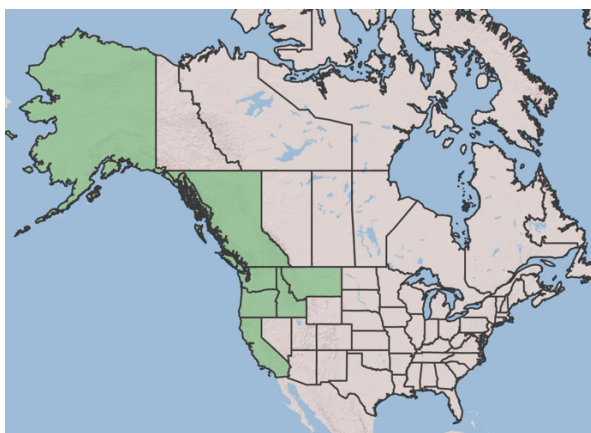


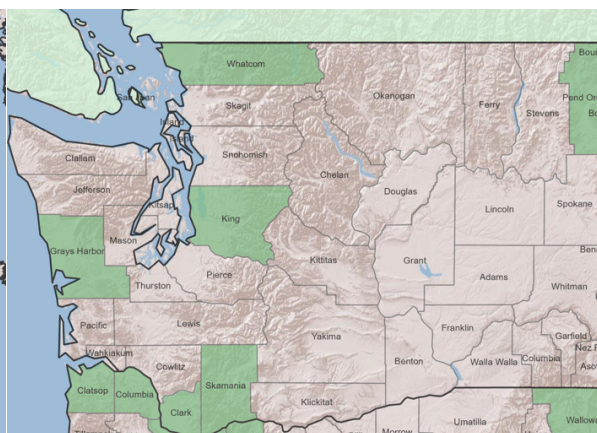
Plant Propagation Protocol for *Crataegus suksdorfii*

ESRM 412 – Native Plant Production

URL: <https://courses.washington.edu/esrm412/protocols/2023/CRSU16.pdf>



USDA Plants Database



USDA Plants Database



<https://nativeplantspnw.com/black-hawthorns-crataegus-douglasii-c-suksdorfii/>

TAXONOMY

TAXONOMY	
Plant Family	
Scientific Name	Rosaceae Juss
Common Name	Rose family
Species Scientific Name	
Scientific Name	<i>Crataegus suksdorfii</i> (Sarg.) Kruschke
Varieties	n/a
Sub-species	n/a
Cultivar	n/a
Common Synonym(s)	<i>Crataegus douglasii</i> Lindl. Var. <i>suksadorfii</i> Sarg.
	<i>Crataegus gaylussacia</i> A. Heller
Common Name(s)	Suksdorf's hawthorn & Black Hawthorn

Species Code (as per USDA Plants database)	CRSU16
GENERAL INFORMATION	
Geographical range	<i>Crataegus suksdorfii</i> is located in Canada (BC), Alaska, California, Idaho, Montana, Oregon, and Washington. ¹ In Washington it may be found in Clark, Grays Harbor, King, Pend Oreille, San Juan, Skamania, and Whatcom county. ¹
Ecological distribution	This species primarily occurs in riparian zones and grows in thickets. ^{2,3,4} It grows best in moist or wet clay soils with full sun, but is very tolerant to other conditions. ⁹ The Montana Field guide extends <i>Crataegus suksdorfii</i> 's occurrence to valleys and the Burke Herbarium lists grasslands, shores, meadows, open forests, and forest edges as additional habitats that are suitable for <i>Crataegus suksdorfii</i> 's synonym species <i>Crataegus douglasii</i> and <i>Crataegus gaylussacia</i> . ^{4,5} This species can tolerate shade but prefers full sun to light shade. ² <i>Crataegus</i> spp. generally occurs in wet and fine textured soils. ⁶
Climate and elevation range	The Burke Herbarium lists the occurrence of <i>Crataegus suksdorfii</i> 's two synonyms, <i>Crataegus douglasii</i> and <i>Crataegus gaylussacia</i> as existing at middle to low elevations in the mountains. ^{4,5}
Local habitat and abundance	In preferred ecosystems (damp and clay soils), it is associated with Pacific Serviceberry, Cusick's Checkermallow, and common Camas. ⁹ The California Native Plant Link Exchange lists Foothill Woodland, Mixed Evergreen Forest, Northern Oak Woodland, Yellow Pine Forest, and Red Fir Forest as plant communities containing <i>Crataegus suksdorfii</i> . ¹⁰
Plant strategy type / successional stage	This species has extensive and spreading root systems, which make it a favored species for erosion control in riparian zones. ^{7,8} It is said to tolerate relocation well and to be generally persistent species in unfavorable conditions. ^{8,9} Because of its success in wet environments, it is known to encroach on and take over wet prairies, so it is often removed from these environments to protect the declining prairie habitats. ⁹
Plant characteristics	<i>Crataegus suksdorfii</i> is a perennial small-medium tree/shrub. ^{1,10} It is a deciduous angiosperm with an alternating leaf pattern and white flowers that bloom in April/May up until June. ^{8,11} This species produces dark purple-black berries following the flowers in the early summer that darken/deepen in color throughout July. ⁸ At the end of the summer the leaves gradually become a deep red-orange color until they eventually drop their leaves. ¹¹
PROPAGATION DETAILS	
Ecotype	n/a
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Container
Stock Type	172 ml conetainers
Time to Grow	9 months ¹⁴
Target Specifications	Seedling height of 22cm, a Caliper of 7mm , and well developed and firm root system. ¹⁴

Propagule Collection Instructions	Seed collection occurs in the late summer post fruit development. Fruits may be collected in and stored in plastic bags in a temperature-controlled space. ¹⁴
Propagule Processing/Propagule Characteristics	Seeds may be isolated from fruit via maceration and screening. ¹⁴ Seeds may be stored at this stage for up to 10 years at 37-41 degrees Fahrenheit. ¹⁴ * This propagation protocol is based on information gathered about <i>Crataegus suksdorfii</i> (Sarg.) Kruschke and propagation information involving <i>Crataegus douglasii</i> Lindl..
Pre-Planting Propagule Treatments	Seeds may be washed using a 3:1 water and hydrogen peroxide mixture for 20 minutes. They should then be left in a running water soak for 48-72 hours. The seeds may then be placed in a moist, cold stratification for 90-120 days. ^{14,15} Following stratification, the seeds should then be placed in a ventilated container beneath milled peat moss and kept at 33-37 degrees Fahrenheit. The Propagation of Pacific Northwest Native Plants states that there have been convincing reports of success using acid scarification for 0.3-5 hours before stratification. ¹⁵ Using these techniques, the germination rate can be expected to be 50%. ¹⁴ Seeds collected in Washington, Oregon, and Idaho have a seed per pound of 22,000. ¹³
Growing Area Preparation / Annual Practices for Perennial Crops	Seedlings may be grown in an outdoor and greenhouse growing area. ¹⁴ Treated seeds should be sown in the Spring. ¹⁵ The greenhouse should be kept at 69-77 degrees Fahrenheit during the day and 60-65 degrees Fahrenheit at night. ¹⁴ Seedlings should be moved outdoors in mid-May for the rest of the growing season. ¹⁴
Establishment Phase Details	Germination is typically uniform and complete in 2 weeks.
Length of Establishment Phase	4 weeks ¹⁴
Active Growth Phase	Rapid seedling growth following germination. Seedlings produce 4-6 true leaves by the 2-week post germination mark. ¹⁴ Seedlings may reach 16cm in height by week 13. ¹⁴
Length of Active Growth Phase	16 weeks ¹⁴
Hardening Phase	Seedlings may be fertilized in August and September and irrigation may be reduced in September. ¹⁴
Length of Hardening Phase	4 weeks. ¹⁴
Harvesting, Storage and Shipping	Harvest should be done in September. Seedlings should overwinter under insulation in an outdoor nursery. ¹⁴
Length of Storage	Seedlings may be stored for 5 months. ¹⁴ Seeds may be stored for 10 years in 37-41 degrees Fahrenheit. ¹⁴
Guidelines for Outplanting / Performance on Typical Sites	Though this Species tends to be quite tolerable, an ideal out-planting site would be one that is of clay soils with ample water and full sun. ⁹
Other Comments	This propagation protocol is based on information gathered about <i>Crataegus suksdorfii</i> (Sarg.) Kruschke and propagation information involving <i>Crataegus douglasii</i> Lindl.. These two species differ only slightly, in the number of stamens, <i>suksdorfii</i> having 20 and <i>douglasii</i> have 10. ^{3,13} Both species flower between May

	<p>and June and produce berries towards the end of the summer through early fall.^{2,5,12}</p> <p>The techniques described in this protocol are primarily based on those listed in the RNGR Native Plant Network Propagation Protocol Database for <i>Crataegus douglasii</i>.¹⁴</p>
<h3>INFORMATION SOURCES</h3>	
References	<ol style="list-style-type: none"> 1. “<i>Crataegus Suksdorfii</i> (Sarg.) Kruschke.” <i>USDA Plants Database</i>, plants.usda.gov/home/plantProfile?symbol=CRSU16. Accessed 21 May 2023. 2. “<i>Crataegus Suksdorfii</i>.” <i>Mostly Natives Nursery</i>, www.mostlynatives.com/plants/crataegus-suksdorfii. Accessed 21 May 2023. 3. Suksdorf's Hawthorn — <i>Crataegus suksdorfii</i>. Montana Field Guide. Montana Natural Heritage Program. Retrieved on May 24, 2023, from https://FieldGuide.mt.gov/speciesDetail.aspx?elcode=PDROS0H4Y0 4. “<i>Crataegus Gaylussacia</i>.” <i>Burke Herbarium Image Collection</i> , burkeherbarium.org/imagecollection/taxon.php?Taxon= Crataegus+gaylussacia. Accessed 21 May 2023. 5. Giblin , David. “<i>Crataegus Douglasii</i>.” <i>Burke Herbarium Image Collection</i> , burkeherbarium.org/imagecollection/taxon.php?Taxon= =Crataegus+douglasii. Accessed 21 May 2023. 6. “Hawthorn - <i>Crataegus</i> Spp.” <i>Center for Forest Conservation Genetics</i> , 22 Jan. 2013, cfcg.forestry.ubc.ca/resources/species-reports/hawthorn/. 7. “Black Hawthorns, <i>Crataegus Douglasii</i> & c. <i>Suksdorfii</i>.” <i>Native Plants PNW</i>, 23 Mar. 2015, nativeplantspnw.com/black-hawthorns-crataegus-douglasii-c-suksdorfii/. 8. Ternes, Anne. “Native Plant Highlight: Suksdorf's Hawthorn.” <i>Backyard Habitats</i>, 9 July 2022, backyardhabitats.org/2022/07/native-plant-highlight-suksdorfs-hawthorn/. 9. Aoki , Mieko, et al. “Suksdorf's Hawthorn - <i>Crataegus Suksdorfii</i> .” <i>Native Trees In Our Garden</i> , edited by John Coggins , 2nd ed., A Committee of the Emerald Chapter of the Native Plant Society of Oregon, 2011, pp. 6–6. 10. “<i>Crataegus Suksdorfii</i> .” <i>California Native Plant Link Exchange</i> , www.cnplx.info/nplx/species?taxon=Crataegus%2Bsuksdorfii. Accessed 20 May 2023. 11. “Plant Database - <i>Crataegus Suksdorfii</i>.” <i>Lady Bird Johnson Wildflower Center</i> , www.wildflower.org/plants/result.php?id_plant=CRSU16. Accessed 20 May 2023. 12. “<i>Crataegus Douglasii</i>.” <i>USDA Plants Database</i>, plants.usda.gov/home/plantProfile?symbol=CRDO2. Accessed 24 May 2023.

	<p>13. “Species: <i>Crataegus Douglasii</i>.” <i>Fire Effects Information System</i> , www.fs.usda.gov/database/feis/plants/shrub/cradou/all.html</p> <p>#DISTRIBUTION%20AND%20OCCURRENCE. Accessed 24 May 2023.</p> <p>14. Luna, Tara; Evans, Jeff; Wick, Dale. 2008. Propagation protocol for production of Container (plug) <i>Crataegus douglasii</i> Lindl. plants 172 ml conetainers; USDI NPS - Glacier National Park West Glacier, Montana. In: Native Plant Network. URL: https://NativePlantNetwork.org (accessed 2023/05/24). US Department of Agriculture, Forest Service, National Center for Reforestation, Nurseries, and Genetic Resources.</p> <p>15. Rose, R., Chachulski, C. and Huose, d. 1998 Propagation of Pacific Northwest Native Plants. Corvallis, OR: Oregon State University Press.</p>
Other Sources Consulted	n/a
Protocol Author	Callysta Coyne
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