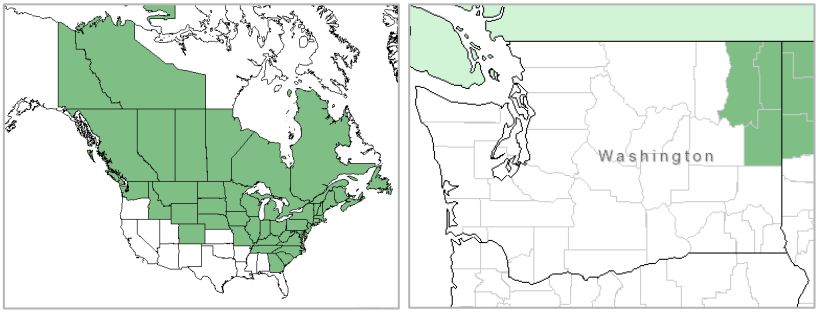
Plant Propagation Protocol for *Aralia nudicaulis* L.
ESRM 412 – Native Plant Production

Images: Wikimedia Commons

TAXONOMY	
Plant Family	
Scientific Name	*Araliaceae*
Common Name	Ginseng family
Species Scientific Name	
Scientific Name	*Aralia nudicaulis* Linnaeus
Varieties	none
Sub-species	none
Cultivar	none
Common Synonym(s)	none
Common Name(s)	wild sarsaparilla
Species Code =	ARNU2
GENERAL INFORMATION	
Geographical range	 *Images:* USDA PLANTS Database
Ecological distribution	*A. nudicaulis* is commonly found in boreal coniferous and mixed-woodlands as a shade-loving understory species with habitats including most/dry woodland, thickets, riparian areas, and the edges of prairies or bogs. However, wild sarsaparilla

	may also occur in more exposed conditions such as sand plains and dunes, rocky ridges, and canyon sides. (Pavek, 1933)
Climate and elevation range	Wild sarsaparilla can be found in continental climates that are humid to subhumid with moderate precipitation varying from 16.1 to 65 inches (409-1,650 mm). Winters are long and cool to cold with short and warm summers.The plant occurs in a variety of elevations across the US. Closer to Washington, it is documented as appearing in low to mid-range elevations (2,500 – 4,700 ft) in Montana and Idaho. (Pavek, 1933)
Local habitat and abundance	Forest communities where *A. nudicaulis* has been commonly found include the following: FRES10 White - red - jack pine FRES11 Spruce - fir FRES14 Oak - pine FRES15 Oak - hickory FRES17 Elm - ash - cottonwood FRES18 Maple - beech - birch FRES19 Aspen - birch FRES20 Douglas-fir FRES21 Ponderosa pine FRES22 Western white pine FRES23 Fir - spruce FRES25 Larch Plant species that are commonly associated with *A.* nudicaulis include *Arnica larifolia, Aster marophyllus, Cornus Canadensis, Clintonia uniflora, and Malanthemum canadense. Gymnocarpium dryopteris* and *Pteridium aquilinum* are often found alongside it as well. (Pavek, 1933)
Plant strategy type / successional stage	A facultative, late successional species, *A. nudicaulis* is characteristic in many types of climax forests. Post-fire successional strategies depend on rhizomes withstanding the heat. (Pavek, 1933)
Plant characteristics	A low-growing perennial forb with pinnate leaves that is 1-3 ft. tall. *A. nudicaulis* can spread vegetatively by rhizomes or by seed. Blooms occur between May and June with fruits emerging and maturing between July and August. Flowers are white or green to brown blooming in threes on a leafless stem and often below leaf level. It can be mistaken for poison oak due to leaves arising in three. New leaf growth can display reddish hues. (Hilty, 2015)
PROPAGATION DETAILS	
Ecotype	
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Plug + Container
Stock Type	

Time to Grow	
Target Specifications	25 cm or taller http://practicalplants.org/wiki/Aralia_nudicaulis#cite_note-PFAFimport-134-15
Propagule Collection Instructions	Collect fleshy fruit when mature, approximately 32 days after bloom. Fruits may be collected in Autumn when the fruit begins to fall off the plant. Fruits are green when immature, becoming purple or black when ripe. (Helenurm, 1987)
Propagule Processing/Propagule Characteristics	Fruits are berry-like drupes that contain 2-5 light red-brown oblong shaped nutlets that each hold a thin compressed seed within. Nutlets should be extracted from fleshy fruit immediately after collection to prevent fermentation. The seed is ripe when nutlet endocarps become hard and brittle, which may occur some time after fruiting. (Bonner, 2008) Average seed weight is 7.27 g/1000 seeds. (Royal Botanic Gardens Kew, 2008)
Pre-Planting Propagule Treatments	Seeds can be harvested from fruit through maceration and flotation then screen dried. (Bonner, 2008)
Growing Area Preparation / Annual Practices for Perennial Crops	*A. nudicaulis* can be grown in a variety of media, ranging from sandy soil to deep loam, moderate to rich in nutrients. (Chittendon, 1951). It is found on all aspects and slopes, but requires a sheltered position. (Pavek, 1933)
Establishment Phase Details	Sulfuric acid scarification is recommended for 30 minutes, followed by 3-5 months of cold stratification. (Gough, 2011; Rice, 1988; Bonner, 2008) Alternatively, germination can occur on a warm-cold-warm stratification cycle at 30D/20N C alternating temperature cycle. (Gough, 2011; Baskin, 1998).
Length of Establishment Phase	Germination occurs within 1 - 4 months at 20° (Rice, 1988).
Active Growth Phase	
Length of Active Growth Phase	
Hardening Phase	Seedlings can be pricked into individual pots as soon as they are large enough to handle and grown in light shade in a greenhouse. (Bean, 1981)
Length of Hardening Phase	At minimum *A. nudicaulis* should be hardened through the length of its first winter as a seedling.
Harvesting, Storage and Shipping	Seeds should be stored in airtight, dry containers at low temperatures (Smreciu, 2013).
Length of Storage	
Guidelines for Outplanting /	Plants should be out planted during late spring or early summer. (Bean, 1981) 1,900 to 4,500 *A.nudiaculis* can be planted per

Performance on Typical Sites	hectare (Smreciu, 2013).
Other Comments	The rootstock is used as a flavoring and substitute for sarsaparilla. The plant has a long history of ethnobotanical medicinal use by Native Americans. (Plants for a Future)
INFORMATION SOURCES	
References	Baskin, C.J. and Baskin, J.M. Seeds: Ecology, Biogeography and Evolution in Dormancy and Germination, Academic Press, 1998. Chapter 10: A Geographical Perspective on Germination Ecology: Temperate and Arctic Zones, pages 331 to 458. Bean. W. 1981. *Trees and Shrubs Hardy in Great Britain. Vol 1 - 4 and Supplement.* Bonner, F.T. and R.P Karrfalt, 2008. The Woody Plant Seed Manual. United States Department of Agriculture. Agriculture Handbook 727. 1,228 pp. http://www.uri.edu/cels/ceoc/documents/WoodyPlantSeedManual-Complete.pdf Chittendon, F, 1951. RHS Dictionary of Plants plus Supplement. *1956* Oxford University Press (1951-00-00) Gough, Robert E., and Cheryl Moore-Gough. The Complete Guide to Saving Seeds: 322 Vegetables, Herbs, Flowers, Fruits, Trees, and Shrubs. North Adams, MA: Storey Pub., 2011. Helenurm, K.; Barrett, S. C. H. 1987. The reproductive biology of boreal forest herbs. II. Phenology of flowering and fruiting. Canadian Journal of Botany. 65: 2047-2056. Hilty, J. Editor. 2015. Insect Visitors of Illinois Wildflowers. World Wide Web electronic publication. illinoiswildflowers.info, version (09/2015) Pavek, D. S. 1993. Aralia nudicaulis. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: http://www.fs.fed.us/database/feis/ [2016, April 24]. Plants for a Future, n.d. Aralia nudicaulis L. http://www.pfaf.org/user/Plant.aspx?LatinName=Aralia%20nudicaulis [Last accessed April 17. 2016] Rice. G. (Editor) Growing from Seed. Volume 2. Thompson and

	Morgan. (1988-00-00) Royal Botanic Gardens Kew, 2008. Aralia nudicaulis L. Seed Information Database. http://data.kew.org/sid/SidServlet?ID=2088&Num=4b0#Storage [Last accessed April 24, 2016]. Smreciu, A.; Gould, K.; Wood, S. *Aralia Nudicaulis: Wild Sarsaparilla*, University of Alberta, Education and Research Archive, 2013. USDA, NRCS. 2016. The PLANTS Database (http://plants.usda.gov, 23 April 2016). National Plant Data Team, Greensboro, NC 27401-4901 USA.
Other Sources Consulted	
Protocol Author	Jennie C. Li
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