

Plant Propagation Protocol for *Orthocarpus luteus*

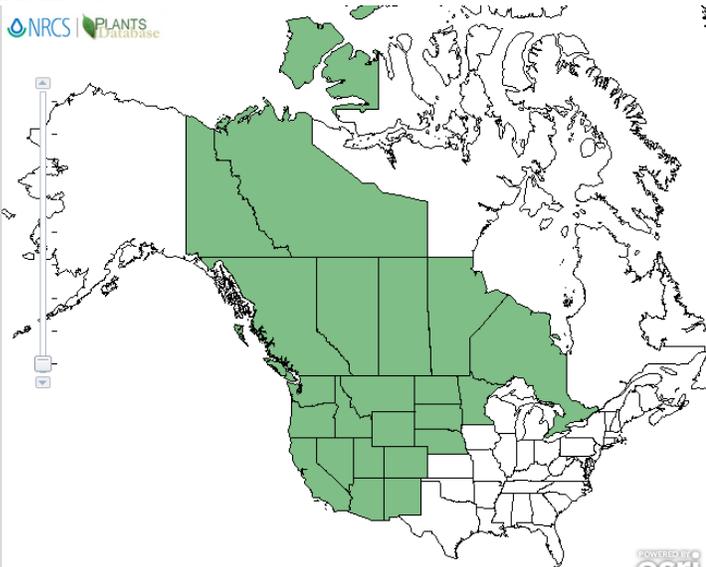
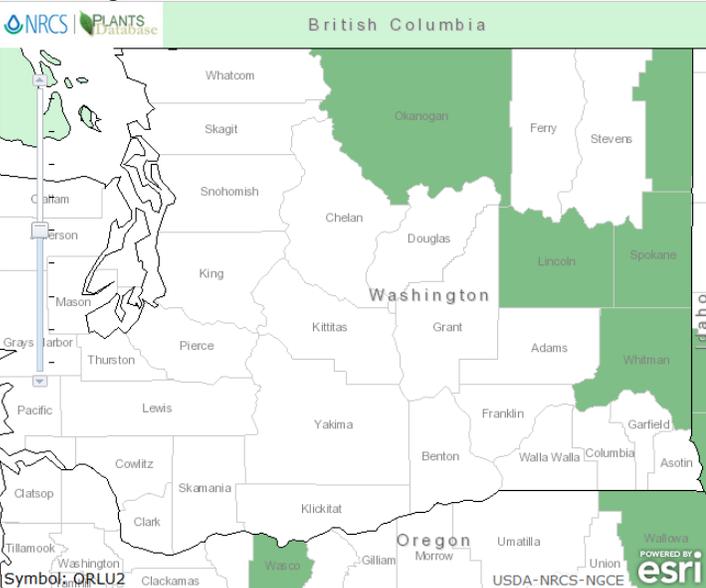
ESRM 412 – Native Plant Production

Protocol URL: <https://courses.washington.edu/esrm412/protocols/ORLU2.pdf>



Photo by Bransford, W.D. and Dolphia

TAXONOMY	
Plant Family	
Scientific Name	Orobanchaceae
Common Name	Broomrapes
Species Scientific Name	
Scientific	<i>Orthocarpus luteus</i> Nuttall
Varieties	N/A
Sub-species	N/A
Cultivar	N/A
Common Synonym(s)	N/A
Common Name(s)	Yellow Owl's Clover, Golden-tongue owl-clover, yellow orthocarp

Species Code (as per USDA Plants database)	ORLU2
GENERAL INFORMATION	
Geographical range	<p>British Columbia to southeastern California, mostly east of the Cascade Mountains and the Sierra Nevada; east to New Mexico, Nebraska, Minnesota, and Manitoba⁹:</p>  <p>Symbol: ORLU2</p> <p>USDA-NRCS-NGCE </p> <p>Washintgon state:</p>  <p>Symbol: ORLU2</p> <p>USDA-NRCS-NGCE </p>
Ecological distribution	Plateau, grassland, meadow, open forest, and mountain habitat. Rarely found in wetlands
Climate and elevation range	Low ground, from the plains to moderate elevations in the mountains 1160 to 2600 meters elevation ²

	Grows from the sagebrush belt p to the spruce-fir belt ¹ Zones 6a to 9a
Local habitat and abundance	Abundant locally, sunny dry locations, dry soil, sand/loam Some commonly associated species ⁷ : <i>Carex douglasii</i> (Douglas sedge) <i>Poa secunda ssp. Secunda</i> (Sandberg's bluegrass) <i>Poa secunda ssp. Juncifolia</i> (Rush blue grass) <i>Balsamorhiza sagittata</i> (Arrow leaved balsamroot) <i>Purshia tridentata var. tridentate</i> (Antelope bitterbrush) <i>Lupinus argenteus var. heteranthus</i> (Silvery lupine) <i>Penstemon speciosus</i> (Showy penstemon) <i>Achillea millefolium</i> (Yarrow)
Plant strategy type / successional stage	High drought tolerance ³
Plant characteristics	Forb, herbaceous, annual, up to 1.5ft mature height ¹¹ Semi-parasitic Stems erect, herbage hairy, leaves alternate and linear-lance shaped to narrow, entire to 3 lobed ¹ Flowers: in bracted end spikes, yellow corolla, strongly 2-lipped, 4 stamens in 2 pairs with dissimilar anthers ¹ Tubular calyx ¹ Fruit a capsule with many seeds Blooms June-August ⁴
PROPAGATION DETAILS	
Ecotype	Colorado, MPCG (98-028s, 98-045s), Hollowell (98-086s) ⁸
Propagation	Seeds ⁸
Propagation Method	Seed ^{8, 10}
Product Type	Propagules (seeds, cuttings, poles, etc) ⁸
Stock Type	
Time to Grow	
Target Specifications	
Propagule Collection Instructions	
Propagule Processing/Propagule Characteristics	8571 seeds/g ⁵ Seeds stored in the greenhouse. ⁸
Pre-Planting Propagule Treatments	Inflorescences crushed and sieved. Seeds are very small, and may be mixed with a large quantity of miscellaneous plant material. ⁸ 30 day cold/moist treatment ⁸
Growing Area Preparation / Annual Practices for Perennial Crops	Greenhouse, 65-70°F day/55°F night. Growing media: Fafard Growing Mix 2. ⁸
Establishment Phase Details	Sowing/planting technique: Sown in 4x8, covered lightly. Germination may occurs over several days ⁸
Length of Establishment Phase	14 days (no cold treatment), 7 days (with cold

	treatment) ⁸
Active Growth Phase	Rapid ¹⁰
Length of Active Growth Phase	Active growth period from spring to early summer ¹⁰ 1 month from germination to potting ⁸
Hardening Phase	
Length of Hardening Phase	
Harvesting, Storage and Shipping	
Length of Storage	
Guidelines for Outplanting / Performance on Typical Sites	
Other Comments	

INFORMATION SOURCES

References	<p>¹Dayton, William A., T. Lommasson, and Barry C. Park. <i>Range Plant Handbook</i>. Washington: U.S. Govt. Print. Off., 1937. Print.</p> <p>²"Calflora: Orthocarpus Luteus." <i>Calflora</i>. 2016. Web. 21 Apr. 2016.</p> <p>³"Information for Orthocarpus Luteus." <i>Cannon Valley Nursery</i>. Web. 20 Apr. 2016.</p> <p>⁴Giblin, David. "Orthocarpus Luteus." <i>WTU Herbarium Image Collection - Burke Museum</i>. 2016. Web. 21 Apr. 2016.</p> <p>⁵Nemberg, Dean J. "Landscape Prairie Restoration: A Mixed-Grass Prairie Perspective." <i>Methods</i> (1993): 1994b.</p> <p>⁶"Plants Profile for Orthocarpus Luteus (yellow Owl's-clover)." <i>USDA Natural Resources Conservation Service Plants Database</i>. Web. 13 Apr. 2016.</p> <p>⁷"Plants That Grow with Orthocarpus Luteus - Yellow Owl's Clover." <i>CNPLX: California Native Plant Link Exchange</i>. Web. 24 Apr. 2016.</p> <p>⁸Springer, Lindsay. "Native Plant Propagation Protocol Database: Orthocarpus Luteus." <i>RNGR (Reforestation, Nurseries, and Genetics Resources)</i>. Web.</p> <p>⁹TWC Staff. "NPIN: Native Plant Database: Orthocarpus Luteus." <i>Lady Bird Johnson Wildflower Center</i>. 2007. Web. 22 Apr. 2016.</p>
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	<p>¹⁰"Yellow Owl's-Clover (Orthocarpus Luteus)." <i>Sagebud Grow Your Garden</i>. Web. 25 Apr. 2016.</p> <p>¹¹"Yellow Owl's-clover - Orthocarpus Luteus - Overview - Encyclopedia of Life." <i>Encyclopedia of Life</i>. Web. 21 Apr. 2016.</p>
Other Sources Consulted	<p>Connelly, Kevin. <i>Gardener's Guide to California Wildflowers</i>. Sun Valley, CA: Theodore Payne Foundation for Wild Flowers and Native Plants, 1991. Print.</p> <p>Emery, Dara E. <i>Seed Propagation of Native California Plants</i>. Santa Barbara, CA: Santa Barbara Botanic Garden, 1988. Print.</p> <p>Franklin, Jerry F., and C. T. Dyrness. <i>Natural Vegetation of Oregon and Washington</i>. Corvallis: Oregon State UP, 1988. Print.</p> <p>Johnson, Eric A., and Scott Millard. <i>How to Grow the Wildflowers</i>. Tucson, AZ: Ironwood, 1993. Print.</p> <p>Robson, Kathleen A., Alice Richter, and Marianne Filbert. <i>Encyclopedia of Northwest Native Plants for Gardens and Landscapes</i>. Portland, Or.: Timber, 2008. Print.</p> <p>Smith, M. Nevin. <i>Native Treasures: Gardening with the Plants of California</i>. Berkeley: U of California, 2006. Print.</p> <p>Stokes, Donald W., and Lillian Q. Stokes. <i>The Wildflower Book: From the Rockies West: An Easy Guide to Growing and Identifying Wildflowers</i>. Boston: Little, Brown, 1993. Print.</p> <p>Young, James A., and Cheryl G. Young. <i>Collecting, Processing, and Germinating Seeds of Wildland Plants</i>. Portland, Or.: Timber, 1986. Print.</p>
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