

2022 PNW Cherry Research Priorities

Request for Proposals (RFP)



The Washington Tree Fruit Research Commission (WTFRC) and the Oregon Sweet Cherry Commission (OSCC) are seeking cherry research proposals in the following priority areas.

Highest priority

Little cherry disease (LCD) identification, management, and elimination in order of importance

1. Optimized or new testing methods (reliable, cost effective, fast, non-destructive)
 - a. Research-informed solutions to reduce costs, turn-around time, and improve detection of recent infection (especially for non-symptomatic trees)
 - i. Early disease detection based on identification of physiological changes caused by phytoplasma infection.
 - ii. Study the biotic and abiotic factors that influence phytoplasma tropism and titer during an infection from inoculation to systemic infection and symptom expression.
 - iii. Methods for rapid, reliable identification of infected trees in orchards and nurseries.
 - iv. Determine strain specific symptoms and virulence.
 - v. Determine prevalence, vectors, virulence, budwood sources of LChV1.
2. Effective industry outreach program to develop and/or disseminate information to stakeholders (Eng./Span.) based on continuously adjusted LCD group priorities and industry feedback, while considering novel ways for effective industry penetration/adoption of information.
 - a. Monitor the spread of the infections (continued mapping).
 - b. Educational materials and training to increase effective identification, scouting, sampling, tree removal and vector management.
 - c. Develop and implement tree removal, re-establishment, and management strategies to reduce the probability of infection by little cherry virus and X-disease phytoplasma. This should include an estimate of local pathogen pressure to assess re-infection risks.
3. Enable safe on-farm research
 - a. Develop designated facilities (ideally a contained, screened-in orchard) to conduct research in realistic scenarios where trees can be infected while limiting pathogen spread to commercial orchards.
4. Leafhoppers
 - a. Identify all vectors of each, X-disease and Little cherry virus 1, and Little cherry virus 2.
 - b. Determine vector biology, behavior, phenology, and host plant use, particularly for leafhoppers, including impacts of phytoplasma on leafhoppers.
 - c. Development of an integrated pest management program for X-disease vectors that can be implemented areawide.

Areas of high interest

Spotted wing drosophila (SWD) detection and management

- PNW specific insect biology (source, movement, overwintering, population density spikes and regional differences) and introduction of new technologies to optimize field management.

Powdery mildew management

- new chemistries (especially for organic producers).
- resistance management (develop extension materials with spray program options).
- inoculum testing (especially end of season).
- strategic control methods (explore postharvest opportunities).

Scion breeding program additional target areas

- Powdery mildew resistance
- Postharvest evaluation
- LCD resistance

Postharvest

- How does firmness at harvest relate to quality after shipping?
- Determine export ability by variety.

Technology

Projects that work across several different crops are encouraged. Those projects will be moved into the technology committee.

- Partial or full automation of pruning, thinning, spraying, insect monitoring, harvest.
 - o Three state (CA/OR/WA) collaboration to automate cherry harvest.
- Accurate crop estimation (yield, size profile).

Some of the priorities listed do not specifically ask for organic options. We are interested in having organic practices considered in all proposed work, when appropriate. Also, proposals are expected to include an industry outreach component if the sought-out project outcomes are anticipated to directly translate into management changes. Maintaining profitable and sustainable tree fruit companies is of utmost importance to our industry and economic considerations need to be included in project designs.

Novel ideas in areas not listed as priority are encouraged. It is suggested to contact Ines Hanrahan (hanrahan@treefruitresearch.com) to discuss any ideas outside of the priorities identified by the 2022 Request for Proposals (RFP), before submitting a preproposal.

Detailed instructions for preproposal submissions may be found at: <https://treefruitresearch.org/proposals-reports/pre-proposal/instructions/>

Preproposals should be submitted by August 25, 2021 to: amy@treefruitresearch.com.

For general information about the funding process please consult the Proposal, Review, and Funding Process Description Document: <https://treefruitresearch.org/proposals-reports/new-researcher-onboarding/>

For more information or context please contact: hanrahan@treefruitresearch.com