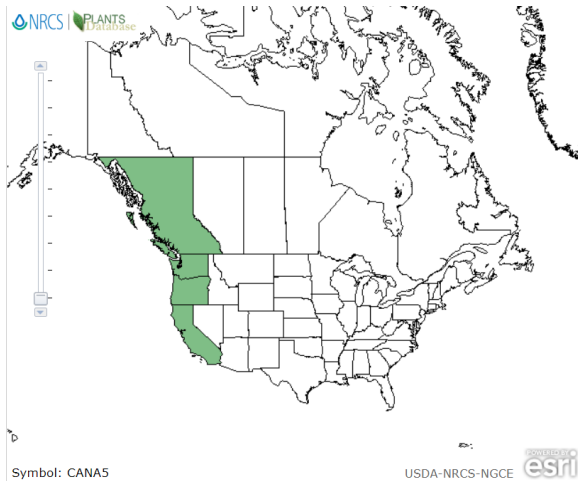


Plant Propagation Protocol for *Cacaliopsis nardosmia*

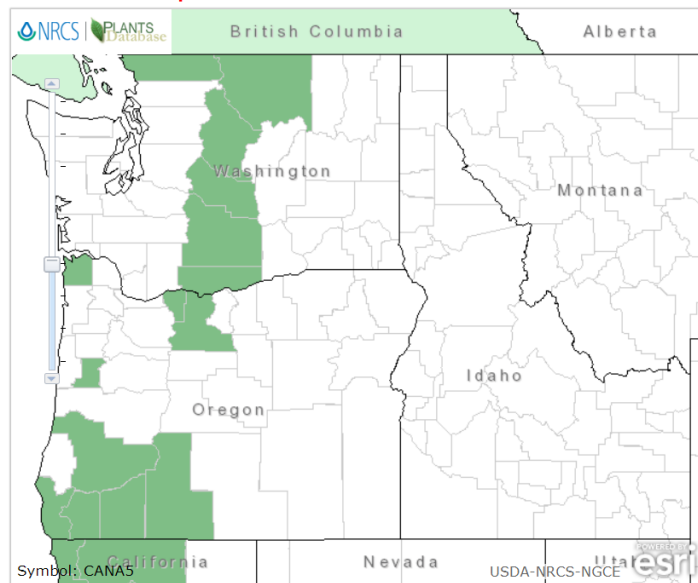
ESRM 412 – Native Plant Production

Protocol URL: [https://courses.washington.edu/esrm412/protocols/\[CANA5.pdf\]](https://courses.washington.edu/esrm412/protocols/[CANA5.pdf])

North American Distribution:



Pacific Northwest Distribution:



Source: USDA Plant Database

TAXONOMY	
Plant Family	
Scientific Name	Asteraceae
Common Name	Aster
Species Scientific Name	
Scientific Name	<i>Cacaliopsis nardosmia</i> A. Gray
Varieties	N/A

Sub-species	N/A
Cultivar	N/A
Common Synonym(s)	<ol style="list-style-type: none"> 1. <i>Cacalia nardosmia</i> A. Gray 2. <i>Cacalia nardosmia</i> A. Gray var. <i>glabrata</i> (Piper) B. Boivin 3. <i>Cacaliopsis nardosmia</i> (A. Gray) A. Gray var. <i>glabrata</i> Piper 4. <i>Luina nardosmia</i> (A. Gray) Cronquist 5. <i>Luina nardosmia</i> (A. Gray) Cronquist var. <i>glabrata</i> (Piper) Cronquist
Common Name(s)	Silvercrown
Species Code (as per USDA Plants database)	CANA5
GENERAL INFORMATION	
Geographical range	Found along the pacific coast ranging from California through Washington and Oregon and reaching British Columbia. Map of distribution shown above. ₁
Ecological distribution	Occurs in meadows and open places. _{3,5}
Climate and elevation range	Occurs at elevations 637' - 6808', humidity: 0.47 vpd - 23.15 vpd and at temperatures 36.9° F- 72.6° F ₃
Local habitat and abundance	Oak and pine forests, meadows, open places and sometimes on serpentine. _{4,5}
Plant strategy type / successional stage	No plant strategy type information could be found.
Plant characteristics	Perennial herb from rhizomes native to the west coast of north america. It has shiny green leaves with and erect red stems that can grow up to 3 feet high. The stems bear yellow flower clusters that contain fruit which is a small cylindrical achene with a bristly white pappus. ₃
PROPAGATION DETAILS *Based on propagation of similar species found in similar conditions_{6,7}	
Ecotype	
Propagation Goal	Plants
Propagation Method	Seeds
Product Type	Container (plug)
Stock Type	160 ml containers
Time to Grow	7 months
Target Specifications	height: 14 cm
Propagule Collection Instructions	Seed production under tree canopy is poor. Locate populations in full sun or in open forests or meadows for seed collection.

	Seeds are collected in paper bags and kept in a well ventilated drying shed prior to cleaning.
Propagule Processing/Propagule Characteristics	Seed Density: 990,000/ kg 100% purity 85% germination Seed longevity: 3 to 5 years in storage at 2`C Seed Dormancy: Non deep physiological Dormancy Seeds cleaned with hammermill and office clippers
Pre-Planting Propagule Treatments	60 day cold, moist stratification. Seeds are imbibed in water for 4 hours and placed in fine mesh bags buried in moist peat moss in ventilated containers under refrigeration at 1 to 3C.
Growing Area Preparation / Annual Practices for Perennial Crops	Greenhouse temperatures: 23C day and 13C night. Sowing method: Direct seeding. Medium: Promix growing media 6:1:1 sphagnum peat:vermiculite:perlite with Osmocote controlled release fertilizer (13N:13P2O5:13K2O; 8 to 9 month release rate at 21C) and Micromax fertilizer (12%S, 0.1%B, 0.5%Cu, 12%Fe, 2.5%Mn, 0.05%Mo, 1%Zn) at the rate of 1 gram of Osmocote and 0.20 gram of Micromax per 172 ml container.
Establishment Phase Details	Seedlings germinate at 22 C. Seeds found at higher elevations may germinate at higher percentages in colder more moist conditions. Seed coat is weak and easily damaged by insects and rot. Medium is kept moist by misting twice per day.
Length of Establishment Phase	4 weeks
Active Growth Phase	Plants develop rapidly 2 to 4 weeks following germination, during the growing season plants should be fertilized with 20-20-20 liquid NPK at 100 ppm weekly.
Length of Active Growth Phase	12 weeks
Hardening Phase	During the hardening face plants should be fertilized with 10-20-20 liquid NPK at 200 ppm in early fall. Containers are leached with water and irrigation is slowly reduced through the fall.
Length of Hardening Phase	4 weeks
Harvesting, Storage and Shipping	Total Time To Harvest:7 months Harvest Date: September Storage Conditions: Overwinter in outdoor nursery under insulating foam cover
Length of Storage	5 months
Guidelines for Outplanting / Performance on Typical Sites	Sow seeds in early spring, plants typically flowers early summer.
Other Comments	N/A

INFORMATION SOURCES	
References	See below
Other Sources Consulted	See below
Protocol Author	Jacob Kizer
Date Protocol Created or Updated	5/1/19

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