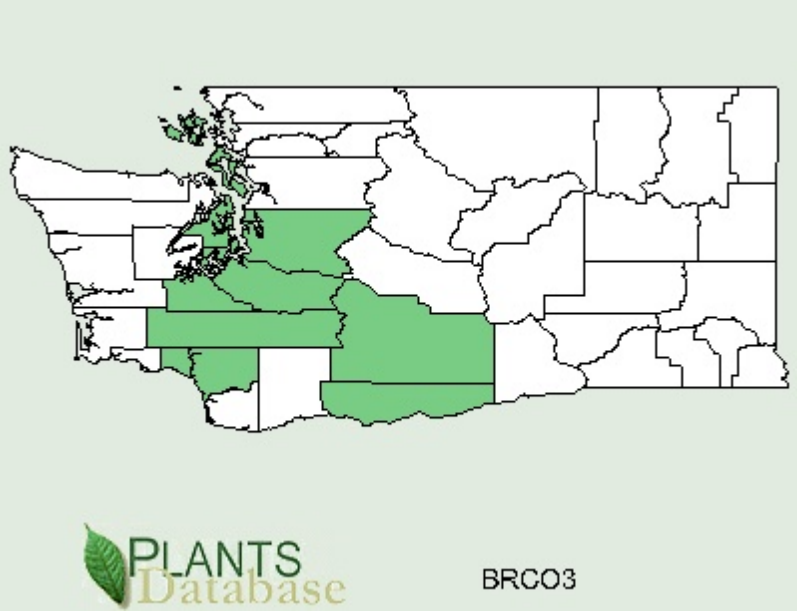
Plant Propagation Protocol for *[Brodiaea coronaria* (Salisb.) Engl. ssp. *coronaria]*
ESRM 412 – Native Plant Production

North America

http://plants.usda.gov/java/profile?symbol=BRCOC

Washington State



http://plants.usda.gov/java/county?state_name=Washington&statefips=53&symbol=BRCOC

TAXONOMY	
Family Names	
Family Scientific Name:	Liliaceae
Family Common Name:	Lily family
Scientific Names	
Genus:	*Brodiaea* Sm
Species:	*coronaria*
Species Authority:	(Salisb.) Engl.
Variety:	
Sub-species:	*Coronaria* *rosea* (Greene) Niehaus
Cultivar:	
Authority for Variety/Sub-species:	(Salisb.) Engl. (Greene) Niehaus
Common Synonym(s) (include full scientific names (e.g., *Elymus glaucus* Buckley), including variety or subspecies information)	*Brodiaea coronaria* (Salisb.) Engl. ssp. *coronaria* – crown brodiaea *Brodiaea coronaria* (Salisb.) Engl. ssp. *rosea* (Greene) Niehaus – Indian Valley brodiaea
Common Name(s):	Crown Brodiaea, Harvest Brodiaea, Indian potato, topoderos, walla, Harvest Lily (2, 3, 4, 7)
Species Code (as per USDA Plants database):	BRCO3
The information above is cited from the USDA website (1).	
GENERAL INFORMATION	
Geographical range (distribution maps for North America and Washington state)	Mountains to grasslands (2)
Ecological distribution (ecosystems it occurs in, etc):	Open, often gravelly sites (grassy meadows and slopes, rocky areas) (3)
Climate and elevation range	Low elevations, 0 to 1600 m (3, 4)
Local habitat and abundance; may include commonly associated species	Valley grassland, foothill woodland, mixed conifer forests, and volcanic mesas. (4) *Lupinus densiflorus* (8)
Plant strategy type / successional stage (stress-tolerator, competitor, weedy/colonizer, seral, late successional)	N/A

Plant characteristics (life form (shrub, grass, forb), longevity, key characteristics, etc)	Perennial herb to 30 cm tall, from a deeply buried round, scaly corm about 2 cm across. (3, 6) The umbel-shaped inflorescence has 3 to 11 flowers; each flower is bell-shaped and the color varies from blue-purple, pink-purple to rose. (4, 6)
PROPAGATION DETAILS	
Ecotype (this is meant primarily for experimentally derived protocols, and is a description of where the seed that was tested came from):	Seeds were collected in Lane Co., Oregon near Eugene. (5)
Propagation Goal (Options: Plants, Cuttings, Seeds, Bulbs, Somatic Embryos, and/or Other Propagules):	Plants(5)
Propagation Method (Options: Seed or Vegetative):	Seed(5)
Product Type (options: Container (plug), Bareroot (field grown), Plug + (container-field grown hybrids, and/or Propagules (seeds, cuttings, poles, etc.))	Container (plug) (5)
Stock Type:	Bulbs(5)
Time to Grow (from seeding until plants are ready to be outplanted):	2 Years(5)
Target Specifications (size or characteristics of target plants to be produced):	2-year old bulbs(5)
Propagule Collection (how, when, etc):	N/A
Propagule Processing/Propagule Characteristics (including seed density (# per pound), seed longevity, etc):	N/A
Pre-Planting Propagule Treatments (cleaning, dormancy treatments, etc):	Seeds were sown into cone-tainers filled with Sunshine #1(a soil-less peat-based media) amended with micro-nutrients (Micromax) and a slow release fertilizer (Osmocote 14-14-14). (5) The flats of cone-tainers were covered with poly-ethylene bags and placed in a walk-in cooler (35-40 degrees) for 90 days. (5)

Growing Area Preparation / Annual Practices for Perennial Crops (growing media, type and size of containers, etc):	Flats were removed from the cooler after 90 days and placed in a greenhouse set at moderate temperatures (70 degrees days/50 degrees nights). (5) Plant the seeds in six-inch pots because the corms will pull themselves down to the depth they require. Place them on top of the soil and sprinkle a little soil over them and put one-quarter inch gravel on top. (4) Set the pots in partial shade so they won't dry out so fast. They can be outside or in a hot house. The seed does not need to be stratified. (4) Start watering the pots right away and keep them slightly damp. Fertilize the pots in late winter and early spring and protect the plants from birds and other animals. (4)
Establishment Phase (from seeding to germination):	Seedlings emerged within two weeks. (5)
Length of Establishment Phase:	N/A
Active Growth Phase (from germination until plants are no longer actively growing):	N/A
Length of Active Growth Phase:	N/A
Hardening Phase (from end of active growth phase to end of growing season; primarily related to the development of cold-hardiness and preparation for winter):	Plants went dormant in midsummer and re-emerged in late fall. (5)
Length of Hardening Phase:	N/A
Harvesting, Storage and Shipping (of seedlings):	store the seeds in a paper sack until autumn (4)
Length of Storage (of seedlings, between nursery and outplanting):	N/A
Guidelines for Outplanting / Performance on Typical Sites (eg, percent survival, height or diameter growth, elapsed time before flowering):	Out-plant them in the autumn. (4)
Other Comments (including collection restrictions or guidelines, if available):	Higher germination rates were observed in seeds that were placed in a growth chamber with alternating temperatures (40 degree days 35 degree nights) and 8 hours of light 16 hours of darkness. (5)

INFORMATION SOURCES	
References (full citations):	1. "Classification." *USDA*. 1 Jun 2009 <http://plants.usda.gov/java/ClassificationServlet?source=profile&symbol=BRCO3&display=31>. 2. "Brodiaea coronaria." *wikipedia*. 1 Jun 2009 <http://en.wikipedia.org/wiki/Brodiaea_coronaria>. 3. Pojar, Jim, A. MacKinnon, and Paul B. Alaback. Plants of the Pacific Northwest Coast: Washington, Oregon, British Columbia & Alaska. Redmond, Wash: Lone Pine Pub, 1994. 4. Anderson, Kat and Wayne Roderick. "HARVEST BRODIAEA." *Plant Guide* 31 May 2006 Web.01 June 2006. <http://plants.usda.gov/plantguide/pdf/cs_brco3.pdf>. 5. "Protocol Information." *nativeplantnetwork*. 1 Jun 2009 <http://www.nativeplantnetwork.org/network/view.asp?protocol_id=2724>. 6. "Brodiaea coronaria (Salisbury) Engler, Notizbl. Königl. Bot. Gart. Berlin. 2: 317. 1899. " *Flora of North America*. 1 Jun 2009 <http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=242101436>. 7. Douglas Deur, Nancy J. Turner, Keeping it living: traditions of plant use and cultivation on the Northwest Coast of North America. illustrated. UBC Press, 2005. Print. 8. "Lupinus densiflorus." Garry Oak and Associated Ecosystems in British Columbia. 1 Jun 2009 <http://www.goert.ca/documents/PARFS_lupidens.pdf>
Other Sources Consulted (but that contained no pertinent information) (full citations):	*US Forest Service*. 1 Jun 2009 <http://www.fs.fed.us/cgi-bin/texis/searchallsites/search.allsites/>. "Brodiaea coronaria (Salisb.) Engl.." *Native Plant Database*. lady bird johnson wildflower center. 1 Jun 2009 <http://www.wildflower.org/plants/result.php?id_plant=BRCO3>. "PLANT CATALOG." *Native Plants of the Northwest*. 1 Jun 2009 <http://www.nwplants.com/business/catalog/index.html>. "Brodiaea coronaria (Salisb.) Engl. ." *ITIS Report*. 1 Jun 2009 <http://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_val

	ue=42803>. *MsK Rare Plant Nursery*. 1 Jun 2009 <http://www.msknursery.com/index.htm>. *Native Seed Network*. 1 Jun 2009 <http://www.nativeseednetwork.org/index>. "Natural Resources and Parks." *King County*. 1 Jun 2009 <http://www.kingcounty.gov/environment/dnrp.aspx>. "Native Plants." *Washington State University*. 1 Jun 2009 <http://cahedb.wsu.edu/nativePlant/scripts/webShowClassification.asp>. *Bulletin of the Torrey Botanical Club*, Vol. 66, No. 3 (Mar., 1939), pp. 161-166 Published by: Torrey Botanical Society Stable URL: http://www.jstor.org/stable/2481226 Drake, D. and K. Ewing. 1997. Germination Requirements of 32 Native Washington Prairie Species. pp. 181-187 in Ecology and Conservation of the South Puget Sound Prairie Landscape. P. Dunn and K. Ewing eds. The Nature Conservancy of Washington, Seattle, WA. Murphy, Madrona. "Plant communities in a cultural landscape: incorporating aesthetics and historical land use." Washington.edu. 1 Jun 2009 <http://www.engr.washington.edu/epp/psgb/2005psgb/proceedings/papers/D1_MURPH.pdf>.
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