

Plant Propagation Protocol for *Symphyotrichum spathulatum*
 ESRM 412 – Native Plant Production
 Spring 2008


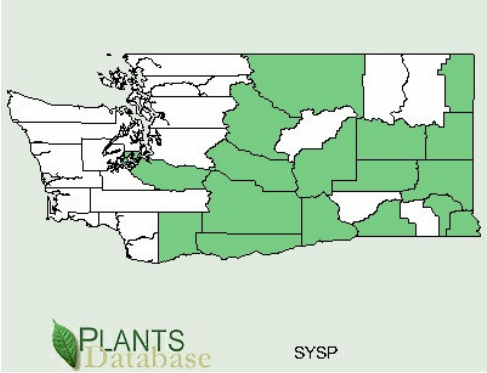


Photo taken by Richard Old (7)

TAXONOMY	
Family Names	
Family Scientific Name:	<i>Asteraceae</i> (2)
Family Common Name:	Aster family (2)
Scientific Names	
Genus:	<i>Symphyotrichum</i> (2)
Species:	<i>spathulatum</i> (2)
Species Authority:	(Lindl.) G.L. Nesom (2)
Variety:	
Sub-species:	
Cultivar:	
Authority for Variety/Sub-species:	
Common Synonym(s):	<ul style="list-style-type: none"> • <i>Aster occidentalis</i> (Nutt.) Torr. & A. Gray <i>Symphyotrichum spathulatum</i> var. <i>spathulatum</i> • <i>Aster occidentalis</i> var. <i>intermedius</i> A. Gray <i>Symphyotrichum spathulatum</i> var. <i>intermedium</i> • <i>Aster spathulatus</i> Lindl. <i>Symphyotrichum spathulatum</i> var. <i>spathulatum</i> • <i>Aster spathulatus</i> var. <i>intermedius</i> (A. Gray) Cronquist <i>Symphyotrichum spathulatum</i> var. <i>intermedium</i> • <i>Aster spathulatus</i> var. <i>spathulatus</i> <i>Symphyotrichum spathulatum</i> var. <i>spathulatum</i>

	<ul style="list-style-type: none"> • <i>Tripolium occidentale</i> Nutt. <i>Symphotrichum spathulatum</i> var. <i>spathulatum</i> (1)
Common Name(s):	Western Mountain Aster (2)
Species Code (as per USDA Plants database):	SYSP (2)

GENERAL INFORMATION

Geographical range:	 (2)  (3)
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Ecological distribution:	Meadows and forest openings. (4)
Climate and elevation range	Moderate to mid-elevations in the mountains. (4)
Local habitat and abundance; may include commonly associated species	Usually found in areas which are open and moist, such as north hillsides on the Palouse and in open forested areas. (6)
Plant strategy type /	No information found on this topic.

successional stage	
Plant characteristics:	Forb/herb
PROPAGATION DETAILS	
Ecotype:	Paradise Creek drainage near Pullman, WA (6)
Propagation Goal:	Plants (6)
Propagation Method:	Seed (6)
Product Type:	Container (plug) (6)
Stock Type:	172 ml containers
Time to Grow:	4 months (6)
Target Specifications:	Tight root plug in container. (6)
Propagule Collection:	Seed ripens in mid to late September. It is collected when the pappus expands. Seed is wind disseminated, so must be collected before it blows away. Seed maturity is indeterminate. Seed can be collected using a vacuum cleaner. This only removes mature seed, leaving immature seed to ripen. (6)
Propagule Processing/ Propagule Characteristics:	Harvested seed is stored in paper bags at room temperature until cleaned. Plants in seed increase plantings can be cut and dried under cover on tarps, but must be protected from wind. Whole plants should never be collected from the wild. Small amounts of seed are rubbed over a 10 mesh screen to remove the pappus, then cleaned with an air column separator. Cleaned seed is stored at 40 degrees F. and 40% relative humidity. (6)
Pre-Planting Propagule Treatments:	None
Growing Area Preparation / Annual Practices for Perennial Crops:	In January seed is sown in the greenhouse. Head space of ¼ to ½ inch is maintained in containers to allow deep watering. A thin layer of pea gravel is applied to prevent seeds from floating. Containers are watered deeply. (6)
Establishment Phase:	Medium is kept moist until germination occurs. Germination usually occurs in 8-10 days and is complete in 14-18 days. (6)
Length of Establishment Phase:	Seed germinates in two to three weeks at 65 to 70 F. (5)
Active Growth Phase:	Plants are watered deeply every other day and fertilized once per week with a complete, water soluble fertilizer containing micronutrients. (6)
Length of Active Growth Phase:	2 months (6)
Hardening Phase:	Plants are moved to a cold frame in late March or early April, depending on weather conditions. (6)
Length of Hardening Phase:	4 weeks (6)
Harvesting, Storage	Could not find any information on this topic.

and Shipping (of seedlings):	
Length of Storage (of seedlings, between nursery and outplanting):	Could not find any information on this topic.
Guidelines for Outplanting / Performance on Typical Sites:	Transplanting is done in early May by using an electric drill and portable generator to drill 1.5 inch diameter holes at the planting site. Survival in seed increase plantings without competing vegetation approaches 100%. Transplanting into sites with existing vegetation reduces survival and vigor depending on weather conditions following planting. Flowering and seed production occurs the same year as transplanting. (6)
Other Comments:	Plants produce prodigious amounts of seed and reseed themselves readily. Plants continue to produce good seed crops in increase plantings for at least 4 years. Plants are mildly rhizomatous and probably can be propagated by division. This method should only be used for plants growing in cultivation. Plants should not be dug up from stands in the wild. (6)
INFORMATION SOURCES	
References (full citations):	<p>(1) http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?406995</p> <p>(2) http://plants.usda.gov/java/profile?symbol=SYSP</p> <p>(3) http://plants.usda.gov/java/county?state_name=Washington&statefips=53&symbol=SYSP</p> <p>(4) http://biology.burke.washington.edu/herbarium/imagecollection.php?Genus=Symphyotrichum&Species=spathulatum</p> <p>(5) Hartmann and Kester., <u>Plant Propagation principles and practices</u>. Courier Westford 2002.</p> <p>(6) Skinner, David M. 2005. Propagation protocol for production of container <i>Symphyotrichum spathulatum</i> (Lindl.) Nesom (Gray) Nesom plants; USDA NRCS - Pullman Plant Materials Center, Pullman, Washington. In: Native Plant Network. URL: http://www.nativeplantnetwork.org (accessed 6 May 2008). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery.</p> <p>(7) http://biology.burke.washington.edu/herbarium/imagecollection.php?Genus=Symphyotrichum&Species=spathulatum</p>
Other Sources Consulted (but that contained no pertinent information) (full citations):	<p>(8) Toogood, Alan. <u>American Horticultural Society, Plant Propagation</u>. DK publishing 1999, New York</p> <p>(9) Phillips, Harry R. <u>Growing and Propagating Wild Flowers</u>. The University of North Carolina Press 1985.</p> <p>(10) Arbbury, Jim. Bird, Richard. Honours, Mike. Salmon, Mike. <u>The Complete Book of Plant Propagation</u>. Reed International Books Limited 1997.</p> <p>(11) Browse, Philip M. <u>Plant Propagation: seeds, roots, bulbs and</u></p>

	<p><u>corms, layerings, stem cuttings, leaf cuttings budding and grafting.</u> Mitchell Beazley Publishers Limited 1979. (12) Adriance and Brison. <u>Propagation of Horticulture Plants.</u> McGraw-Hill Book Company New York 1939.</p>
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Date Protocol Created or Updated (MM/DD/YY):	05/12/08