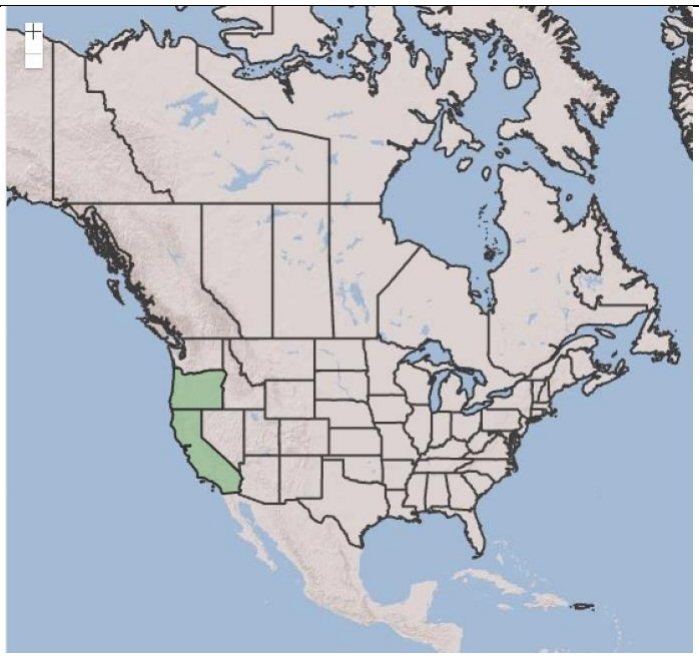
Plant Propagation Protocol for *Trifolium breweri*

ESRM 412 – Native Plant Production

URL: https://courses.washington.edu/esrm412/protocols/2026/TRBR3.pdf

TAXONOMY	
Plant Family	Fabaceae
Scientific Name	legume family
Common Name	Forest clover
Species Scientific Name	
Scientific Name	*Trifolium breweri*
Varieties	n/a
Sub-species	n/a
Cultivar	n/a
Common Synonym(s)	n/a
Common Name(s)	Forest clover, Brewer's clover (Oregon Flora)
Species Code (as per USDA Plants database)	TRBR3
GENERAL INFORMATION	
Geographical range	Washington, Oregon, California, southern and eastern US: in PNW, mostly in the southern WA and northern OR

	 USDA
Ecological distribution	dry forest, open areas, roadsides (Jepson eFlora)
Climate and elevation range	Temperate areas, 200 – 1800 m (Jepson eFlora)
Local habitat and abundance	Associated with conifer forests, especially pine (Oregon Flora)
Plant strategy type / successional stage	Spreads vegetatively (Oregon Flora)
Plant characteristics	• Perennial (USDA) • Flowers May-Aug (Jepson eFlora) • Dehiscent fruits (Jepson eFlora) • Seeds are brown and smooth (Jepson eFlora)
PROPAGATION DETAILS: FROM SEED	
Ecotype	n/a
Propagation Goal	plants
Propagation Method	By seed
Product Type	container

Stock Type	seedlings
Time to Grow	Six months
Target Specifications	Pre-flowering seedlings
Propagule Collection Instructions	Collect in August, towards the end of flowering. Fruits should be completely brown and crisp. Collect fruits in large batches, but no need to collect all seeds off of a single flowerhead, as plants produce many seeds and can easily create high-density patches (Crampton n.d.).
Propagule Processing/Propagule Characteristics	Collected propagules will likely contain a lot of debris that comprise of the fruits and the dried leftover flowers.
Pre-Planting Propagule Treatments	Preparation: sort fruit parts from flowers using a pan or a sieve, remove seeds from fruits using a rubber tube Storage: store in a dry, cool place away from sunlight - Dormancy treatments not required, since seeds don't naturally go dormant[1] (*Native Seed Production* n.d.)
Growing Area Preparation / Annual Practices for Perennial Crops	Propagate in a pit-moss medium, using 4-inch pots for individual plants - Seeds should be started large pots
Establishment Phase Details	Before seeding, scarify seeds in a sulfuric acid solution for 20-30 mins (Rezaei-Manesh 2023)
Length of Establishment Phase	One week
Active Growth Phase	Store at room temperature, with natural lighting. Watering only required every 2-3 days, since this species is adapted to dry forest conditions (Crampton n.d.)
Length of Active Growth Phase	Five months
Hardening Phase	Store outside to mimic natural environmental conditions.
Length of Hardening Phase	One month

[1] Uses a similar species that occurs in the same habitats as *Trifolium breweri*

Harvesting, Storage and Shipping	Transport them in 4-inch pots.
Length of Storage	Two weeks
Guidelines for Outplanting / Performance on Typical Sites	Plants should be able to form thick patches around the site they were planted.
Other Comments	n/a
INFORMATION SOURCES	
References	Oregon Flora Project. (n.d.). *Trifolium breweri*. Oregon Flora. https://oregonflora.org/taxa/index.php?taxon=8870 United States Department of Agriculture Natural Resources Conservation Service. (n.d.). *Trifolium breweri profile*. https://plants.sc.egov.usda.gov/plant-profile/TRBR3 University of California, Berkeley. (n.d.). *Trifolium breweri*. Jepson eFlora. https://ucjeps.berkeley.edu/eflora/eflora_display.php?tid=47056 University of California Agriculture and Natural Resources. (n.d.). *Native Range Clovers*. https://my.ucanr.edu/repository/fileaccess.cfm?article=157925&p=VMSQRS U.S. Department of Agriculture, Natural Resources Conservation Service, Corvallis Plant Materials Center. n.d. *Native seed production manual for the Pacific Northwest*. USDA NRCS. Rezaei-Manesh, H., Ghaderi-Far, F., Nosratti, I., Siahmarguee, A., & Chauhan, B. S. (2023). **Seed dormancy and germination ecology of several clover species**. *Seed Science and Technology, 51*(3), 329–353.
Other Sources Consulted	Consortium of Pacific Northwest Herbaria. (n.d.). *Trifolium breweri specimen records*. https://www.pnwherbaria.org/data/results.php?DisplayAs=WebPage&LimitToImaged=Y&ExcludeCultivated=Y&GroupBy=ungrouped&SortBy=Year&SortOrder=DESC&SearchAllHerbaria=Y&QueryCount=1&Genus1=trifolium&Species1=breweri&IncludeSynonyms1=Y&Zoom=4&Lat=55&Lng=-135&PolygonCount=0

	Harshberger, J. W. (1922). Ecologic and Morphologic Study of the Clovers (Trifolium). *Proceedings of the American Philosophical Society*, *61*(2), 136–150. http://www.jstor.org/stable/984411 Atwood, S. S. (1941). *Controlled self- and cross-pollination of Trifolium*. *Journal of the American Society of Agronomy, 33*(5), 359–372. Jepson, W. L. (1975). A Manual of the Flowering Plants of California. United States: University of California Press.
Protocol Author	Kevin Jiang
Date Protocol Created or Updated	5/19/2026