

Plant Propagation Protocol for *Corydalis scouleri*

ESRM 412 – Native Plant Production

Protocol URL: <https://courses.washington.edu/esrm412/protocols/COSC4.pdf>

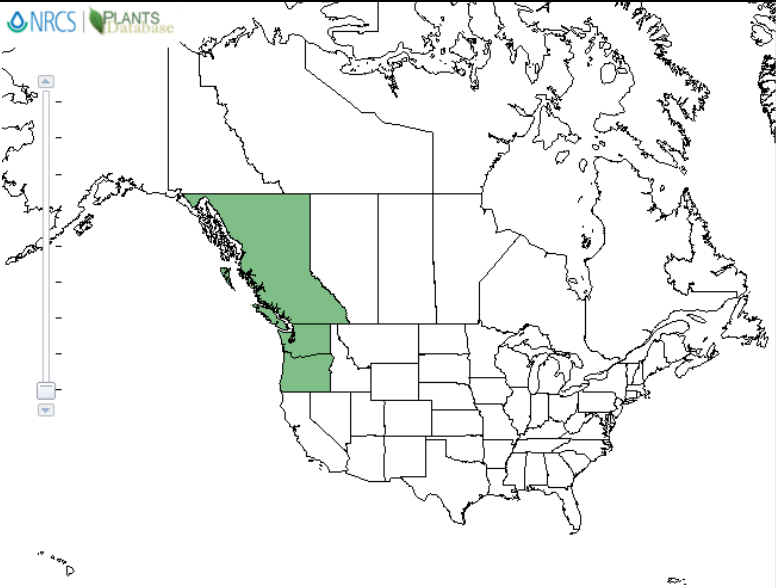
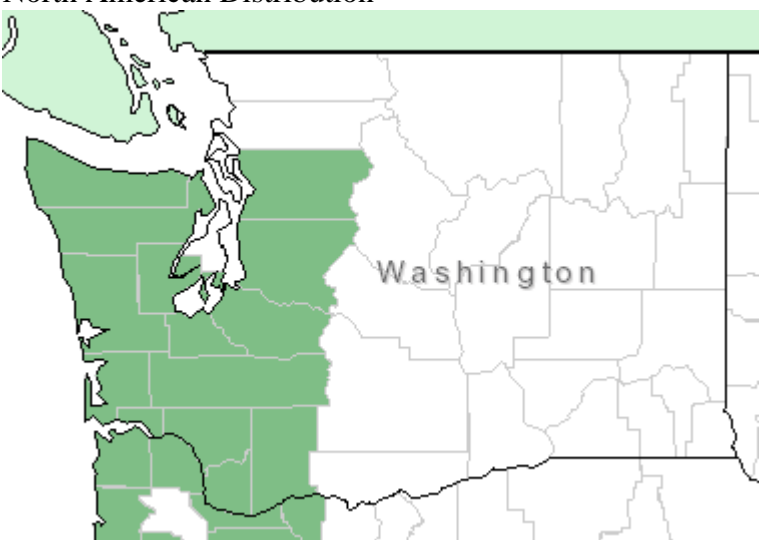



Images: Jack Armstrong, 2010, Olympia, Washington

TAXONOMY

Plant Family	
Scientific Name	Fumariaceae ⁹
Common Name	Fumitory ⁹ , Bleeding heart ¹⁰
Species Scientific Name	
Scientific Name	<i>Corydalis scouleri</i> Hook. ⁹
Varieties	N/A
Sub-species	N/A
Cultivar	N/A
Common Synonym(s)	N/A
Common Name(s)	Scouler's fumewort ⁹ , Scouler's corydalis ⁸ , Western Corydalis ⁷
Species Code (as per USDA Plants database)	COSC4 ⁹

GENERAL INFORMATION

<p>Geographical range</p>	 <p style="text-align: center;">North American Distribution⁹</p>  <p style="text-align: center;">Washington State Distribution⁹</p>
<p>Ecological distribution</p>	<p>Shaded, moist forest of low elevation.¹⁰ Found near streams commonly.⁸ Common within western Oregon and Washington.¹⁰ The Canadian distribution of this species is limited to a small area within Southwest Vancouver Island.¹⁰</p>
<p>Climate and elevation range</p>	<p>Low-elevation, 0-200 meters.¹⁰</p>
<p>Local habitat and abundance</p>	<p>Locally abundant in areas, forming large continuous areas of understory near stream settings.⁸ Local habitat requirements include shade, nitrogen rich soils, moisture and association with flowing water is common.¹⁰ Associated overstory species include <i>Alnus rubra</i>, <i>Acre macrophyllum</i>, <i>Picea sitchensis</i> and <i>Tsuga heterophylla</i>.¹⁰ Associated understory species include <i>Polystichum munitum</i>, and <i>Rubus spectabilis</i>.¹⁰</p>

Plant strategy type / successional stage	Mid to late successional. ³ Not a rapid colonizer of disturbed areas as seed distribution is limited in distance. ¹⁰ Species dispersion may be facilitated by periodic flooding resulting in transport of seed and rhizome. ¹
Plant characteristics	<p>Conspicuous, perennial, hollow stem forb.^{2,3,8} 2 to 4 feet tall.⁸ Forms thick rhizomes.⁸ Flowering occurs in May and June.³ Flowers comprise of a compound raceme, 4-10 inches long.³ Individual flowers are light pink, tubular, spurred and number 15-35 per spike-like cluster.⁸ Pod-like capsules, 1-1.5cm in length, burst open distributing black shiny seeds when ripe.^{8,10} Flowering stage reached at year 4 or more.¹⁰ Species will die back in late summer and become dormant.¹⁰</p>  <p style="text-align: center;"> 1 cm</p> <p>Source 4. Douglas 1999</p>

PROPAGATION DETAILS: Seed

Ecotype	N/A
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Container

Stock Type	N/A
Time to Grow	6-9 months
Target Specifications	2 – 4 feet tall
Propagule Collection Instructions	Flowering occurs in May and June. ¹⁰ Seed collection will occur mid to late summer. ¹⁰
Propagule Processing/Propagule Characteristics	Seeds desiccate quickly and are short-lived. ¹
Pre-Planting Propagule Treatments	Limited information. Some dormancy period is likely required given the native climate. ⁵
Growing Area Preparation / Annual Practices for Perennial Crops	Moist, high nitrogen soils. ¹⁰
Establishment Phase Details	N/A
Length of Establishment Phase	N/A
Active Growth Phase	Growth begins in early spring and ends late summer. ¹⁰ The species will die back through the fall and winter. ¹⁰
Length of Active Growth Phase	4 months ¹⁰
Hardening Phase	N/A
Length of Hardening Phase	N/A
Harvesting, Storage and Shipping	N/A
Length of Storage	N/A
Guidelines for Outplanting / Performance on Typical Sites	N/A
Other Comments	In Greek, corydalis mean, ‘crested lark.’ ⁸ Scouler is in reference to the physician and naturalist Dr. John Scouler. ⁸ Scouler joined early Pacific Northwest botanist David Douglas in his explorations. ⁸ Species is relatively abundant, with no restrictions, though the British Columbia population is limited to a small area. ¹
PROPAGATION DETAILS: Vegetative	
Ecotype	N/A
Propagation Goal	Plants
Propagation Method	Vegetative
Product Type	Container
Stock Type	N/A
Time to Grow	6-9 months
Target Specifications	2 – 4 feet tall
Propagule Collection Instructions	Collect rhizome cuttings in late fall or through winter. ⁵

Propagule Processing/Propagule Characteristics	N/A
Pre-Planting Propagule Treatments	N/A
Growing Area Preparation / Annual Practices for Perennial Crops	Moist, high nitrogen soils. ⁸
Establishment Phase Details	Plant rhizomes in individual pots, maintain moist soil conditions. ^{5,10}
Length of Establishment Phase	N/A
Active Growth Phase	Growth begins in early spring and ends late summer. ¹⁰ The species will die back through the fall and winter. ¹⁰
Length of Active Growth Phase	4 months ¹⁰
Hardening Phase	N/A
Length of Hardening Phase	N/A
Harvesting, Storage and Shipping	Harvesting additional rhizomes will occur just as harvesting from the field. This species may propagate well by growing within a shaded, dividing bed.
Length of Storage	Storage should be minimal. ⁵ Plant rhizomes as soon as possible, keep moist until planting. ⁵
Guidelines for Outplanting / Performance on Typical Sites	N/A
Other Comments	In Greek, corydalis mean, ‘crested lark.’ ⁸ Scouler is in reference to the physician and naturalist Dr. John Scouler. ⁸ Scouler joined early Pacific Northwest botanist David Douglas in his explorations. ⁸ Species is relatively abundant, with no restrictions, though the British Columbia population is limited to a small area. ¹
INFORMATION SOURCES	
References	<p>¹Accounts and Measures for Managing Identified Wildlife, 2004, Scouler’s Corydalis, British Columbia Ministry of Environment. Accounts V.</p> <p>²Burke Museum of Natural History and Culture [Online]. <i>Corydalis scouleri</i>. Available: http://biology.burke.washington.edu/herbarium/imagecollection.php?Genus=Corydalis&Species=scouleri, Accessed: May 22, 2016</p>

	<p>³COSEWIC 2006. COSEWIC assessment and update status report on the Scouler's corydalis <i>Corydalis scouleri</i> in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. Vii + 24 pp.</p> <p>⁴ Douglas, G.W., D.V. Meidinger, and J. Pojar (Editors). 1999. Illustrated Flora of British Columbia, Volume 3: Dicotyledons (Diapensiaceae through Onagraceae). B.C. Min. Environ., Lands and Parks, and B.C. Min. For., Victoria, B.C. 423 pp.</p> <p>⁵Dumroese, R. Kasten; Luna, Tara; Landis, Thomas D., 2009. Nursery Manual for Native Plants: A guide for Tribal Nurseries - Volume 1: Nursery Management. Agriculture Handbook 730. Washington, D.C.: U.S. Department of Agriculture, Forest Service. 302 p.</p> <p>⁶Klinkenberg, Brian, 2015. <i>E-Flora BC: Electronic Atlas of the Plants of British Columbia</i> [eflora.bc.ca.]. Available: http://linnet.geog.ubc.ca/Atlas/Atlas.aspx?sciname=Corydalis%20scouleri. Lab for Advanced Spatial Analysis, Department of Geography, University of British Columbia, Vancouver. Accessed: May 22, 2016.</p> <p>⁷Lady Bird Johnson Wildflower Center, The University of Texas at Austin [Online]. <i>Corydalis scouleri</i>. Available: http://www.wildflower.org/plants/result.php?id_plant=COSEC4, Accessed: May 21, 2016</p> <p>⁸Pojar J., McKinnon A., 2004 Plants of the Pacific Northwest Coast: Washington, Oregon, British Columbia and Alaska, B.C. Ministry of Forests and Lone Pine Publishing, Canada.</p> <p>⁹USDA NRCS Plants Database [Online], Available: http://plants.usda.gov/core/profile?symbol=cosc4, Accessed May 7, 2016.</p> <p>¹⁰Zevit, P., Fairbanks, M., 2010, BC's Coast Region: Species & Ecosystems of Conservation Concern Scouler's Corydalis (<i>Corydalis scouleri</i>), South Coast Conservation Program.</p>
Other Sources Consulted	Rose, Robin, Chachulski, Caryn E.C., Haase, Diane L., 1998, Propagation of Pacific Northwest Native Plants. Oregon State University Press, 256 p.
Protocol Author	Jack Armstrong
Date Protocol Created or Updated	05/25/2016



Image: Jack Armstrong, 2010, Olympia, Washington