

2019 Pacific Northwest Cherry Research Priorities

Highest priority

Cherry virus disease identification and elimination in order of importance:

- Optimized or new testing methods (reliable, cost effective, fast, non-destructive), especially methods that allow sensing before visible symptoms establish
- Breeding for virus resistance
- Determine types of vectors, monitoring strategies and appropriate control methods
- What is the incubation time?
- How is root grafting occurring and what is the incubation timeframe for transmission?
- Efficient elimination of infected trees
- Determine best replant scenario options

Other areas of high interest

SWD detection and management:

- Area of heightened interest: predicting location, i.e. when SWD is present in the area and populations start building to help guide spray programs (switching from softer to harsher chemistries)
- attract and kill strategies
- Other areas: control strategies, resistance management, & intensity of infestation

Powdery mildew management:

- new chemistries & resistance management
- inoculum testing & strategic control methods

Secondary insect pest management:

- Develop effective communication strategies between meteorologists, entomologists and extension to inform grower community in timely manner of necessary seasonal adjustments to spray program

AgWeatherNet:

- bud hardiness
- models and decision assist systems
- weather forecasting
- data to aid DAS

Organic control of black cherry aphid

Scion breeding program:

- Powdery mildew resistance
- Postharvest evaluation

Soil health & water management:

- Soil/water/plant interactions, especially N & Ca, specifically: How does water and nutrient management affect fruit quality parameters such as firmness? What is the best SOP to produce firm cherries on softer varieties such as Tieton, Lapins, Santana?

Crop load management:

- Physiology of the timing of thinning (mechanical vs. chemical)

Technology projects that work across several different crops are encouraged also. Those projects will be moved into the technology committee. Specifically:

- Automation of pruning, thinning, harvest
 - o Long term strategy: investigate the physiology of pedicel detachment, i.e. how can we remove cherries from trees with the stem attached to the fruit
- High density systems for automation
- Non-destructive crop stress modeling
- Automated insect monitoring

Novel ideas in areas not listed as high priority are encouraged. It is suggested to contact Ines Hanrahan before submitting a preproposal to discuss any ideas outside of the priorities identified by the RFP.