Length of Active Growth Phase:	**May to August**
Hardening Phase:	**Fertilizer was stopped in July; and in August plants were allowed to become somewhat drier between waterings. Shadecloth was removed at the end of August to allow for full sun acclimation.**
Length of Hardening Phase:	**August - September**
Harvesting, Storage and Shipping:	**Plants can be shipped in their containers in early fall for outplanting; plants overwintered at the Corvallis PMC fared better by storing in moist soil in a walk-in cooler rather than being left outdoors**

	in a lathhouse. Overwintered plants required repotting into larger pots - 6" square or 1-gallon cans by the following spring.
Length of Storage:	**Seed storage length unknown.**
Outplanting performance on typical sites:	**Crowns should be carefully placed and settled at soil level.**
Other Comments:	**Limited vegetative propagation by cutting large rhizomes with several growing crown points was also successful for this species. However, seed propagation was preferred to avoid the need for digging up rhizomes from their native sites. Also, handling the crowns seemed to cause drowsiness for some people; and many find the pungent odor released from dividing the rhizomes to be unpleasant.** **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:	**Hitchcock, C.L. and A. Cronquist. 1973. Flora of the Pacific Northwest. University of Washington Press, Seattle, WA.** **USDA, NRCS. 2001. The PLANTS Database, Version 3.1 (http://plants.usda.gov). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.**

Citation:

Trindle, Joan DC; Flessner, Theresa R. 2003. Propagation protocol for production of container *Valeriana sitchensis* Bong. plants (1-year containers); USDA NRCS - Corvallis Plant Materials Center, Corvallis, Oregon. In: Native Plant Network. URL: http://www.nativeplantnetwork.org (accessed 6 January 2010). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery.