

Plant Propagation Protocol for *Trillium ovatum*

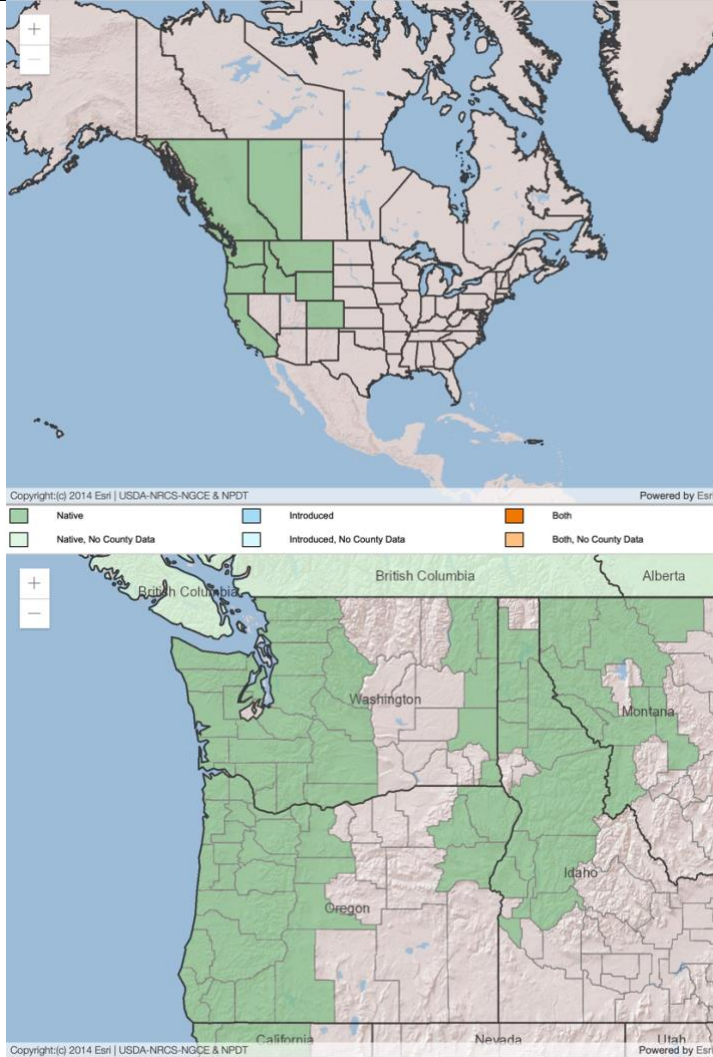
ESRM 412 – Native Plant Production


URL: <https://courses.washington.edu/esrm412/protocols/2021/TROV2.pdf>



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| TAXONOMY | |
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| Plant Family | |
| Scientific Name | <i>Liliaceae</i> |
| Common Name | Lily family |
| Species Scientific Name | |
| Scientific Name | <i>Trillium ovatum</i> Pursh. |
| Varieties | <i>T. ovatum</i> Pursh ssp. <i>ovatum</i> var. <i>hibbersonii</i> (T.M.C. Taylor & Szczaw.) G.W. Douglas & P. Pojar |
| Sub-species | <i>T. ovatum</i> Pursh ssp. <i>oettingeri</i> Munz & Thorne <i>T. ovatum</i> Pursh ssp. <i>ovatum</i> |
| Cultivar | N/A |
| Common Synonym(s) | <i>T. hibbersonii</i> |
| Common Name(s) | Pacific trillium, wake-robin, western trillium, Oettinger's trillium, Hibberson's trillium ¹⁴ |

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| Species Code (as per USDA Plants database) | TROV2 |
| GENERAL INFORMATION | |
| Geographical range |  <p>Image Credit: USDA PLANTS Database ¹⁴</p> <p>Occurs from British Columbia to California and inland to Montana and Idaho. ¹⁵</p> |
| Ecological distribution | Mixed evergreen forests on moist wooded slopes, streambanks, damp meadows, shaded open areas. ^{8, 15} |
| Climate and elevation range | Mesic forests from low to mid elevations, 10-2000 m ^{8, 11, 15} |
| Local habitat and abundance | T. ovatum is the most common and widespread species in the Northwest with the western white subspecies as the most abundant. ¹⁰ It is commonly associated with <i>Tsuga heterophylla</i> , <i>Polystichum munitum</i> , <i>Gaultheria shallon</i> , <i>Abies sp.</i> , <i>Vaccinium ovalifolium</i> , |

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| | <i>Maianthemum stellatum</i> , <i>Chimaphila umbellate</i> , and <i>Clintonia uniflora</i> . ¹⁵ |
| Plant strategy type / successional stage | Mid to late successional species ¹⁵ |
| Plant characteristics | <p>Perennial herb from 10 to 30 cm in height. 3 whorled, broadly ovate leaves from 5 to 18 cm in length at the top of a slender stem.¹²</p> <p>Flowering occurs from March to May.⁸ Solitary flower located on the end of the stalk with 3 white petals and light green sepals. Flowers change from white to pink or purple as they age.¹²</p> <p>Fruit is a fleshy capsule that is slightly winged.¹²</p>  <p>Photo © 2004 Ben Legler</p> <p>Image Credit: Ben Legler ⁵</p> |

PROPAGATION DETAILS

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| Ecotype | N/A |
| Propagation Goal | Plants |
| Propagation Method | Seeds |
| Product Type | Container (plug) |
| Stock Type | |
| Time to Grow | 3-4 springs from sowing ³ |
| Target Specifications | 20-30cm in height ⁷ |
| Propagule Collection Instructions | Collect and sow seeds as soon as they are ripe from late summer to early fall. ^{3,6} Seeds are often dropped just below the parent plant if not still attached. ¹¹ |
| Propagule Processing/Propagule Characteristics | Each flower produces a single capsule that can contain 1 to 150 seeds. ¹¹ |

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| Pre-Planting Propagule Treatments | <p>Separate seed from pulp in pod and keep moist.⁴</p> <p>Trillium seeds have a deep simple morphophysiological dormancy and require at least two winters and one summer, or two moist warm/cold cycles to break dormancy.^{1,9} They won't germinate until the second spring after they have been sown.⁹</p> <p>Cold stratification for at least 1 month at 15°C for germination and root emergence.^{11, 15} After cold stratification, expose to 2-3 months of warmth and place under cold treatment again for cotyledon emergence. Older seeds may take up to 3 years of stratification.¹¹</p> |
| Growing Area Preparation / Annual Practices for Perennial Crops | Sow seeds directly into a peaty mixture for stratification. ⁴ A recommended container is 72-cell plug trays that are 4.2 X 4.2 X 5.6 cm deep (1.7 X 1.7 X 2.25 inches) filled with 1:1 sphagnum peat moss and perlite and left uncovered. ³ |
| Establishment Phase Details | Water seeds daily throughout the summer and cover with an 80% shade cloth in the green house. ³ Prone to damping off if kept in too moist of conditions. ¹⁵ |
| Length of Establishment Phase | <p>1-3 years^{9, 11}</p> <p>Less than 15% will germinate and produce cotyledons the first spring but success may increase if initially planted with mother plant.³</p> |
| Active Growth Phase | Give 2 applications of Peters Professional Peat- Lite fertilizer (15N:16P2O5:17K2O) at about 180 ppm N (0.5 tbsp/gal) even if cotyledons have not emerged and give that same fertilizer once every other 2-3 weeks starting the first or second year when the first true leaves have come. ³ |
| Length of Active Growth Phase | 6 months (February to late July) ¹¹ |
| Hardening Phase | Place plants outside overwinter with Reemay fabric and white plastic. ³ |
| Length of Hardening Phase | Fall to late winter |
| Harvesting, Storage and Shipping | Transplant into 1-gallon containers in spring filled with Rexius Potting Mix containing fir bark, compost, pumice, and fertilizer. Top dress with Apex controlled-release fertilizer (19N:8P2O5:12K2O; 10 to 12 month release rate at 15.5 °C [60 °F]). ³ |
| Length of Storage | Few weeks, no longer than 2 months ⁷ |
| Guidelines for Outplanting / Performance on Typical Sites | Flowers appear after 4-7 years. ¹¹ Foliage remains low to the ground but becomes dense if rhizome development occurs. Life expectancy is ~10 years. ² |

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| Other Comments | N/A |
| PROPAGATION DETAILS | |
| Ecotype | N/A |
| Propagation Goal | Plants |
| Propagation Method | Vegetative (rhizome division) |
| Product Type | Container (plug) |
| Stock Type | |
| Time to Grow | 1-2 years after germination ⁷ |
| Target Specifications | 20-30cm in height ⁷ |
| Propagule Collection Instructions | Collect during fall. ¹³ Dig deep around the plant to ensure minimal damage to the roots and rhizomes. ⁶ Careful not break the stem as it may die back until spring. Keep root ball moist. ² |
| Propagule Processing/Propagule Characteristics | Underground rhizomes produce 1 stem annually with 1-3 leaves. ¹¹ |
| Pre-Planting Propagule Treatments | Wounding the rhizomes can encourage production of bulblets. ¹¹ |
| Growing Area Preparation / Annual Practices for Perennial Crops | Transplant rhizomes into 9 parts fine bark mulch with 1 part compost in ½ - 2-gallon pots depending on size. ⁷ |
| Establishment Phase Details | N/A |
| Length of Establishment Phase | N/A |
| Active Growth Phase | Rhizomes develop fleshy adventitious roots during the spring when the active growth phase occurs. ¹¹ Apply slow release Osomocote topical fertilizer 2x per year, once in later winter/early spring. ⁷ |
| Length of Active Growth Phase | 6 months (February to late July) ¹¹ |
| Hardening Phase | Keep in hoop house where temperatures are cooler over winter. ⁷ |
| Length of Hardening Phase | Winter months ⁷ |
| Harvesting, Storage and Shipping | Harvest before full leaves have grown to reduce transplant shock. Store in spring conditions before outplanting. ⁷ |
| Length of Storage | Few weeks, no longer than 2 months. ⁷ |
| Guidelines for Outplanting / Performance on Typical Sites | Turnover rate is slow; plants may take a few years to flower. ^{7, 11} Foliage remains low to the ground but becomes dense if rhizome development occurs. Life expectancy is ~10 years. ² |
| Other Comments | Over-harvesting of this species is a concern. It is recommended to salvage plants from sites scheduled for development or from your own property. ⁶ |
| INFORMATION SOURCES | |
| References | See below |
| Other Sources Consulted | See below |
| Protocol Author | Thuy Luu |
| Date Protocol Created or Updated | 05/26/20 |

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