Plant Propagation Protocol for *Lomatium bicolor*

Esrm 412 - Native plant production

Spring 2017

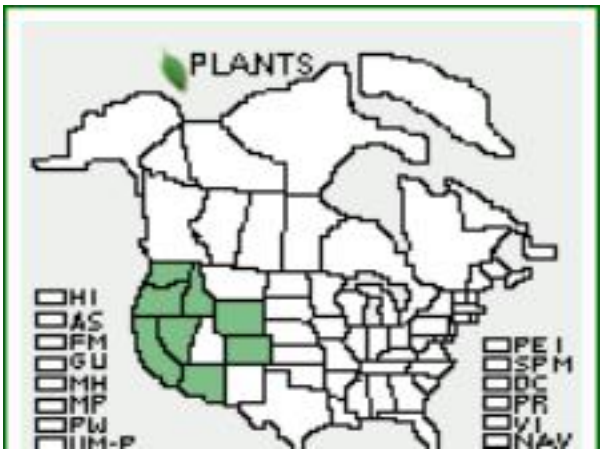
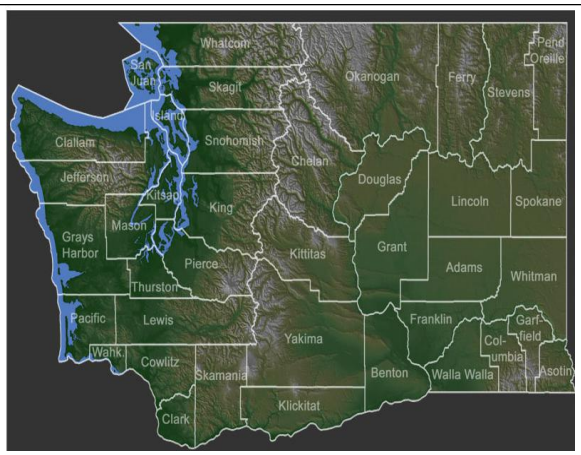


Figure 1 Plant Distribution in North America Figure 2 Plant Distribution in Washington

Source: USDA Plants Database

TAXONOMY	
Plant Family	
Scientific Name	Apiaceae
Common Name	Carrot family
Species Scientific Name	
Scientific Name	*Lomatium bicolor (S. Watson) J.M. Coult. & Rose*
Genus	*Lomatium* Raf. (USDA, 2017b)
Species	*Lomatium bicolor (S. Watson) J.M. Coult. & Rose* (USDA, 2017b).
Varieties	*Lomatium bicolor* (S. Watson) J.M. Coult. & Rose var. leptocarpum (Torr. & A. Gray) Schlessman – Wasatch

	desertparsley
Sub-species	*Lomatium bicolor leptocarpum*
Cultivar	
Common Synonym(s)	None (Knoke & Giblin, 2007)
Common Name(s)	Wasatch desertparsle, biscuitroot
Species Code (as per USDA Plants database)	LOBI for *Lomatium bicolor* (S. Watson) J.M. Coult. & Rose LOBIB for *Lomatium bicolor* (S. Watson) J.M. Coult. & Rose var. bicolor LOBIL for *Lomatium bicolor* (S. Watson) J.M. Coult. & Rose var. leptocarpum (Torr. & A. Gray) Schlessman
GENERAL INFORMATION	
Geographical range	 According to the USDA Plants database, *Lomatium bicolor* is present in the extreme southeast of Washington state. The distribution in the North

	America and Washington has been presented as maps above (USDA, 2017b).
Ecological distribution	It grows in non-marine ecology with facultative upland status.
Climate and elevation range	It favors dry areas of foothills meadows. It favors clay soils for its propagation. It also grows on alkaline soils. It can grow at up to the moderate altitudes of 8500 feet. It can survive in mild rainfall due to stress resistant properties.
Local habitat and abundance	Its local habitat and abundance are in the states of Utah, Idaho, Wyoming, Colorado, Arizona, California, Nevada, and Oregon. Western mountains & coast are also abundant with its presence (USDA, 2017b).
Plant strategy type/successional stage	It is a perennial herb with drought tolerance. It also offers resistance to soil erosion and grazing (Schlessman, 1982).
Plant characteristics	It is perennial wild herb with the flowering period from June to July. The plant has a woody taproot and its height remains 18 to 50 cm depending on the environmental conditions. Its flowers are yellow in color with the globular shape (Schlessman, 1982).
PROPAGATION DETAILS (Cordon Culture Method as Explained by Huxley and Griffiths, 1999)	

Ecotype	Seeds collected from the USDA genebank.
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Container
Time to Grow	3 months
Target Specifications	20 cm height
Propagule Processing/Propagule Characteristics	9 seeds per square feet of the container
Pre-Planting Propagule Treatments	Pre-sown soaking of seeds for imbibition for at least 20 hours to sort out healthy seeds and provision of enough moisture to initiate germination.
Growing Area Preparation / Annual Practices for Perennial Crops	The size of the container must be 1 meter in width and height and depth of 30 cm at least. The media for growth should be clay loam incorporated with 20 percent organic animal manure. It is important to establish a transparent glass cover so that the plants can be kept under the light.
Establishment Phase Details	The best time for sowing the seed is autumn. The seeds should be placed at the depth of 3 cm in the soil. The propagation of Wasatch desert parsley requires a relatively sunny area therefore, it is recommended to place the container in a sunny area.
Length of Establishment Phase	20 days

Active Growth Phase	Initial one and a half month after germination is the phase when *Lomatium bicolor* grows fast, and stems may need support to keep the plants upright. Cordon system (Huxley & Griffiths, 1999) helps the plants gaining height without falling. When plants are 15 cm tall, then cordon system support must be provided by tying the plants with cane poles erected in the container. Although the plant can survive under a variety of conditions, it is recommended to place the container in the sunny area when the seedlings have attained 15 cm height. Continues watering is beneficial for positive outcomes in terms of growth and health of the plants.
Length of Active Growth Phase	45 days from germination
Harvesting, Storage, and Shipping	Although the plant is perennial and can survive under a variety of environment, it will be beneficial to give hardening of 10 days at relatively higher temperatures gradually before exposing them to the field. It is also recommended to decrease the amount of watering to install water resistance in the plants
Length of Storage	Up to 10 days
Guidelines for Outplanting/Performance on	*Lomatium bicolor* favors relatively well-drained soils so are sure to provide relatively dry soil medium. Ideal

Typical Sites	height for out planting of plantlets is 20 cm before the onset of flowering period. Late transplantation or without hardening transplantation at a relatively higher temperature above 25°C may initiate flowering in the plants.
Other Comments	It is important to use sterilize media to avoid soil-borne disease. The plant is wild in nature, therefore, have high insect pest resistance, but there are always chances of fungal disease attack at early stages. It is necessary to use the antifungals like Mancozeb if needed, otherwise, the plant may not produce side shoots and die eventually. It is also important to take special care of tap root while transplantation because it may affect the plant establishment in a container free environment.
INFORMATION SOURCES	
References	Huxley, A. J., & Griffiths, M. (1999). New Royal Horticultural Society dictionary of gardening. Grove's Dictionaries Inc. London. Knoke, D., & Giblin, D. (2007). *WTU Herbarium Image Collection - Burke Museum*. *Biology.burke.washington.edu*. Retrieved 5 June 2017, from

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Other Sources Consulted	Schuller, R., & Halvorson, R. (2010). Forest Creeks Research Natural Area: Guidebook Supplement 39. Snow, N. W., & Brasher, J. W. (2004). *Provisional checklist of vascular plants for the Southern Rocky Mountain Interactive Flora (SRMIF)*. Herbarium (GREE), Department of Biological Sciences, University of Northern Colorado.
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