

Jessica Taylor
ESRM 412 – Native Plant Production
Protocol for *Symphyotrichum jessicae*, Jessica's Aster



Image by John Gamon

http://biology.burke.washington.edu/herbarium/imagecollection/wtu8500-8999/lg/wtu008884_lg.jpg

TAXONOMY	
Family Names	
Family Scientific Name:	Asteraceae
Family Common Name:	Sunflower
Scientific Names	
Genus:	<i>Symphyotrichum</i>
Species:	<i>jessicae</i>
Species Authority:	Piper, Nesom
Variety:	N/A
Sub-species:	N/A
Cultivar:	N/A
Authority for Variety/Sub-species:	Piper, Nesom

Common Synonym(s)	
Genus:	<i>Symphyotrichum</i>
Species:	<i>jessicae</i>
Species Authority:	Piper, Nesom
Variety:	N/A
Sub-species:	N/A
Cultivar:	N/A
Authority for Variety/Sub-species:	N/A
Common Name(s):	Jessica's Aster, Palouse Aster, Pullman Aster
Species Code (as per USDA Plants database):	SYJE
GENERAL INFORMATION	
General Distribution:	Open habitats usually on benches above streams in extreme eastern Washington and northern Idaho.
Climate and elevation range	WA-DNR states the plant occur 2500-2800 feet in elevation.
Local habitat and abundance; may include commonly associated species	<p>According to the WA-DNR, the species occurs in “Palouse grasslands and prairie/forest transition zones, often in association with small drainages, but above water level on dry ground. It occurs primarily in the following habitat types (Daubenmire 1970): ponderosa pine/snowberry, Idaho fescue/snowberry, black hawthorn/snowberry, Idaho fescue/Nootka rosa, and Douglas fir/ninebark. Other associated species include bluebunch wheatgrass, balsamroot, and yarrow.”</p> <p>Washington herbarium specimens have been found on brushy hillsides, along railroads, with <i>Crataegus douglasii</i> and <i>Rosa woodsii</i>. Specimens collected from Idaho were found in a dry hillside along river with seeps, <i>Salix</i>, <i>Alnus</i>, <i>Cornus</i> along river, <i>Pinus ponderosa</i>, <i>Pinus contorta</i>, <i>Pseudotsuga</i>, <i>Spiraea</i> along hillsides, soil sandy-rocky granite.</p>
Plant strategy type / successional stage.	Plants are rhizomatous. The rhizomes can spread out up to 12 feet away from original plant .
PROPAGATION DETAILS	
Ecotype:	Palouse River
Propagation Goal:	Plants
Propagation Method:	Seed
Product Type:	Container (plug)
Stock Type:	N/A
Time to Grow:	4 months
Target Specifications:	Tight root plug in container

Propagule Collection:	Fruit is an achene. Seed ripens in September and October. It is collected when the pappus begins to expand. Seed is brown in color and wind disseminated, so must be collected before it blows away. Seed maturity is indeterminant. Seed can be collected using a vacuum cleaner. This removes only mature seed, leaving immature seed to ripen, and reduces the amount of trash which subsequently must be cleaned from the seed. Harvested seed is stored in paper bags at room temperature until cleaned.
Propagule Processing/Propagule Characteristics:	The seed density is 542,584 seeds/lb for the Palouse ecotype. Seeds are cleaned by rubbing over a 10 mesh screen to remove the pappus, then using an air column separator. Larger amounts are run through a hammermill, then cleaned with an air screen machine. Sterile rice hulls can be added to the hammermill to facilitate removal of the pappus. The rice hulls are then removed in the cleaning process. Clean seed are stored in controlled conditions at 40 degrees Fahrenheit and 40% relative humidity.
Pre-Planting Propagule Treatments:	Germination without pretreatment is high. Trials at the PMC comparing untreated seed with cold, moist stratified seed show no benefit from stratification.
Growing Area Preparation / Annual Practices for Perennial Crops:	In January seed is sown in the greenhouse in 10 cu. in. Ray Leach Super cell conetainers filled with Sunshine #4 and covered lightly. Head space of ¼ to ½ inch is maintained in conetainers to allow deep watering. A thin layer of pea gravel is applied to prevent seeds from floating. Conetainers are watered deeply.
Establishment Phase:	Conetainers are kept moist until germination occurs. Seeds usually start germinating in 8-10 days and germination is complete in 18 days.
Length of Establishment Phase:	3 weeks.
Active Growth Phase:	Plants are watered deeply every other day and fertilized once a week with a water soluble, complete fertilizer containing micro nutrients.
Length of Active Growth Phase:	3 months.
Hardening Phase:	Plants are moved to the cold frame in late March or early April, depending on weather.
Length of Hardening Phase:	2-4 weeks.
Harvesting, Storage and Shipping:	N/A
Length of Storage:	N/A
Guidelines for Outplanting /	Transplanting is done in early May by using an electric

Performance on Typical Sites:	drill and portable generator to drill 1.5 inch diameter holes at the planting site. Plants set out into a weed free bed without competition from other vegetation had 100% survival after 4 years.
Other Comments:	<p>The full name of the species according to both the native plant network and the USDA is <i>Symphyotrichum jessicae</i> (Piper) Nesom. It is an endangered species and WTU herbarium specimens have the exact location of where the specimen is collected omitted as to protect the species from over-collection and possible extinction. All information specific to the proration of Jessica's Aster refer to Skinner's propagation protocol.</p> <p>Skinner comments that no insect or disease problems have been noted. Plants are strongly rhizomatous. In seed increase plantings, new plants from rhizomes may appear 6-12 feet from the original planting. Plants can be propagated by division or from sections of the rhizome. This method should only be used for plants growing in cultivation. Jessica's aster is a rare species which should not be collected, either by seed or vegetative material, from plants growing in the wild.</p>

INFORMATION SOURCES

References:	<p>Skinner, David M. 2005. Propagation protocol for production of container <i>Symphyotrichum jessicae</i> (Piper) Nesom plants; Pullman Plant Materials Center, Pullman, Washington. In: Native Plant Network. URL: http://www.nativeplantnetwork.org (accessed 25 April 2007). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery.</p> <p>Hitchcock, C. Leo, and Arthur Cronquist. 1973. Flora of the Pacific Northwest. University of Washington Press. Seattle, WA. 343 pp.</p> <p>USDA, NRCS. 2004. The PLANTS Database, Version 3.5 (http://plants.usda.gov). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.</p> <p>Knoke, Don. Vascular Plants-Asteraceae-Symphyotrichum. <i>Symphyotrichum jessicae</i>, <i>Jessica's Aster</i>, <i>Palouse Aster</i>. URL: http://biology.burke.washington.edu/herbarium/imagecollection/taxon.php?ID=2384</p>
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	<p>WTU Herbarium Specimens. URL: http://biology.burke.washington.edu/herbarium/imagecollection.php</p> <p>Center for Urban Horticulture- Rare Plant Care and Conservation. URL: http://courses.washington.edu/rarecare/InteractivePage.htm</p> <p>WA-Department of Natural Resources. Selected Rare Vascular Plants of Washington-<i>Aster jessicae</i>. URL: http://www.dnr.wa.gov/nhp/refdesk/fguide/htm/fsp_asje.htm</p>
Other Sources Consulted (but that contained no pertinent information):	Checked all possible web sources and databases, but due to the rarity of species and its endangered status, there is very little information available.
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