

Plant Propagation Protocol for *Arctostaphylos columbiana*, Hairy manzanita
 ESRM 412 – Native Plant Production
 URL: <https://courses.washington.edu/esrm412/protocols/2021/USDARCO3.pdf>




(11)

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TAXONOMY

TAXONOMY	
Plant Family	
Scientific Name	Ericaceae
Common Name	Heath Family
Species Scientific Name	
Scientific Name	<i>Arctostaphylos columbiana</i> Piper
Varieties	<i>A. columbiana</i> var. <i>columbiana</i> <i>A. columbiana</i> var. <i>tracyi</i> (Eastw.) Adams
Sub-species	N/A
Cultivar	N/A
Common Synonym(s)	<i>Arctostaphylos columbiana</i> Piper var. <i>tracyi</i> Eastw. <i>Arctostaphylos tracyi</i> (Eastw.) J.E. Adams ex McMinn
Common Name(s)	Hairy manzanita
Species Code (as per USDA Plants database)	ARCO3
GENERAL INFORMATION	

Geographical range	 <p>(9)</p> <p>It is distributed along the coast ranging from Sonoma county, CA to Vancouver BC. It is also seen in the Cascade ranges on western slopes in Washington and Oregon.</p> <p>(6)</p>
Ecological distribution	Understory species of coniferous forests and found scattered in small clusters with other shrub species in clearings (6). It inhabits well drained rocky slopes
Climate and elevation range	It inhabits well drained rocky slopes and western slopes of the cascades. (8,11) At an elevation of 2500 ft and below (8)
Local habitat and abundance	Associated species include: golden chinquapin (<i>Chrysolepis chrysophylla</i>), bishop pine (<i>Pinus muricata</i>), Bolander pine (<i>P. contorta</i> var. <i>bolanderi</i>), shore pine (<i>P. contorta</i> var. <i>contorta</i>), pygmy cypress (<i>Cupressus goveniana</i> spp. <i>pygmaea</i>), and grand fir (<i>Abies grandis</i>), Oregon-grape (<i>Mahonia nervosa</i>), salal (<i>Gaultheria shallon</i>), whiteleaf manzanita (<i>Arctostaphylos viscida</i>), snowbrush (<i>Ceanothus velutinus</i>), deerbrush (<i>C. integerrimus</i>), and vine maple (<i>Acer circinatum</i>) beargrass (<i>Xerophyllum tenax</i>), Canada horseweed (<i>Conyza canadensis</i>), darkblue penstemon (<i>Penstemon davidsonii</i>), Oregon stonecrop (<i>Sedum oregonense</i>), and Ross sedge (<i>Carex rossii</i>) Parsley fern (<i>Cryptogramma acrostichoides</i>). (5)
Plant strategy type / successional stage	It is an initial or secondary colonizer of disturbed sites. It is found in plant communities in which there is a removal of the forest overstory. It does not tolerate deep shade and is not found in closed canopy old growth forests. (6)
Plant characteristics	Hairy manzanita is a branchy evergreen shrub or small tree that gets to be 1-3 meters in height. It has a dense rounded canopy. Young bark is white and not smooth while mature bark is dark red brown and smooth. It has short oblong leaves that are 2.5-6 cm long and 1.5-3 cm wide and pale green on both sides. It flowers from March to May. The flowers are white and arranged in short, dense panicles. It has fruit that is 7-11 mm long that is hairy when young and smooth reddish brown when mature. Each fruit contains several seeds. (11)

PROPAGATION DETAILS: SEEDS	
Ecotype	N/A
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Propagules propagated from seed
Stock Type	
Time to Grow	N/A
Target Specifications	N/A
Propagule Collection Instructions	Seed collection to be done in August. (4)
Propagule Processing/Propagule Characteristics	18000 seeds per pound (10) Seeds can be stored for up to 10 years and should be dried and stored at 2-4° C for best results. (1)
Pre-Planting Propagule Treatments	The fleshy fruit part should be removed by macerating with water and filtering out seeds by floatation or air screening. (8) Since it has a hard seed coat it is recommended to use different method of scarification to mimic digestion or fire. Soaking in sulfuric acid for 24 hours, soaking in boiling water for 10-20 minutes then burning straw on top. (3)
Growing Area Preparation / Annual Practices for Perennial Crops	Hairy manzanita prefers loose, well-drained soils and, like other members of the heath family (Ericaceae), has an obligate relationship with mycorrhizal fungi. (10)
Establishment Phase Details	Treated seeds should be stratified in a moist mix of milled sphagnum and beach sand for 2-8 months until they germinate. (10)
Length of Establishment Phase	2-8 months. (10)
Active Growth Phase	N/A
Length of Active Growth Phase	N/A
Hardening Phase	N/A
Length of Hardening Phase	N/A
Harvesting, Storage and Shipping	Roots not to be disturbed. (7)
Length of Storage	N/A
Guidelines for Outplanting / Performance on Typical Sites	Since it grows in acidic soils plant into organic rich soils or acidified fertilizers. Avoid planting in areas subject to water logging. Water every four to six weeks during establishment to ensure success. Rock mulches may be useful in weed control and stabilization. (1) Outplant late fall to early winter for best results. (10)
PROPAGATION DETAILS : VEGETATIVE	
Ecotype	N/A
Propagation Goal	Plants
Propagation Method	Vegetative
Product Type	1 gallon containers
Stock Type	N/A
Time to Grow	N/A

Target Specifications	1 gallon containers with proper root development (10)
Propagule Collection Instructions	Cuttings of 1-2 inches of the woody stem from previous years growth, should be collected between January and March for best results.(10)
Propagule Processing/Propagule Characteristics	N/A
Pre-Planting Propagule Treatments	Cuttings should be dipped in rooting hormone prior to placement in soil. (10)
Growing Area Preparation / Annual Practices for Perennial Crops	For rooting use sand peat mixture. Once rooted transfer to potting soil. Cuttings should be kept moist and at high humidity until roots appear. Once rooted they should be planted in small containers with potting soil. (10)
Establishment Phase Details	N/A
Length of Establishment Phase	2-3 months (7).
Active Growth Phase	Mature plants are 2.5-16.6 ft tall (7)
Length of Active Growth Phase	N/A
Hardening Phase	Plants should be placed in 1 gal containers and grown under vigorous conditions to prepare for outplanting. (10)
Length of Hardening Phase	N/A
Harvesting, Storage and Shipping	Roots must not be disturbed(7).
Length of Storage	About 1 year (7)
Guidelines for Outplanting / Performance on Typical Sites	Since it grows in acidic soils plant into organic rich soils or acidified fertilizers. Avoid planting in areas subject to water logging. Water every four to six weeks during establishment to ensure success. Rock mulches may be useful in weed control and stabilization. (1) Outplant late fall to early winter for best results. (10)
Other Comments	N/A

INFORMATION SOURCES

References	<ol style="list-style-type: none"> 1. (Hairy) Manzanita (<i>Arcostaphylos columbiana</i>). (n.d.). Retrieved May 25, 2021, from https://metchosin.civicweb.net/document/1750 2. Berg, Arthur R. 1974. <i>Arctostaphylos</i> Adans. manzanita. In: Schopmeyer, C. S., technical coordinator. <i>Seeds of woody plants in the United States</i>. Agric. Handb. 450. Washington, DC: U.S. Department of Agriculture, Forest Service: 228-231. 3. Bressette, D. K. (2015, October 26). Hairy Manzanita, <i>arctostaphylos columbiana</i>. Retrieved May 25, 2021, from http://nativeplantspnw.com/hairy-manzanita-arctostaphylos-columbiana/ 4. G. (n.d.). Native Plant Seed Collection Times For BC's Garry Oak Ecosystems. Retrieved May 25, 2021, from https://www.goert.ca/documents/GOERT-native-plant-seed-collection-times.pdf 5. Howard, J. L. (1993). <i>Arctostaphylos columbiana</i>. Retrieved May 25, 2021, from https://www.fs.fed.us/database/feis/plants/shrub/arccol/all.html#21 6. Kruckeberg, A. R. (1996). <i>Gardening with native plants of the Pacific Northwest</i>. Univ. of Washington. 7. Rodgers, K. (2008, April 29). Plant Propagation Protocol for <i>Arctostaphylos columbiana</i>, Hairy Manzanita. Retrieved May 25, 2021, from http://courses.washington.edu/esrm412/protocols/2008/ARCO3.pdf 8. T. (2007, January 01). <i>Arctostaphylos columbiana</i>. Retrieved May 25, 2021, from https://www.wildflower.org/plants/result.php?id_plant=ARCO3 9. U. (n.d.). <i>Arctostaphylos columbiana</i> Piper. Retrieved May 25, 2021, from https://plants.usda.gov/home/plantProfile?symbol=ARCO3 10. Wilken, D., & Burgher, J. (2007). <i>Arctostaphylos columbiana</i> Piper. Retrieved May 25, 2021, from https://www.nurserytrees.com/Plant_Guide/Plant_Guide_hairy_manzanita.htm 11. Wilken, D., & Burgher, J. (n.d.). HAIRY MANZANITA <i>Arctostaphylos columbiana</i> Piper. Retrieved May 25, 2021, from https://plants.usda.gov/DocumentLibrary/plantguide/pdf/pg_arco3.pdf
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