2023 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.

Fruit Quality (how to achieve better fruit quality in the market)
1. Nutrition and PGR's.
2. Optimum balance of vigor.
3. Determine export ability by variety.
4. Develop SOP of basics on how to grow the best cherries.

Insect & Disease Management
1. Powdery mildew: new chemistries (especially for organic producers) and optimum timing.
2. Spotted wing drosophila (SWD) detection and management.
   a. PNW specific insect biology (source, movement, overwintering, population density spikes and regional differences) and introduction of new technologies to optimize field management.
   b. New chemistries.
   c. Timing of applications.
3. Shot hole/leaf spot (especially in the Willamette Valley): develop comprehensive treatment programs.

Labor efficiency
1. Tree architecture and training systems.
2. Automation of orchard (i.e. irrigation……).

Sustainability
1. Carbon sequestration on the farm (accounting and budgeting).
2. Carbon credits: how to utilize as part of orchard profitability.
3. Understanding ESG's (physical farm inputs, economics).

Little cherry disease (LCD) identification, management, and elimination
1. Optimized or new testing methods for early disease detection: 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.
   b. Scouting: ways we can improve/optimize scouting speed (i.e. camera based systems mounted on vehicles etc.).
2. Biology
   a. Is there more mildew in LCD infected orchards? (Why)
   b. Can plant nutrition status influence susceptibility to infection?

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).
    b. Innovative, sustainable strategies for disease management.
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 additional target areas
1. Powdery mildew resistance
2. Postharvest evaluation
3. LCD resistance
4. Pseudomonas resistance

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 2023 Request for Proposals (RFP), before submitting a preproposal.