

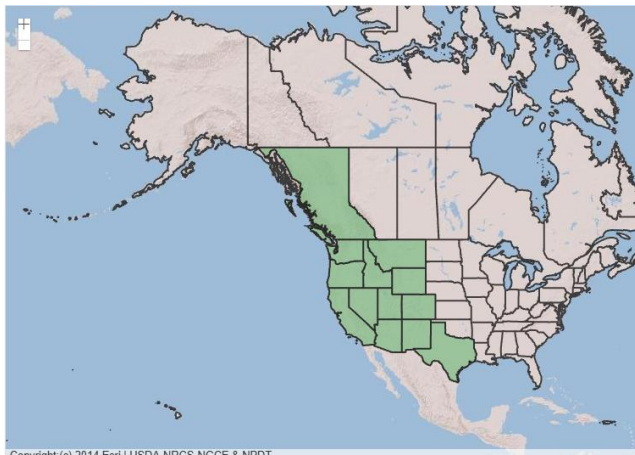
# Plant Propagation Protocol for [Insert Species]

ESRM 412 – Native Plant Production

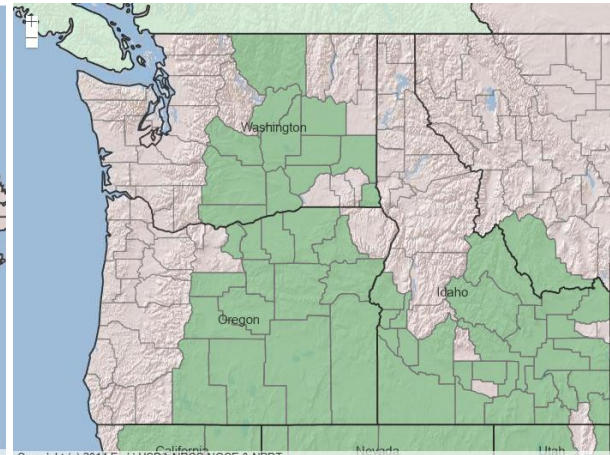
URL: [https://courses.washington.edu/esrm412/protocols/2025/\[ASLE8.pdf\]](https://courses.washington.edu/esrm412/protocols/2025/[ASLE8.pdf])



## North American Distribution



## Pacific Northwest Distribution



Sourced from USDA Plants Database

| <b>TAXONOMY</b>                |   |
|--------------------------------|---|
| <b>Plant Family</b>            |   |
| Scientific Name                | Fabaceae Lindl.   |
| Common Name                    | Pea or legume family  |
| <b>Species Scientific Name</b> |   |
| Scientific Name                | <i>Astragalus lentiginosus</i> Douglas ex Hook.   |
| Varieties                      | There are no listed varieties in the USDA Plants database   |
| Sub-species                    | <p><i>Astragalus lentiginosus</i> Douglas ex Hook. Var. <i>albifolius</i> M.E. Jones</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>ambiguus</i> Barneby</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>antonius</i> Barneby</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>australis</i> Barneby</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>borreganus</i> M. E. Jones</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>chartaceus</i> M.E. Jones</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>coachella</i> Barneby ex Shreve &amp; Wiggins</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>diphysus</i> (A. Gray) M.E. Jones</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>floribundus</i> A. Gray</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>fremontii</i> (A. Gray ex Torr.) S. Watson</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>higginsii</i> S.L. Welsh &amp; Thorne</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>idriensis</i> M.E. Jones</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>ineptus</i> (A. Gray) M.E. Jones</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>kennedyi</i> (Rydb.) Barneby</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>kernensis</i> (Jeps.) Barneby</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>latus</i> (M.E. Jones) M.E. Jones</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>lentiginosus</i></p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>maricopae</i> Barneby</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>micans</i> Barneby</p> |

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|  | <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>nigricalycis</i> M.E. Jones</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>oropedii</i> Barneby</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>palans</i> (M.E. Jones) M.E. Jones</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>piscinensis</i> Barneby</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>pohlii</i> S.L. Welsh &amp; Barneby</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>salinus</i> (Howell) Barneby</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>scorpionis</i> M.E. Jones</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>semotus</i> Jeps.</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>sesquimetralis</i> (Rydb.) Barneby</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>sierrae</i> M.E. Jones</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>stramineus</i> (Rydb.) Barneby</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>trumbullensis</i> S.L. Welsh &amp; N.D. Atwood</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>variabilis</i> Barneby</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>vitreus</i> Barneby</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>wilsonii</i> Barneby</p> <p><i>Astragalus lentiginosus</i> Douglas ex Hook. var. <i>yuccanus</i> M.E. Jones.</p> |
| Cultivar                                   | No listed cultivars   |
| Common Synonym(s)                          | No listed synonyms  |
| Common Name(s)                             | Freckled milkvetch, specklepod milkvetch (3), mottled locoweed (4), freckled locoweed (10), rattle pod, specklepod loco milkvetch (2).  |
| Species Code (as per USDA Plants database) | ASLE8   |
| <b>GENERAL INFORMATION</b>                 |   |
| Geographical range                         | Found in British Columbia, Canada and in the entire western half of the United States. Within the Pacific Northwest, it is found on the east side of the Cascade Mountain range in Washington and Oregon. It can also be found in southern Idaho. See distribution maps above (8).  |
| Ecological distribution                    | Sagebrush Scrub, Shadscale Scrub, Creosote Bush Scrub, Alkali Sink, Yellow Pine Forest, Subalpine Forest, Foothill Woodland,  |

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|  | Valley Grassland, Joshua Tree Woodland (2). Open areas, desert flats to subalpine slopes (1).  |
| Climate and elevation range                    | Ideal temperature range: 47-72 °F (2) temperature minimum of -28 °, but requires a minimum of 100 frost free days (8)<br>Elevation range: 0 - 11,450ft (2)   |
| Local habitat and abundance                    | Typically found in open habitats, abundance varies. Associated with several butterfly species as it acts as a host plant (2).  |
| Plant strategy type / successional stage       | High drought tolerance and medium fire tolerance. Medium salinity tolerance, shade intolerance (8).  |
| Plant characteristics                          | A highly variable forb/herb/subshrub species, plants can present with annual, biannual and perennial life cycles. Sources most often list them as perennial. Their growth can be erect or low. Taproot is stout. Leaves can be up to 10cm long with long petioles and many leaflets that can range in size from 5-17 mm long and are broadly obovate. A continuation of the high variance, they can be suborbicular or oblanceolate, obtuse or retuse. Flowers range from ascending to spreading and occur in several colors with white, yellow, pink, and purple being noted in sources. Freckled pods are sessile and range from scarcely inflated to strongly inflated. The inflated beak is rounded at the base with two chambers, and tapers at the beak that strongly curves over seed pod. The seeds are small and brown (4, 6, 7, 8) |
| <b>PROPAGATION DETAILS: FROM SEED</b>          |  |
| Ecotype  | Protocol not experimentally derived  |
| Propagation Goal                               | Plants   |
| Propagation Method                             | Seed   |
| Product Type                                   | Plug   |
| Stock Type                                     | SC-10, Ray Leach Super Cell (5)  |
| Time to Grow                                   | ~4 months (5)  |
| Target Specifications                          | Plant with tight root plug in container (5)  |
| Propagule Collection Instructions              | Collect seeds during the summer when the pods begin to split open and the seed is hard and black (5, 8).   |
| Propagule Processing/Propagule Characteristics | 140,000 seeds per pound (8). Seed longevity was not found.   |
| Pre-Planting Propagule Treatments              | Cleaning: Small amounts of pods can be crushed by hand to free the seed, then cleaned with an air column separator. Larger amounts could be threshed with a hammermill, then cleaned with air screen equipment (5).<br>Dormancy treatments: Seeds have physical dormancy due to hard seed cover and chemical dormancy due to a water-leachable inhibitor (9). Scarification is recommended.  |

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|   | Mechanical, hot water or chemical scarification are all viable options. Mechanical may be the most effective (5).   |
| Growing Area Preparation / Annual Practices for Perennial Crops | Considering inoculating seeds with proper Rhizobium species prior to planting. Sow seeds in January in a greenhouse in SC-10 Super Cells filled with Sunshine #4 medium, cover lightly. Top with a thin layer of pea gravel to prevent seeds from floating during deep watering (5).  |
| Establishment Phase Details                                     | Keep medium moist (5)   |
| Length of Establishment Phase                                   | ~3 weeks (5)  |
| Active Growth Phase   | Water deeply every other day and fertilize once per week with a complete, water-soluble nutrient (5).   |
| Length of Active Growth Phase                                   | ~3 months (5)   |
| Hardening Phase   | Move plants from greenhouse to cold frame in April. If conditions are cooler, continue watering every other day. If conditions are hotter and drier, water every day (5).   |
| Length of Hardening Phase                                       | ~2 weeks (5)  |
| Harvesting, Storage and Shipping                                | No information found  |
| Length of Storage   | No information found  |
| Guidelines for Outplanting / Performance on Typical Sites       | Seedlings tend to have low vigor (8), ensuring plugs have established roots is critical. Outplant in early spring (5). Species bloom in late spring (2, 8).   |
| Other Comments  | Species specific protocol information was not found. USDA plant database states that this species is not currently produced in nursery. A RNGR protocol for a similar species within <i>Astragalus</i> (reference number 5) was used to formulate protocol suggestions. In consideration of this, species specific protocol should be experimentally derived.   |
| <b>INFORMATION SOURCES</b>                                      |   |
| References  | <ol style="list-style-type: none"> <li>Burke Museum (n.d.) <i>Astragalus lentiginosus</i> Burke Herbarium Image Collection. <a href="#">Astragalus lentiginosus - Burke Herbarium Image Collection</a></li> <li>Califlora (n.d.). <i>Astragalus lentiginosus</i>. <a href="https://www.calflora.org/app/taxon?crn=857">https://www.calflora.org/app/taxon?crn=857</a></li> <li>ITIS (n.d.) <i>Astragalus lentiginosus</i> Douglas ex Hook. <a href="#">ITIS - Report: Astragalus lentiginosus</a></li> <li>Niehaus, T. F. (1974). <i>Sierra Wildflowers Mt. Lassen to Kern Canyon</i> (p. 150). University of California Press.</li> <li>Skinner, D. (2005). <i>Astragalus (arrectus)</i>. RNGR. <a href="https://rngr.net/renderNPNProtocolDetails?selectedProtocolIds=fabaceae-astragalus-2917">https://rngr.net/renderNPNProtocolDetails?selectedProtocolIds=fabaceae-astragalus-2917</a></li> </ol> |

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|                         | <p>6. Taylor, T. M. C. (1976). <i>The Pea Family of British Columbia</i> (p. 37). British Columbia Provincial Museum.</p> <p>7. University of California, Berkeley (n.d.) <i>Astragalus lentiginosus</i>. Jepson Herbarium <a href="#">Astragalus lentiginosus</a></p> <p>8. USDA NRCS (n.d.) <i>Astragalus lentiginosus</i> Douglas ex Hook. USDA Plant Database. <a href="#">USDA Plants Database Plant Profile General</a></p> <p>9. Ziemkiewicz, P (1975) "Factors Influencing Germination and Seedling Survival of Several Varieties of <i>Astragalus lentiginosus</i> Dougl." <i>All Graduate Theses and Dissertations, Spring 1920 to Summer 2023</i>. 6291. <a href="https://doi.org/10.26076/98a3-e850">https://doi.org/10.26076/98a3-e850</a></p> |
| Other Sources Consulted | <p>10. Ritter, M. (2018). <i>California Plants A Guide to Our Iconic Flora</i> (p. 19). Pacific Street Publishing.</p>  |
| Protocol Author         | Kaitlyn Kusske  |
| Date Protocol Created   | 05/25/2025  |