

2026 PNW Cherry and Stone Fruit Research Priorities

Request for Proposals (RFP)



The Washington Tree Fruit Research Commission (WTFRC) and the Oregon Sweet Cherry Commission (OSCC) are seeking cherry and stone fruit research proposals in the following priority areas. Topics marked with an * are of special interest to the committee for the FY 25 funding cycle.

Fruit Quality and Safety (how to achieve better fruit quality in the market)

1. Develop SOP for consistent production of high-quality cherries, addressing:
 - a. Nutrition and Plant Growth Regulators (PGRs) (GA timing/volume/multiple applications, Regina)
 - b. Optimizing vigor
 - c. Crop load management (including new varieties' alternate bearing tendencies like Pearl/SweetNote, and pruning strategies, fruit set in Coral Champagne)
 - d. *How to even out mixed maturity at harvest (e.g. Coral Champagne)
 - e. Irrigation for optimal firmness pre-harvest
 - f. *Stems: holistic approach (breeding/hort./postharvest) to healthier stems and better retention (e.g., Skeena/Sweetheart/Early Robin) and also considering stem-on/stem-off
 - g. *Heat stress mitigation for profitable growth (e.g., Skeena/Bing; e.g. evaluate products and strategies)
 - h. *Extended storability (what can we learn from other countries success stories?) and variety-specific exportability
2. BMP for cherry packing lines to ensure spoilage prevention and food safety
 - a. BMP for hydrocoolers to eliminate potential for microbial contamination.
 - b. Review of current practices and the reduction that occurs from our current controls.
3. Storage technology: efficiency and suitability of new technology (such as below freezing storage)
4. *Fruit abscission: understanding of the underlying mechanism (why did fruit release between stem and cherry in 2024?; PGR's such as GA esp. in years of mixed maturity, ethephon: variety specific response)
5. Cold hardiness (e.g. both going in and out of winter, ABA application to defoliate, e.g. for new variety rootstock combinations: Black Pearl/Krymsk)
6. *Stone fruit physiology: understand ripening (e.g. why did apricots ripen before Bing in 2023, why did fruit not size)

Insect & Disease Management

Projects in this area needs to consider pesticide resistance management.

1. *Powdery mildew:
 - a. new chemistry (especially for organic producers) and optimum timing (especially late season).
 - b. Same programs/different outcomes: why? (coverage/improper application/resistance/new strains?)
2. Investigate bacterial diseases in sweet cherry (e.g. Eutypa die-back, how to deal with it in young trees, ID bulletin to help field ID esp. when symptoms are similar, BMP to prevent spread, how to best collect samples; chemical control beyond kasumin; rootstock effect on scion, resistant varieties)
3. *MRL's for all markets (expedite the process for fungicides related to mildew management; products of interest include: Vivando, Topguard, Torino, Gatten, Cevya, Luna Experience/Sensation) and/or safe use-case scenarios to broaden the toolbox for mildew control options.
4. *Pseudomonas: how to avoid losing young trees in certain microclimates (e.g. Parkdale).

Labor efficiency

1. Tree architecture and training systems.
2. Automation of orchard tasks as prioritized in the WTFRC 2024-2026 Technology Roadmap (i.e. irrigation.....).

Sustainability

1. Develop a comprehensive Life Cycle Assessment for PNW sweet cherries
 - a. Carbon sequestration on the farm (accounting and budgeting).
 - b. Carbon credits: how to utilize as part of orchard profitability.
 - c. Understanding ESG's (physical farm inputs, economics).
2. *Understand farm input economics (look at everything through an economic lense)

Little cherry disease (LCD) identification, management, and elimination

1. *Optimized or new testing methods for early disease detection (especially on non-fruiting trees in nurseries and during the first years after planting): Research-informed solutions to reduce costs, turn-around time, and improve detection of recent infection (especially for non-symptomatic trees/rootstocks in orchard and nursery settings).
 - a. Methods for rapid, reliable identification of infected trees in orchards and nurseries, building on continued research (e.g. canine detection, artificial noses, physiological indicators).
 - b. How can we deal with false negatives? (e.g. whole plant sampling/detection via volatiles or sensors) Special focus on nursery mother trees and stock, where symptoms do not exist.
 - c. Scouting: ways we can improve/optimize scouting speed (i.e. camera based systems mounted on vehicles etc.).
2. Biology
 - a. Novel approaches to dealing with and living with LCD (e.g. options that prolong the viability of the orchard).
 - b. Determine difference in virulence (e.g. between WA/OR or amongst strains)
 - c. Better understanding of the latency period (non-symptomatic, why are some varieties taking longer to express symptoms?)
 - d. Are there secondary sources of LCD?
3. Leafhoppers/Vectors
 - a. Development of an integrated pest management program for X-disease vectors that can be implemented areawide. (Including options for ground cover management; cost-effective postharvest program that considers SWD resistance mgt.).
 - b. Innovative, sustainable strategies for disease management.
 - c. *Develop dynamic spray program based on the risk of spreading and considering resistance management.
 - d. *Develop a lure for leafhoppers.
 - e. Biological control agents.
 - f. *Titer threshold for X-disease acquisition from trees. Are leafhoppers able to pick up X-disease from low titer sources (low titer trees and weeds)? Do leafhoppers feed enough or differently on weeds to overcome different low titers and acquire phytoplasma? Determine the probability of acquisition from low titer trees, it seems to be >50% from high titer trees.
 - g. Role of weeds in X-disease transmission. Are they contributing pathogens, or just leafhoppers?
4. *Resistance
 - a. Develop resistant or tolerant varieties to ensure productivity, despite presence or risk of X- disease phytoplasma, little cherry virus 1 or 2.
 - b. Screen rootstocks for LCD resistance and for hypersensitivity, especially Krymsk.

Scion breeding program target areas

1. *Powdery mildew resistance
2. Postharvest evaluation

3. *LCD resistance
4. *Stem health
5. Pseudomonas resistance
6. *Late maturing varieties (after Sweetheart)

Technology

Projects that work across several different crops are encouraged. Of special interest are proposals addressing methods assessing labor utilization or for the reduction of manual labor needs in orchards. Please refer to the current Technology Roadmap for more detailed background: <https://treefruitresearch.org/about-us/technology-roadmap/>

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)
- Timeline for pruning based on physiology to develop roadmap for pruning robots.

Please note that while some priorities may not explicitly ask for organic options, we expect **organic practices to be considered in all proposed work when appropriate**. Furthermore, proposals should include an **industry outreach component** if the project outcomes are expected to directly translate into management changes. Given the importance of maintaining profitable and sustainable tree fruit companies, **economic considerations must be integrated into project designs**.

We encourage **novel ideas** beyond the listed priorities. For projects outside the 2026 Request for Proposals (RFP) priorities, please **contact Ines Hanrahan** (hanrahan@treefruitresearch.com) for a discussion before submitting a pre-proposal. WTFRC staff are also available at any time to discuss your ideas, provide feedback, and offer guidance to help you craft a successful proposal.