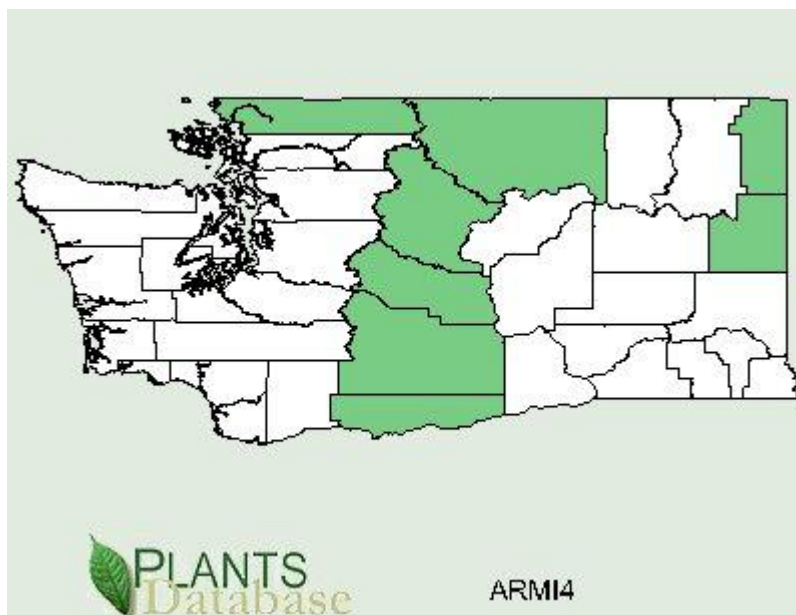
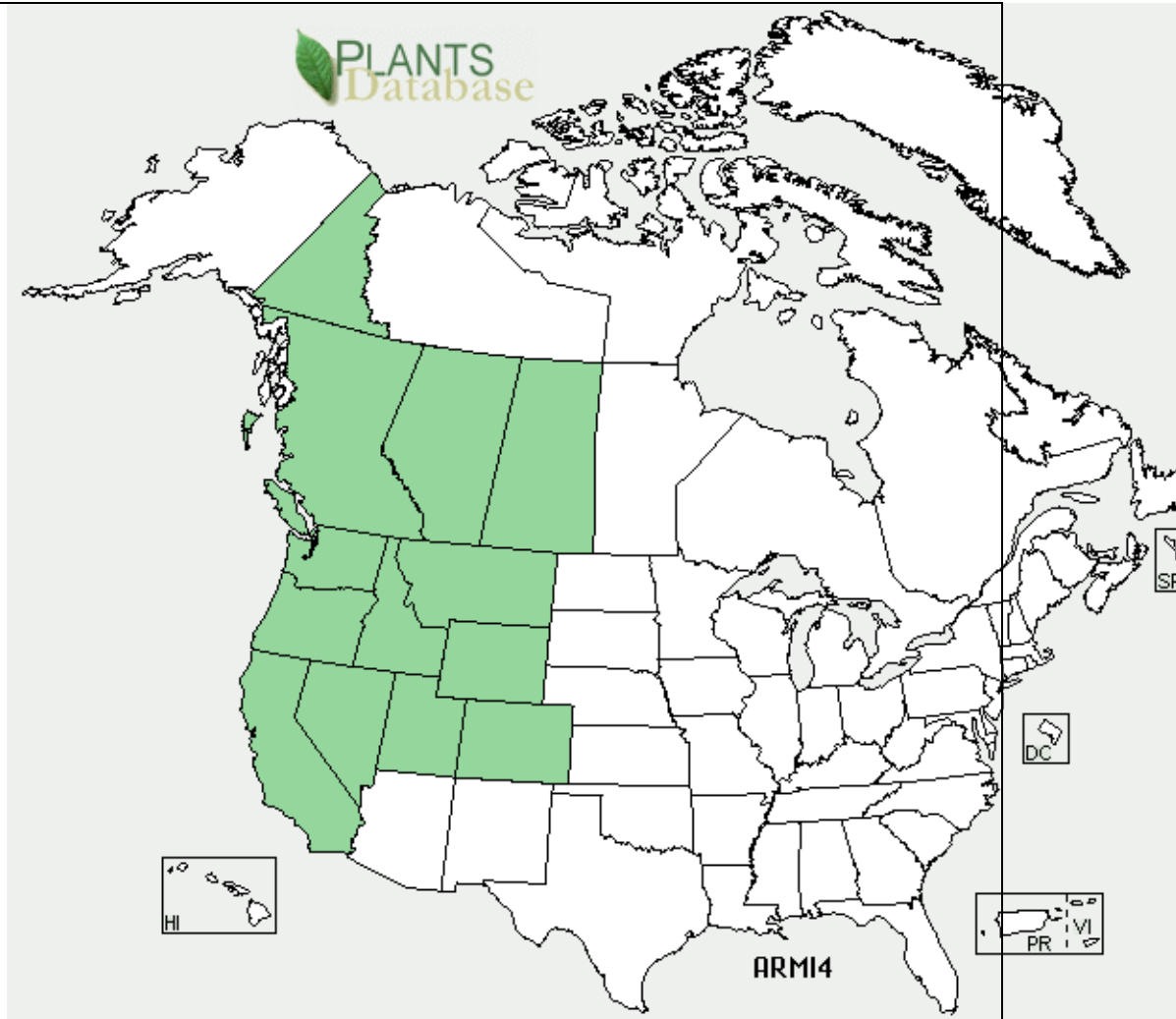


Plant Propagation Protocol for *Artemisia Michauxiana*
ESRM 412 – Native Plant Production

TAXONOMY	
Family Names	
Family Scientific Name:	Asteraceae
Family Common Name:	Sunflowers (5)
Scientific Names	
Genus:	Artemisia L.
Species:	michauxiana
Species Authority:	Bess.
Variety:	
Sub-species:	
Cultivar:	
Authority for Variety/Sub-species:	
Common Synonym(s)	Artemisia vulgaris L. ssp. Michauxiana (Besser) H St. John(4)
Common Name(s):	Michaux's Wormwood, Lemon Sagewort
Species Code (as per USDA Plants database):	ARMI4
GENERAL INFORMATION	

Geographical
range
(distribution
maps for North
America and
Washington
state)



	<p>California, Colorado, Idaho, Montana, Nevada, Oregon, Utah, Washington, Wyoming, Alberta, BC, SK, YT</p> <p>In Washington: Klickitat, Yakima, Kititas, Chelan, Spokane, Pend Oreille, Okanogan, Whatcom (4)</p>
Ecological distribution (ecosystems it occurs in, etc):	Subalpine, Alpine (2)
Climate and elevation range	9,843-11,483 ft. (8)
Local habitat and abundance	Steens, Wallowas, North Cascades, Rocky places (2)
Plant strategy type / successional stage	Not available
Plant characteristics	<p>Stems are green, many, and un-branched. Leaves are 1 in. long, narrow, divided twice often with small teeth and matted white hairs on the underside. Topside is hairless. They are dotted green and have yellow glands. Flower spikes themselves are narrow, 3-6 in. tall with “nodding flower heads”. Caps are purple in color and dotted with yellow glands. It is said to have a lemon scent. (1,2,3)</p>
PROPAGATION DETAILS	
Ecotype	Open talus slopes, Glacier National Park, MT. (9)
Propagation Goal:	Plant (9)
Propagation Method:	Seed (9)
Product Type	Container (plugs) (3)
Stock Type:	160 ml conetainers (9)
Time to Grow:	Late Winter/early Summer sowing, outplant in late Spring/early Summer (3)
Target Specifications:	10-15cm long (3)
Propagule	Hand collect seeds in mid-September when achenes turn grey and are simply

Collection	removed from the disc. Seeds are kept in well ventilated drying shed before cleaning. (9)
Propagule Processing/Propagule Characteristic:	Storage for seeds is about 5-7 years in sealed conetainers at 1-3 C. Physiological dormancy. 5,296,666 seeds per pound (7, 9)
Pre-Planting Propagule Treatments:	Cold stratification required, moist stratification recommended (7, 9)
Growing Area Preparation / Annual Practices for Perennial Crops:	Seeds are to be surface sown in milled sphagnum peat, perlite, and vermiculite. Conetainers are filled and sown in late Fall and irrigated prior to winter stratification. (9)
Establishment Phase:	Medium kept slightly moist for germination. Seedlings are thinned to one per conetainer, Irrigation frequency is important at this stage and should be done in the morning so as to allow for dry foliage during the day. (9)
Length of Establishment Phase:	4 weeks (9)
Active Growth Phase:	Root/shoot development happens rapidly after germination. Plants were fully root tight 12 weeks after germination. (9)
Length of Active Growth Phase:	8 weeks (9)
Hardening Phase:	Irrigation reduced in September/October. Plants are leached with clear water. (9)
Length of Hardening Phase:	2 weeks (9)
Harvesting, Storage and:	Harvest in August/September, store overwinter in outdoor nursery under insulating foam cover and snow. (9)
Length of Storage:	5 months (9)
Guidelines for Outplanting / Performance on Typical:	Not Available
Other Comments:	Has been known to cause dermatitis or allergic reactions when coming into contact with the skin. It is also a severe allergen. (6, 10)
INFORMATION SOURCES	
References (full citations):	<ol style="list-style-type: none"> 1. Klinkenberg, Brian. 2010. <i>E-Flora BC: Electronic Atlas of the Plants of British Columbia</i>. Lab for Advanced Spatial Analysis, Department of Geography, University of British Columbia, Vancouver. [http://linnet.geog.ubc.ca/Atlas/Atlas.aspx?sciname=Artemisia%20michauxiana]. 11 May. 2011.

	<ol style="list-style-type: none"> 2. Turner, Mike. <u>Wildflowers</u>. [http://www.pnwflowers.com/flower/artemisia-michauxiana]. 11 May. 2011 3. Plants for a Future. <u>Artemisia michauxiana- Besser</u>. [http://www.pfaf.org/user/Plant.aspx?LatinName=Artemisia%20michauxiana]. 11 May. 2011 4. Artemisia Michauxiana Besser/Michaux's Wormwood. [http://plants.usda.gov/java/profile?symbol=ARMI4]. 11 May. 2011. 5. Montana's Official State Website. <u>Michaux's Wormwood- Artemisia michauxiana</u>. [http://fieldguide.mt.gov/detail_PDAST0S110.aspx] 12 May. 2011. 6. Medicinal Herbs. <u>Artemisia michauxiana</u>. [http://www.naturalmedicinalherbs.net/herbs/a/artemisia-michauxiana=mountain-sagewort.php]. 12 May. 2011. 7. Sagebud. <u>Michaux's Wormwood</u>. [http://www.sagebud.com/michauxs-wormwood-artemisia-michauxiana/]. 12 May 2011. 8. Calflora. Consortium of Calif. Herbaria. [http://www.calflora.org/cgi-bin/species_query.cgi?where-calrecnum=715]. 11 May. 2011. 9. Luna, Tara; Evans, Jeff.; Wick, Dale. 2008. Propagation protocol for production of container <i>Artemisia michauxiana</i> Besser. Native Plant Network. [http://www.nativeplantnetwork.org] 16 May. 2011. 10. Pollen Library. <u>Michaux's Wormwood (Artemisia michauxiana)</u>. [http://www.pollenlibrary.com/Specie/Artemisia+michauxiana/]. 12 May. 2011.
Other Sources Consulted:	<ol style="list-style-type: none"> 1. Central Washington Native Plants. <u>Artemisia michuaxiana</u>. [http://www.cwnp.org/oka/pg/awind/armichauxiana.html]. 16 May. 2011.
Protocol Author:	Austin Sawhill
Date Protocol Created or Updated:	May 16, 2011

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