Plant Propagation Protocol for *Osmorhiza depauperata*
ESRM 412 – Native Plant Production
URL: https://courses.washington.edu/esrm412/protocols/2026/*OSDE.pdf*

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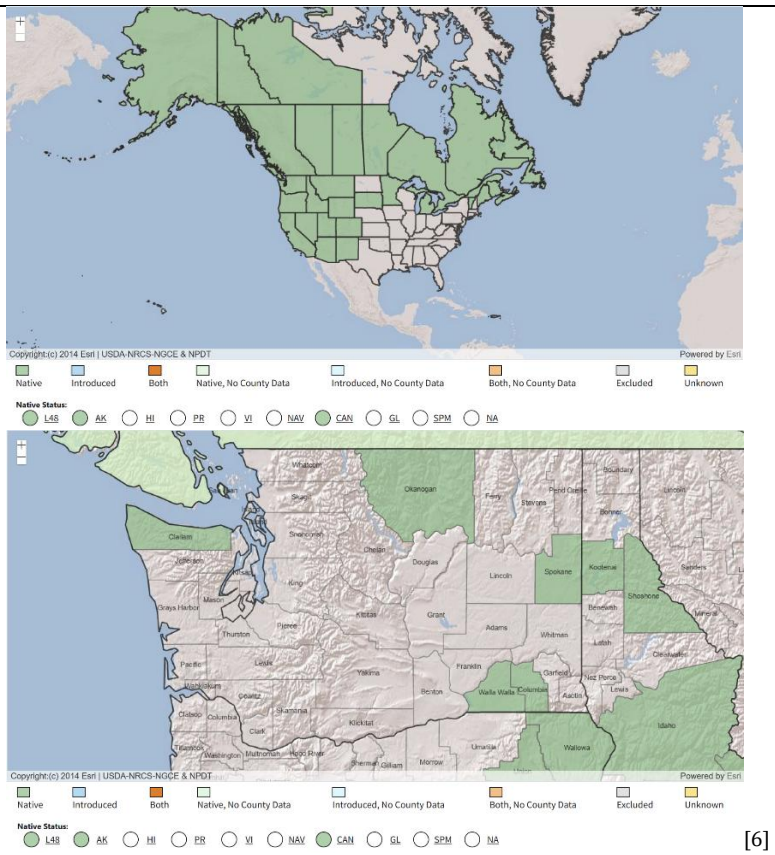
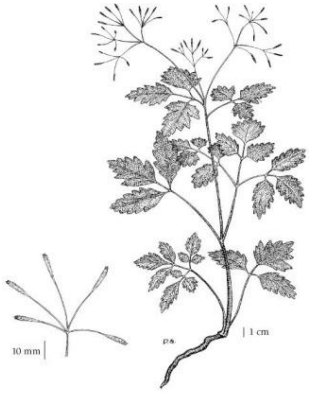
TAXONOMY	
Plant Family	
Scientific Name	Apiaceae [4]
Common Name	Carrot Family [4]
Species Scientific Name	
Scientific Name	*Osmorhiza depauperata* Phil. [2]
Varieties	N/A
Sub-species	N/A
Cultivar	N/A
Common Synonym(s)	➢ *Osmorhiza chilensis* Hook. & Arn. var. *cupressimontana* (B. Boivin) B. Boivin (OSCHC) [6] ➢ *Osmorhiza obtusa* (J.M. Coult. & Rose) Fernald (OSOB2) [6] ➢ *Washingtonia obtusa* J.M. Coult. & Rose (WAOB) [6]
Common Name(s)	➢ Bluntseed sweetroot [3] ➢ blunt-fruit sweet-cicely [3]
Species Code (as per USDA Plants database)	OSDE [7]
GENERAL INFORMATION	

Geographical range	 [6] Occurring chiefly east of the Cascades crest in Washington, Alaska, to California, east to the northern Great Plains, Great Lakes region, and northeastern North America. [2]
Ecological distribution	Conifer forest, aspen woodland. [9] It is a perennial and grows primarily in the temperate biome. [5] Associated plant species include *Betula papyrifera* (paper birch), *Populus tremuloides* (quaking aspen), *Abies balsamea* (balsam fir), *Acer spicatum* (mountain maple), *Aralia nudicaulis* (wild sarsaparilla), *Streptopus lanceolatus* (rose twistedstalk), and *Clintonia borealis* (bluebead lily). [10]
Climate and elevation range	Forest understory and edge, often moist from low to middle elevations. [2] **Elevation Range:** 500 - 3300 m [9]
Local habitat and abundance	Moist to mesic open forests and forest margins in the lowland and montane zones; frequent in BC E of the Coast-Cascade Mountains, rare in SW BC; N to AK and YT, E to NF and S to SD, NM and CA, disjunct to S. America. [7] Uncommon in shrubby areas alongside roads. [8]

Plant strategy type / successional stage	*Osmorhiza depauperata* has low drought, fire, anaerobic, salinity, and shade tolerance. [6]
Plant characteristics  *Osmorhiza depauperata* [8]	Forb/herb that when mature stands 2ft tall. [6] Perennial herb from a well-developed taproot, sometimes below a slightly branched stem-base; stems solitary or sometimes 2-3, 15-70 cm tall, branching. [7] **Leaves***:* Basal and stem leaves twice divided into 3's, leaflets coarsely toothed, 1.5-7 cm long, 1-4 cm wide, more or less hairy; thin basal leaves several, stalks long; stem leaves 1-3, stalks short. [7] **Flowers***:* Inflorescence of loose compound umbels; flowers greenish white, sometimes pink or purple, inconspicuous; involucels lacking. [7] **Fruits***:* Club-shaped, 10-15 mm long, narrowing to a rounded or blunt end, the tip not beaklike. [7]
PROPAGATION DETAILS: FROM SEED	
Ecotype	*Osmorhiza chilensis* H. & A. was the species used in this propagation protocol. *Osmorhiza chilensis* H. & A and *Osmorhiza depauperata* Phil. can be found in the same habitat, and they are propagated very similarly, having similar requirements. The ecotype for this protocol was in Montana in 2008 within a Cedar/Hemlock forest, Avalanche, 1000m. [4]
Propagation Goal	Plants [4]
Propagation Method	Seed [4]
Product Type	Container (plug) [4]
Stock Type	160 mL containers [4]
Time to Grow	11 months [4]
Target Specifications	**Height**: 7 cm, 4 to 6 true leaves. [4] **Root System:** firm plug-in conetainer. [4]
Propagule Collection Instructions	The best time to search for seeds is when the plants have mature fruits, likely July to early August. Plants may be discernible from mid-June to mid-August, but the presence of mature fruits is necessary to identify the species accurately to distinguish from congeners. [10] Seeds should be hand-collected when they turn black and are easily stripped from the inflorescence. Seeds are kept in paper bags in a well-ventilated drying shed prior to cleaning. [4]
Propagule Processing/Propagule Characteristics	Seed longevity is estimated at 5 years in sealed conetainers at 1 °C. Seed dormancy is classified as deep morpho-physiological dormancy. [4] **Seeds per kilogram**: 16,000/kg. [4] **% Purity:** 100%. [4] **% Germination:** 47% [4]

	Seeds per Pound: 132,000/lb [6]
Pre-Planting Propagule Treatments	5 months of cold, moist outdoor stratification. A minimum of 140 days of stratification is recommended for germination. Conetainers are filled and sown in late fall and irrigated thoroughly prior to winter stratification. [4]
Growing Area Preparation / Annual Practices for Perennial Crops	**Growing Area:** Outdoor nursery growing facility. [4] **Sowing Method**: Direct Seeding. [4] Germination is reported to be higher in the presence of light for this genus. Thus, seeds should be surface sown. The growing medium used is 50% milled sphagnum peat, perlite, and vermiculite with Osmocote controlled release fertilizer (13N:13P2O5:13K2O; 8 to 9 month release rate at 21 °C) 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 container. [4] The plant is adapted for fine-textured and medium-textured soils. [6]
Establishment Phase Details	Medium is kept slightly moist during germination. Initial germination appeared uniform and complete after 2 weeks. Germination occurs in mid-May under fluctuating temperatures. [4]
Length of Establishment Phase	4 weeks. [4]
Active Growth Phase	Root and shoot development occur rapidly following germination. 2 to 4 true leaves were evident 6 weeks after germination. Plants were fertilized with 20-20-20 liquid NPK fertilizer at 100 ppm during the growing season. Seedlings are placed in the shade house during active growth. [4] The active growth period occurs in spring, summer, and fall. [6]
Length of Active Growth Phase	16 weeks. [4]
Hardening Phase	Irrigation is gradually reduced in September and October. Conetainers are leached with clear water and fertilized with 10-20-20 NPK liquid fertilizer at 200 ppm once before winterization. [4]
Length of Hardening Phase	8 weeks. [4]
Harvesting, Storage and Shipping	**Total Time to Harvest:** 11 months. [4] **Harvest Date:** September. [4] **Storage Conditions:** Overwinter in an outdoor nursery under an insulating foam cover and snow. [4]
Length of Storage	5 months. [4]
Guidelines for Outplanting / Performance on Typical Sites	Some shade is required for establishment during nursery production and on outplanting sites. [4]

Other Comments	N/A
INFORMATION SOURCES	
References	1. Doyen, John. "*Osmorhiza Depauperata*." *CalPhotos*, University of California, Berkeley, 2019, calphotos.berkeley.edu/cgi/img_query?seq_num=835664&one=T. Accessed 17 May 2026. 2. Gilbin, David. "*Osmorhiza Depauperata*." *Burke Herbarium Image Collection*, biology.burke.washington.edu/herbarium/imagecollection/taxon.php?Taxon=Osmorhiza+depauperata. Accessed 17 May 2026. 3. John, Haskins. "*Osmorhiza Depauperata*." *Washington Flora Checklist*, Burke Herbarium, 15 May 2020, burkeherbarium.org/waflora/checklist.php?Taxon=Osmorhiza%20depauperata. Accessed 17 May 2026. 4. Luna, Tara, et al. "Propagation Protocol for Production of Container (Plug) *Osmorhiza Chilensis* H. & A. Plants 160 Ml Conetainers; USDI NPS - Glacier National Park West Glacier, Montana." *Native Plant Network — National Center for Reforestation, Nurseries and Genetics Resources*, USDA Forest Service, 2026, npn.rngr.net/renderNPNProtocolDetails?selectedProtocolIds=apiaceae-osmorhiza-6. Accessed 17 May 2026. 5. "*Osmorhiza Depauperata* Phil." *Plants of the World Online*, Royal Botanic Gardens, KEW, 2024, www.plantsoftheworldonline.org/taxon/urn:lsid:ipni.org:names:845548-1. Accessed 17 May 2026. 6. "*Osmorhiza Depauperata* Phil." *Natural Resource Conservation Service*, USDA, plants.usda.gov/plant-profile/OSDE. Accessed 17 May 2026. 7. "*Osmorhiza Depauperata* Phil." *E-Flora BC Atlas Page*, Lab for Advanced Spatial Analysis, Department of Geography, University of British Columbia, Vancouver, 2020, linnet.geog.ubc.ca/Atlas/Atlas.aspx?sciname=Osmorhiza+depauperata. Accessed 17 May 2026.

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