

# OSU Oregon Olive Propagation Trial: Preliminary Results

## PRELIMINARY RESULTS NOT FOR DISTRIBUTION

Propagation research at OSU began in 2018 in order to determine best practices for local olive growers to propagate their own plants. This could alleviate the need for Oregon growers to rely upon purchasing plant material from out-of-state, reduce the risk of introduced pests, provide flexibility for growers, and potentially reduce costs.

Propagation trials will span three years, with different trials conducted each year. Trials are conducted at NWREC as well as on-site at local olive grower(s), allowing for grower perspectives and experience. The three aspects of the trial we are investigating include timing for collecting cuttings, rooting hormone and rooting media.

Year 1 (2018):

Evaluate 3 timings of taking cuttings (spring, summer, fall) and rooting hormone (IBA, IBA + NAA) using an “easy to root” cultivar (Arbequina).

Year 2 (2019):

Evaluate 2 cultivars with different rooting abilities (Leccino and Picual) for their ability to root in 4 different rooting media (combinations of peat, perlite and coco coir).

Year 3 (2020):

The two previous studies will be combined, evaluating cultivars with different rooting abilities with the best two rooting hormones.

Details for each of the trials:

- Bottom heat within a heated greenhouse
- Automated mist system
- Trial evaluated 90 days after sticking cuttings
- Data collected included rooting percentage, primary root number and length

Results of 2018 studies:

- Using a peat/perlite media the highest rooting percentage (96%) occurred with cuttings planted in the spring. During this timing the hormone treatments, 2000ppm IBA + 1000ppm NAA (1:4 dilution ratio) as well as 8000 ppm IBA, produced the highest rooting percentage. The treatment with the most number of primary roots (13) was 8000ppm IBA.
- The trial at the grower site resulted in slightly different results, therefore we are currently repeating this study during 2019.
- A sub-trial during the 2018 fall timing evaluated olive propagation without mist. Results showed that olives can be successfully rooted without a mist system in a low-technology environment. IBA applied at the 3000ppm rate resulted in 100% rooting with on average 6 primary roots. This was not statistically different however than the 2000ppm IBA + 1000ppm NAA and the 8000 ppm IBA rate which both resulted in 79% rooting. The fourth hormone rate of 4000ppm IBA + 2000ppm NAA (2:3 dilution ratio) resulted in a significantly lower rooting percentage of 67%.