

OSU Oregon Olive Cold Hardiness Evaluation: Preliminary Results

PRELIMINARY RESULTS NOT FOR DISTRIBUTION

Olives and cold injury

Susceptibility to cold injury remains a limitation to cultivation of olive in western Oregon

Information about winter cold hardiness of individual olive cultivars is very rare. One of the more relevant publications is:

Freeze damage and coldhardiness in olive-findings from the 1990 freeze. Denney et al. 1993. *California Agriculture*. 47:1-12.

The goal of our research is to evaluate as many available olive cultivars for cold hardiness (winter injury) under western Oregon conditions and compare existing cultivars that are planted at grower collaborator sites.

Research approach

Cuttings obtained primarily from the USDA-ARS National Clonal Germplasm Repository in Davis, CA. Stem sections of approximately 30 accessions received annually in summer from 2017-2019. Approximately 30 accessions remain to be acquired in 2020.

Rooted cuttings from 2017-18 were potted on as stock plants for re-propagation.

The evaluation also received a donation of large potted plants of ~70 cultivars in spring 2018. These were planted in a NWREC stock block in August 2018.

20 cuttings of each of 123 accessions were taken in August 2019. They are being rooted under mist and bottom heat in the NWREC greenhouse.



Rooted cuttings will be potted and grown on in 2020 for a spring 2021 planting. 4 replications of each accession will be planted out in an irrigated evaluation site adjacent to the Bureau of Reclamation Agrimet weather station at NWREC and may also be independently evaluated at SOREC in Medford, OR, depending on the number of available plants.

Data to be collected in the field evaluation will include growth, flowering, cold injury, pest and disease issues and fruit characteristics. Data at grower sites will also be evaluated.