

## Plant Propagation Protocol for *Astragalus miser*

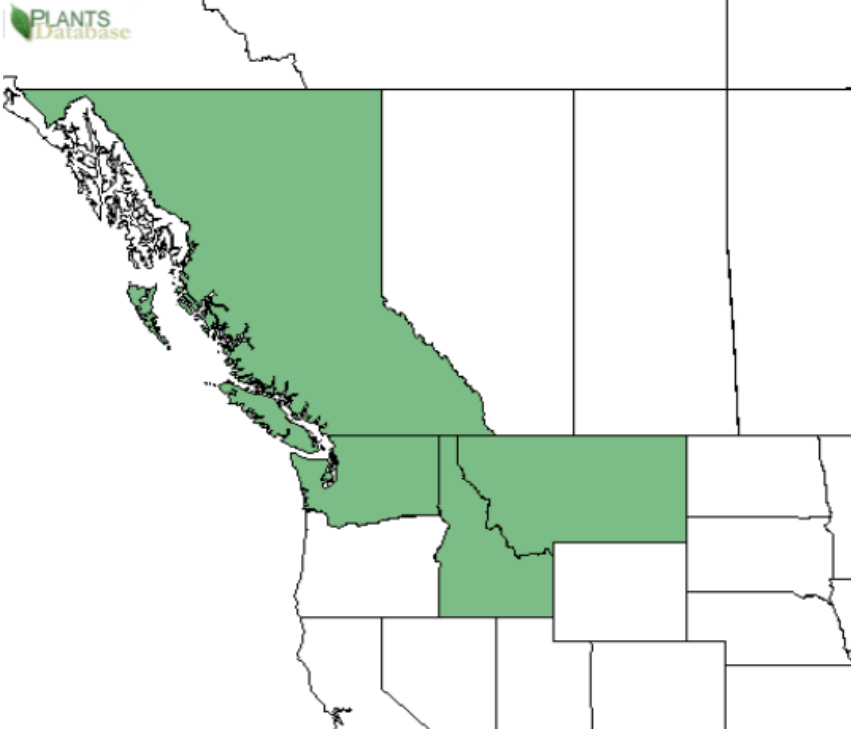
ESRM 412 – Native Plant Production

Protocol URL: <https://courses.washington.edu/esrm412/protocols/ASMIM4.pdf>



(Ernie Buchanan 2016)

TAXONOMY	
Plant Family	
Scientific Name	Fabaceae
Common Name	Pea family
Species Scientific Name	
Scientific Name	<i>Astragalus miser</i> Douglas ex Hook. (The Plant List 2010)
Varieties	<i>Astragalus miser</i> Douglas ex Hook. var. <i>miser</i> (USDA 2020)
Common Synonym(s)	<i>Astragalus strigosus</i> J.M. Coult. & Fisher (USDA 2020)
Common Name(s)	Timber milkvetch, weedy milkvetch

<p>Species Code (as per USDA Plants database)</p>	<p>ASMIM4</p>
<p><b>GENERAL INFORMATION</b></p>	
<p>Geographical range</p>	 <p>(USDA 2020)  <a href="https://plants.usda.gov/core/profile?symbol=ASMIM4">https://plants.usda.gov/core/profile?symbol=ASMIM4</a></p>
<p>Ecological distribution</p>	<p>This plant is found to occur in grasslands, sagebrush steppe, and open forest ecosystems (Montana Field Guide 2020). It generally inhabits slopes of 22% gradient and prefers xeric-mesic soil moisture regimes (Klinkenberg 2020). Despite its known toxicity to cows, this plant is considered to be widely browsed by wildlife native to the areas it occurs (Splitrock Environmental 2013).</p>
<p>Climate and elevation range</p>	<p>Can be found from the steppes to lower alpine zones, at a maximum elevation of 2,520m in cool temperate to cool semiarid climates (Klinkenberg 2020).</p>
<p>Local habitat and abundance</p>	<p>This plant is distributed across the northwestern U.S. in Washington, Idaho and Montana. Its range also reaches up into most of B.C. (USDA 2020). Due to the range of conditions it can inhabit it is considered to be a widespread species (The American Southwest 2020). It can cause acute and chronic toxicity in common range animals such as cattle and sheep (Canadian Biodiversity Information Facility 2014) and is considered a harmful weed by some. It is</p>

	observed as active generally from the second week of May through the end of August (Wildflower search 2020).
Plant strategy type / successional stage	It is known to inhabit a large range of habitats and elevations allowing it to colonize less habitable areas (The American Southwest 2020).
Plant characteristics	This plant is a small perennial herb with a bush-like growth habit. It can grow up to 40 cm tall and has many leaflets (Splitrock Environmental 2013). They often have rhizomes (Klinkenberg 2020). The flowers are likened to those of a pea plant and range from white to light purple. They can spread up to 30 cm and produce seed pods also similar to those of peas. As noted before, this plant is known to be poisonous to range animals, though its effect on native wildlife is unknown (Splitrock Environmental 2020).
<b>PROPAGATION DETAILS</b>	
	This propagation protocol was created using the preferred propagation techniques of a congeneric species of milkvetch: <i>Astragalus canadensis</i> . Please consider that there may be differences in the morphology and physiology of <i>Astragalus miser</i> that may affect propagation success.
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Container (USDA, NRCS, National Plant Data Center 2020)
Stock Type	Seedbed (Jensen 1997)
Time to Grow	4-9 weeks for germination, then overwintered before being planted in the spring or early summer (USDA, NRCS, National Plant Data Center 2020).
Target Specifications	No information found
Propagule Collection Instructions	No information found
Propagule Processing /Propagule Characteristics	Average seeds/lb 266,000 to 275,000 (Jensen 1997).
Pre-Planting Propagule Treatments	Seeds must be sown in a cold frame once ripe. They must be soaked in hot water for 24 hours before sowing (USDA, NRCS, National Plant Data Center 2020). Seeds should be mechanically scarified to break seed coat (Jensen 1997).
Growing Area	Well-draining media is preferred (USDA, NRCS, National Plant Data Center 2020).

Preparation / Annual Practices for Perennial Crops	
Establishment Phase Details	Spring seeding should occur before May 15 and dormant seeding should occur after October 20 (Jensen 1997). Germinate for 4-9 weeks until large enough to transplant, then move to individual pots for their overwintering period inside a greenhouse (USDA, NRCS, National Plant Data Center 2020).
Length of Establishment Phase	4-9 weeks (USDA, NRCS, National Plant Data Center 2020).
Active Growth Phase	Cold weather not tolerated, requires well-drained soil in a sunny area (USDA, NRCS, National Plant Data Center 2020).
Length of Active Growth Phase	No information found
Hardening Phase	No information found
Length of Hardening Phase	No information found
Harvesting, Storage and Shipping	No information found
Length of Storage	No information found
Guidelines for Out-planting / Performance on Typical Sites	Cold weather not tolerated, requires well-drained soil in a sunny area (USDA, NRCS, National Plant Data Center 2020). Plants may be benefitted by a phosphorus or potassium rich fertilizer (Jensen 1997).
Other Comments	Persistence after out-planting can be encouraged by mowing to stop seed production (Jensen 1997). Be careful of planting <i>Astragalus miser</i> in areas where livestock are present as it is very toxic to cattle and sheep (Splitrock Environmental 2013).
<b>INFORMATION SOURCES</b>	
References	" <i>Astragalus miser</i> Douglas ex Hook. timber milk-vetch (timber milkvetch)." Klinkenberg, Brian, 2020. Electronic Atlas of the Flora of British Columbia.

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“Canada Milkvetch (*Astragalus canadensis*): Planting Guide.” Jensen, Nancy, 1997. USDA NRCS, Plant Materials Center. URL: [https://www.nrcs.usda.gov/Internet/FSE\\_PLANTMATERIALS/publications/ndpmcpgcamlk.pdf](https://www.nrcs.usda.gov/Internet/FSE_PLANTMATERIALS/publications/ndpmcpgcamlk.pdf). (accessed on 05/20/20).

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“Timber Milkvetch – *Astragalus miser*.” Montana Field Guides, n.d. URL: <http://fieldguide.mt.gov/speciesDetail.aspx?elcode=PDFAB0F5F0> (accessed on 05/20/20).

“Timber Milk-Vetch.” Splitrock Environmental, 2013. URL: <http://splitrockenvironmental.ca/product/timber-milk-vetch/> (accessed on 05/20/20).

	<p>“timber milk-vetch.” Wildflower Search, n.d. URL: <a href="https://wildflowersearch.org/search?&amp;PlantName=Astragalus+miser">https://wildflowersearch.org/search?&amp;PlantName=Astragalus+miser</a>. (accessed on 05/20/20).</p>
Other Sources Consulted	<p>“Timber Milkvetch (<i>Astragalus miser</i>)” n.d. URL: <a href="https://www.inaturalist.org/taxa/139642-Astragalus-miser">https://www.inaturalist.org/taxa/139642-Astragalus-miser</a></p> <p>“Timber Milkvetch: <i>Astragalus miser</i> Dougl.” Encyclopedia of Life, n.d. URL: <a href="https://eol.org/pages/639297">https://eol.org/pages/639297</a> (accessed on 05/20/20).</p>
Protocol Author	Casey Jones
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