**Plant Propagation Protocol for *Viburnum ellipticum***
ESRM 412 – Native Plant Production
Protocol URL: https://courses.washington.edu/esrm412/protocols/*VIEL.pdf*

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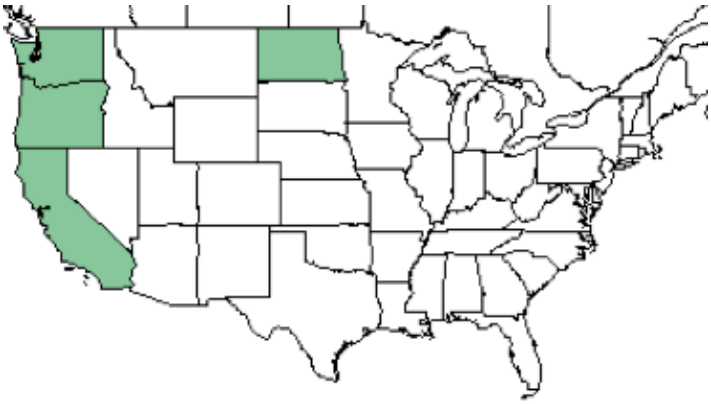
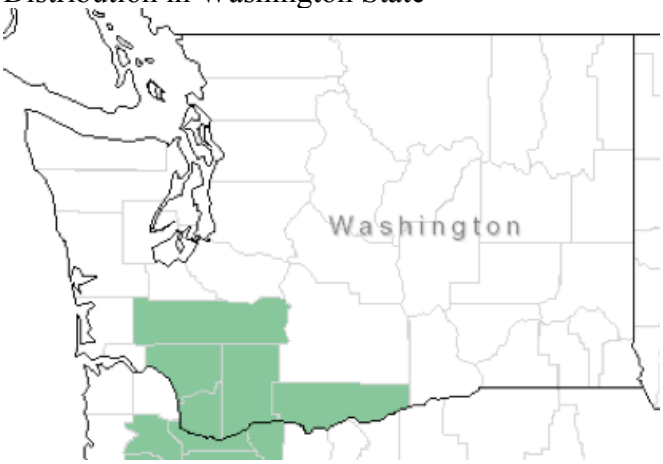
| **TAXONOMY** | |
|---|---|
| Plant Family | |
| Scientific Name | *Caprifoliaceae* |
| Common Name | Honeysuckle |
| Species Scientific Name | |
| Scientific Name | *Viburnum ellipticum* Hook.[2] |
| Varieties | |
| Sub-species | |
| Cultivar | |
| Common Synonym(s) | *Viburnum ellipticum* Hook. var. *macrocarpum* Suksd.[2] |
| Common Name(s) | common viburnum, western blackhaw, oval-leaved viburnum [2,3] |
| Species Code (as per USDA Plants database) | VIEL |

| GENERAL INFORMATION | |
|---|---|
| Geographical range | Distribution in North America[2]<br>  <br>Distribution in Washington State[2]<br>  |
| Ecological distribution | Thickets, bottomlands, and open woods.[3] Oak woodlands, pine forests, and chaparral.[4] |
| Climate and elevation range | Low to mid elevation.[4] |
| Local habitat and abundance | Strong association with *Quercus garryana* in the *Quercus garryana/Viburnum ellipticum/Toxicodendron diversilobum* plant community. In Washington, occurs mostly near the Columbia river, with one outlier community in Thurston county.[5] |
| Plant strategy type / successional stage | Late successional.[5] |
| Plant characteristics | Erect deciduous shrub with shiny oval shaped leaves and flat-topped clusters of odiferous white flowers. Fruit turns from red to black as it ripens.[4] |
| **PROPAGATION DETAILS** | |
| Ecotype | |
| Propagation Goal | Plants |
| Propagation Method | Seed |
| Product Type | Bareroot (field grown) |

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| Stock Type | |
| Time to Grow | 2-3 years[6,7] |
| Target Specifications | 6" 1-0s or 24"+ 2-0s [6,7] |
| Propagule Collection Instructions | Collect seed in late August to mid September. Fruit is black and juicy, persists on shrub (doesn't readily fall from the plant or get eaten by birds). [6,7] |
| Propagule Processing/Propagule Characteristics | Seed is "hard as a rock", large, elliptic, and easy to clean.[6,7] Seed can be stored without affecting viability, but will oxidize (turning almost black) in storage.[7] |
| Pre-Planting Propagule Treatments | Seed should be cleaned by running through a macerator with water, and then floating the pulp off or separating by screening. Air-dry seeds before storage. Seed may remain viable for 10 years or more when stored dry at 34-38F. [8]<br>Seeds have both physical and physiological dormancy, and require a "cold/warm/cold" stratification sequence to germinate.[6,7] Warm stratification allows for development of the radicle. The second cold stratification breaks dormancy in the epicotyl.[8] This can be accomplished in one of two ways. Seeds can be direct sown in the fall, and allowed to stratify in the field for roughly 18 months.[6] Seeds can also be initially cold stratified in a cooler by first imbibing for 24-48 hours (with at least one water exchange), followed by 120 days at 38F. Seeds should then be outplanted by mid-July, and should not be allowed to dry out completely during the summer months.[7] In either case, the second cold stratification is accomplished naturally in the field. Germination occurs the following spring.[6,7] |
| Growing Area Preparation / Annual Practices for Perennial Crops | |
| Establishment Phase Details | Seeds germinate in February, and are quite vulnerable to cold temperatures, wind, and infection. Mulch can be used to insulate, and Captan and Ridomil to ward off *Pythium sp*. and *Fusarium sp*..[7] |
| Length of Establishment Phase | |
| Active Growth Phase | |
| Length of Active Growth Phase | |
| Hardening Phase | |
| Length of Hardening Phase | |
| Harvesting, Storage and Shipping | Plants can be harvested after their first growing season in December or January as roughly 6" plants, or after their second season as 24-30" plants. [6,7] |
| Length of Storage | Seedlings can be stored dormant in a cooler for up to 3-4 months before outplanting.[7] |
| Guidelines for Outplanting / | |

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| Performance on Typical Sites | |
| Other Comments | Early spring foliage is susceptible to aphids. Affected leaves can be removed, and infestations generally don't persist through the summer. [6] |
| **PROPAGATION DETAILS** | |
| Ecotype | Linn County, OR [9] |
| Propagation Goal | Plants |
| Propagation Method | Vegetative |
| Product Type | Bareroot |
| Stock Type | |
| Time to Grow | |
| Target Specifications | |
| Propagule Collection Instructions | Branches were harvested in February and stored in a cooler until being processed as hardwood cuttings.[9] |
| Propagule Processing/Propagule Characteristics | Branches were cut into 8-12" segments containing at least 2 nodes. One-year wood was used. Apical buds were removed.[9] |
| Pre-Planting Propagule Treatments | Cuttings were stuck either untreated, or dipped in Wood's Rooting Hormone for 5 seconds.[9] |
| Growing Area Preparation / Annual Practices for Perennial Crops | Three growing areas were tested. [9]<br>Mist bench in greenhouse: Cuttings were placed in 5" of moist perlite and misted for 20 seconds/hour during daylight and once at night. No tent, fertilizer, or bottom heat was used.<br>Upland terrace: The field was weed-free, moist, sandy loam soil. No fertilizer or irrigation was added.<br>Artificial pond: Saturated sandy substrate with sub-irrigation. |
| Establishment Phase Details | Rooting was poor in all cases. The greenhouse saw 5% rooting with untreated cuttings, and 21% rooting with treated cuttings. The upland terrace saw 21% rooting in both treated and untreated cuttings. The ponded site showed 0% rooting. Roots were primarily located at the basal end of the cutting, associated with the callus. Rooting might be increased by using vigorous shoot cuttings dipped in dilute IBA for 2-3 minutes. Softwood cuttings collected from vigorous sprouts or suckers might also work better. [9] Softwood cuttings of many viburnums taken in June or July will root in 4 weeks on a mist bench with 20C bottom heat. Propagation by divisions or layering also works for many viburnums.[10] |
| Length of Establishment Phase | |
| Active Growth Phase | |
| Length of Active Growth Phase | |

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|---|---|
| Hardening Phase | |
| Length of Hardening Phase | |
| Harvesting, Storage and Shipping | |
| Length of Storage | |
| Guidelines for Outplanting / Performance on Typical Sites | |
| Other Comments | Hardwood cuttings might work better in a more controlled environment.[9] |
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| **INFORMATION SOURCES** | |
| References | see below |
| Other Sources Consulted | |
| Protocol Author | Kelly Broadlick |
| Date Protocol Created or Updated | 05/19/15 |


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2. Plants Profile for Viburnum ellipticum (common viburnum). *USDA Plants Database*. http://plants.usda.gov/core/profile?symbol=VIEL. Accessed May 19, 2015.

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4. Turner M, Kuhlmann E. *Trees and Shrubs of the Pacific Northwest*. Portland, OR: Timber Press, Inc.; 2014.

5. Chappell CB. Upland plant associations of the Puget Trough Ecoregion, Washington-QUGA/VIEL/TODI. 2006. http://www1.dnr.wa.gov/nhp/refdesk/communities/index.html.

6. Ridling, Mike. Sevenoaks Nursery. Personal communication on May 14, 2015.

7. Levy-Boyd, Dylan. Fourth Corner Nurseries. Personal communication on May 17, 2015.

8. Forest Service USDA. *Seeds of Woody Plants in the United States*. Vol Agriculture Handbook No. 450. Washington, DC: Forest Service USDA; 1974.

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10. Kenyon L. *Viburnum*. The National Council for the Conservation of Plants and Gardens; 2001.