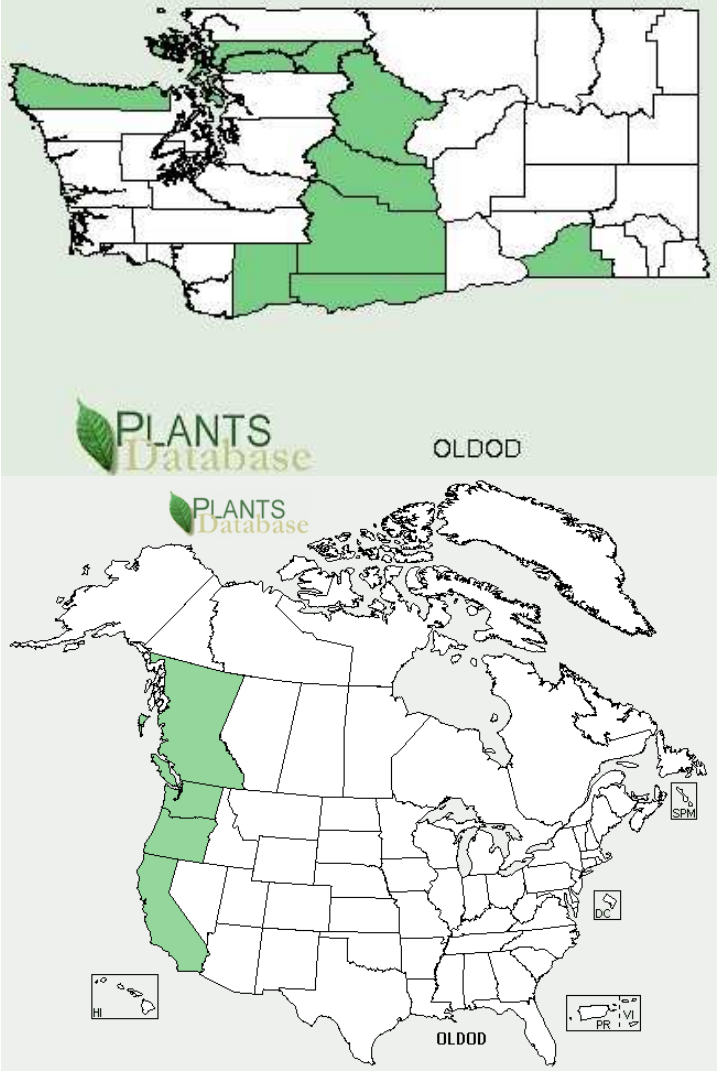


Plant Propagation Protocol for *Olsynium douglasii*
 ESRM 412 – Native Plant Production
 Spring 2008



TAXONOMY	
Family Names	
Family Scientific Name:	<i>Iridaceae</i>
Family Common Name:	Iris
Scientific Names	
Genus:	<i>Olsynium</i>
Species:	<i>Olsynium douglasii</i>
Species Authority:	(A. Dietr.) Bickn.
Variety:	<i>inflatum</i>
Sub-species:	
Cultivar:	
Authority for Variety/Sub-species:	(Suksdorf) Cholewa & Douglass M. Hend.
Common Synonym(s)	<i>Sisyrinchium inflatum</i> (Suksdorf) St. John
Common Name(s):	grass widow
Species Code:	OLDOD
GENERAL INFORMATION	

<p>Geographical range:</p>	
<p>Ecological distribution:</p>	<p>Native to open, vernaly moist places from shrub-steppe to open ponderosa pine forests east of the Cascade Mountains of southern British Columbia, Washington, Oregon, extending into Idaho, Utah, and northern Nevada (Skinner 2008). Coastal bluffs, prairies, open rocky areas, oak and ponderosa pine woodlands, sagebrush and juniper desert, where moist in early spring (Burke Museum of Natural History and Culture 2006).</p>
<p>Climate and elevation range:</p>	<p>Between 3000 and 6000 feet (Calflora 2004).</p>
<p>Local habitat:</p>	<p>Sagebrush Scrub, Northern Juniper Woodland, Northern Oak Woodland, Foothill Woodland, Yellow Pine Forest (Califlora 2004).</p>

Plant characteristics:	Not invasive, perennial, forb/herb, no toxicity, moderate growth rate, not fire resistant.
PROPAGATION DETAILS	
Ecotype:	North of Pullman, Washington (Skinner 2008).
Propagation Goal:	Plants (Skinner 2008).
Propagation Method:	Seed (Skinner 2008).
Product Type:	Container (plug) (Skinner 2008).
Stock Type:	10 cu. In (Skinner 2008).
Time to Grow (from seeding until plants are ready to be outplanted):	2 Years (Skinner 2008).
Target Specifications:	Tight root plug in container (Skinner 2008).
Propagule Collection:	Fruit is a capsule. Seed is reddish brown in color. Seed is collected when the capsules begin to split in July and is stored in paper bags or envelopes at room temperature until cleaned (Skinner 2008).
Propagule Processing/Propagule Characteristics:	Small amounts are rubbed to free the seed, then cleaned with an air column separator. Larger amounts can be threshed with a hammermill, then cleaned with air screen equipment. Clean seed is stored in controlled conditions at 40 degrees Fahrenheit and 40% relative humidity (Skinner 2008).
Pre-Planting Propagule Treatments (cleaning, dormancy treatments, etc):	Extended cold, moist stratification is needed. Cool spring temperatures may also be necessary. For other species of <i>Sisyrinchium</i> , seed germination without pretreatment is low (Kruckeberg 1996). Germination of untreated seed of <i>S. angustifolium</i> in the greenhouse is fair (Link 1993). For a Palouse ecotype of <i>S. inflatum</i> , Nauman (2002) found 90 to 120 days of cold moist stratification resulted in high germination. She also reported that seed germinates in cold temperatures during stratification. In trials at the Pullman Plant Materials Center, no germination occurred without stratification and no seed germinated after 30 days cold, moist stratification. High germination was obtained from seeds sown in containers in November and left outside under cool, fluctuating spring temperatures. Germination occurred at cool temperatures. Some seed will germinate after a second winter outdoors (Skinner 2008).
Growing Area Preparation / Annual Practices for Perennial Crops:	In late October or early November seed is sown in 10 cu. in. Ray Leach Super cell conetainers filled with Sunshine #4 and covered lightly. A thin layer of coarse grit is applied to the top of the planting soil to prevent seeds from floating during watering. Conetainers are watered deeply and placed outside (Skinner 2008).

Establishment Phase (from seeding to germination):	Containers remain outside. They are watered only during dry spells. Germination will begin as daytime temperatures warm in March, and may occur over 2-4 weeks (Skinner 2008).
Length of Establishment Phase:	2-4 weeks (Skinner 2008).
Active Growth Phase (from germination until plants are no longer actively growing):	Plants are watered as needed while outside and fertilized once a week with a water soluble, complete fertilizer. They are moved to the lath house in early May. Plants will not grow beyond the 2 true leaf stage the first season. They will often senesce in the early to mid summer. Senescent plants are given only enough water to prevent the medium from drying completely. Plants are grown in containers for a second season in the lath house, then transplanted to the field in late fall while dormant (Skinner 2008).
Length of Active Growth Phase:	2 seasons (Skinner 2008).
Hardening Phase:	Since the plants are grown outside, additional hardening is not needed (Skinner 2008).
Length of Hardening Phase:	N/A
Harvesting, Storage and Shipping (of seedlings):	Plants are stored in the lath house over winter. They should be afforded some protection from extreme cold temperatures. Mulch or foam sheets provide sufficient protection. The protection should be removed in late winter or early spring as temperatures begin to rise (Skinner 2008).
Length of Storage:	No information seems to exist yet.
Guidelines for Outplanting / Performance on Typical Sites:	Transplanting is done in late October 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 averages 90%. Transplanting into sites with existing vegetation may reduce survival and vigor depending on weather conditions following planting. A few plants will flower the year following outplanting, but most require 2-3 years to produce seed. Plants will go dormant during the warm parts of the summer. Because the plants begin growing early in the spring, late fall outplanting is preferred where soils are generally too muddy in February and early March. However, the tapered plug from the container has a tendency to frost heave and leave the upper part of the plug exposed. Fall transplants should be checked in early spring and exposure of the plug corrected (Skinner 2008).
Other Comments:	No insect or disease problems have been noted. Plants should not be dug up from stands in the wild (Skinner

2008).

INFORMATION SOURCES

References (full citations):

- Burke Museum of Natural History and Culture. "Olsynium douglasii Douglas' grass-widow, purple-eyed grass". 2006. <http://biology.burke.washington.edu/herbarium/imagecollection.php?Genus=Olsynium&Species=douglasii> . Accessed April 25, 2008
- Calflora. "Sisyrinchium douglasii A. Dietr. var. douglasii". 2008. http://www.calflora.org/cgi-bin/species_query.cgi?where-calrecnum=7634 . Accessed April 26, 2008.
- Kruckeberg, Arthur R. 1996. Gardening with Native Plants of the Pacific Northwest. 2nd ed. University of Washington Press. Seattle, WA. 282 pp.
- Link, Ellen (ed.). 1993. Native Plant Propagation Techniques for National Parks Interim Guide. USDA SCS Rose Lake Plant Materials Center and USDI National Park Service. East Lansing, Michigan. 240 pp.
- Nauman, C. 2002. Germination of 12 Palouse Prairie forbs after stratification under light and dark treatments. M.S. Thesis, University of Idaho, Moscow ID.
- Skinner, David M. 2008. Propagation protocol for production of container Olsynium douglasii (A. Dietr.) Bickn. var. inflatum (Suksdorf) Cholewa & Douglass M. Hend. plants (10 cu. in.); USDA NRCS - Pullman Plant Materials Center, Pullman, Washington. In: Native Plant Network. http://www.nativeplantnetwork.org/network/view.asp?protocol_id=3491 . Accessed 29, April 2008).
- United States Department of Agriculture. "Olsynium douglasii (A. Dietr.) E.P. Bicknell var. douglasii Douglas' grasswidow". <http://plants.usda.gov/java/profile?symbol=OLDOD> . 2008. Accessed April 24, 2008.

<p>Other Sources Consulted (but that contained no pertinent information) (full citations):</p>	<p>McGary, Mary Jane. McGary, Jane. "Bulbs of North America". 2001, Timber Press. 308 pp.</p> <p>Slichter, Paul. "Satin-flower/ Grass Widow Olsynium douglasii". http://ghs.gresham.k12.or.us/science/ps/nature/gorge/3petal/iris/grasswidow.htm . Accessed April 24, 2008.</p> <p>Washington Native Plant Society. "Olsynium douglasii (Sisyrinchium)". 2002. http://www.wnps.org/plants/olsynium_douglasii.html . Accessed April 25, 2008</p>
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<p>Date Protocol Created or Updated (MM/DD/YY):</p>	<p>04/25/08</p>

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