

Horticulture 2019

73rd Lake Chelan Horticulture Day Wrap Up

DuPont gives updates on Tree Fruit Extension website, welcomes Hort Day attendees



Photos by Diana Piñon
Richard Heimark and Molly Oswald of Chelan High School Future Farmer's of America (FFA) welcomed the attendees and thanked them for their attendance at the 73rd Lake Chelan Horticultural meeting. RIGHT: Tianna DuPont of WSU Research and Extension Center.

By DIANA PIÑON
 STAFF WRITER

CHELAN – Tree Fruit Extension specialist Tianna DuPont of WSU Research and Extension Center welcomed all attendees to the 73rd Annual Lake Chelan Horticultural meeting on Jan. 21 at Chelan High School's Performance

Arts Center (PAC).

DuPont, was the event's moderator and had a couple of announcements for the public, before commencing with the day's array of presentations.

She went over the updates on the Tree Fruit Extension website which now includes new information all the time. On the website growers can



access the new and updated version of the Crop Protection Guide, which DuPont is excited about. Coming up March 12 and 13, is Cherry Fruit School. "Registration is now available and ready to go," said DuPont. DuPont took a moment to thank all the event's sponsors and vendors.

Molly Oswald and Richard Heimark of Chelan High School Future Farmer's of America (FFA) also welcomed the attendees and thanked them for their attendance. Heimark also stated that all the monies raised on Hort Day would help FFA and also the scholarships they award to students. DuPont noted that Hort Day is co-sponsored by WSU Extension and Chelan FFA.

Willing to pay more

Study shows consumers prefer fruits with high content of dry matter

By MIKE MALTAIS
 STAFF WRITER

CHELAN – Consumers are willing to pay a higher price for pears containing a higher percentage of dry matter (DM) because those samples were judged significantly more flavorful by a panel of average fruit consumers. That is the conclusion of a study discussed by Sara Serra, a WSU horticulturalist, who performed the fruit analysis with six other associates.

Serra delivered her findings during a presentation at the 73rd annual Lake Chelan Horticultural meeting at Chelan High School last Jan. 21.

The study conducted by Serra, et al was titled: D'Anjou Pear Sorting by Predicting Dry Matter and its Effect on Consumer Preference.

Dry matter (DM) accumulates in fruit in the field when photosynthesis occurs in fruit tree leaves causing photoassimilates to ether the fruit as sugars. The metabolizing sugars produces dry matter that increases during fruit growth on the tree.

Using a new non-destructive method that employs a near-Infrared (NIR) spectrometer together with a device called the Felix F-750 processor that converts raw absorbance values to a single prediction



Photo by Mike Maltais
Sara Serra is a WSU horticulturalist

value, a greater number of fruit samples can be tested in the field in less time than cutting and oven- trying.

The objective was to determine the reliability of a non-destructive tool's capacity to predict dry matter and its application during harvest sorting for more consistent fruit quality categories to test for consumer preference and eating quality.

The experimental orchard where the study was conducted was one planted in Cashmere in 1998. The pear cultivar was D'Anjou from OHF 87 rootstocks planted in a density of 14 feet x 8 feet at 389 trees per acre. A central leader training system was used with pruning treatments

of fall, winter, fall+summer and winter+summer.

Dry matter analysis was conducted one month after harvest and the consumer test following five months of storage. The researchers recruited 70-120 pear consumers who each sampled one-eighth of a pear cut immediately in the presence of the panel. Panel members were asked to judge their samples in nine categories:

- Appearance
- Aroma
- Firmness
- Crunchiness
- Juiciness
- Sweetness
- Bitterness
- Pear flavor
- Overall liking

The panel's resulting willingness to pay (WTP) was a base rate: \$1.36 pound, premium bid: \$1.73 pound, discount bid: \$0.99 pound.

Among the conclusions reached from the study was that lower dry matter percentage classes tended to have smaller-sized fruit, lower soluble solids content (SSC), and higher Index of absorbance difference (IAD). These findings reflect the difference in fruit exposure to light and ripening variability in the canopy, according to a graphic Serra used to explain test results.

"Consumers' perceived juiciness, sweetness, and pear flavor increased with increasing dry matter classes," the study concluded. "Consumers were willing to pay more for higher DM pears."

Managing Little Cherry Virus

By DIANA PIÑON
 STAFF WRITER

CHELAN – The Little Cherry disease has become more prevalent in our region in the last couple of years. Due to this, Orchard Program Lead Hannah Walters of Stemilt Growers has been able to find a successful way to stop the spread in the orchards.

Walters explained that Stemilt has been looking at the Little Cherry Virus and trying to manage it for three years now.

Based on research done around the state from September 2017 to October 2018 it was determined that there are two diseases found; Little Cherry Virus (LChV-1, LChV-2) and Western X (WX).

For LChV-1 the total samples tested were 441 and only 1.12 percent of those were positive for the virus. However, 14.58 percent of the orchards tested for LChV-2 were positive, the WX virus has an even bigger positive result with 24.46 percent.

"This is an underestimate of what is actually out here ... this just gives an idea that it is out there and it is becoming a problem," said Walters.

In Okanogan, Chelan and Grant counties, LChV-2 is more common than WX, however in Yakima, Benton and Franklin counties, the majority of the virus found was WX.

Little Cherry disease causes small unripe cherries, "they are not the normal looking cherries ... you can get clusters or whole branches," described Walters.

She stated that both LCV and WX have very similar symptoms which makes it harder to tell each virus apart. With whole tree infections, the tree has small cherries or it can have single cluster batches.

"It infects all varieties, you are going to have slightly different looks between varieties. Rainier is typically small, they do not blush and they are slightly pointed," said Walters.

The best time to scout for the



Photo courtesy of Hannah Walters

Many factors and decisions go into tree removal or block removal.

virus according to Walters is usually one to two weeks before harvest. While scouting for cherries that don't size and often lack color, clusters to whole tree infections, infected cherries will also taste bland or

bitter.

"If you come across a tree that is just fruit and there's no obvious reason why that fruit is small, it should be a suspect tree in your mind," Walters added.

Little Cherry Virus can be spread by the Mealy bug and infected graft wood. Western X is infected by the Leaf hopper and by graft wood. "Both of these can be infected by root grafting, it can pass the virus from one tree to another that way."

Dr. Andrea Bixby-Brosi tested several ways to control the Mealy bug, one of them included the delayed dormant sprays with Lorsban and oil. For the Leaf Hoppers it is best to target the late population during the peak after cherry harvest.

The other control is getting out there and scouting your



Photo by Diana Piñon
Hannah Walters of Stemilt Growers presented the Little Cherry Virus and Western X.

SEE CHERRY VIRUS ON PAGE B4

New FMSA and Produce Safety Rules take effect this year

By MIKE MALTAIS
 STAFF WRITER

CHELAN – The Food Safety Modernization Act (FSMA), signed into law by President Barack Obama in 2011, represents the most sweeping reform of U.S. food safety laws in more than half a century. As a result of FSMA, some on-farm inspections for produce safety will begin on Jan. 28 this year for small businesses.

Faith Critzer, WSU Food Safety Specialist was on hand at the Lake Chelan Horticultural Meeting to explain the components of FSMA and offer advice to produce growers who need to comply with the new guidelines.

Title 21, Part 112 of the Code of Federal Regulations of the Produce Safety Rule (PSR) deals with standards for growing, harvesting, packing and holding produce for human consumption with the overall goal of reducing the amount of foodborne illness from food contamination.

Compliance dates for PSR take effect on different dates for different categories. Those include General Provisions, Water-related Provisions,

Qualified Exemption Labeling Requirement, Record Retention to Support Qualified Exemption, and Written Assurances for Commercial Processing. Depending upon the size of the operation based on annual sales, compliance dates range from January 2019 (General Provisions) to January 2024 (Water-related Provisions).

There are two categories that growers may fall into if their farm does not have to comply with the full PSR requirements. Farms excluded from all requirements and farms that are exempt from certain requirements. Those excluded include all produce grown that is rarely consumed raw; annual produce sales under \$25,000; and all produce grown for personal consumption.

Exempt produce is all produce grown that receives a kill step and produce sales to qualified end users.

The FMSA includes mandatory training for applicable farm operations.

"One person from each farm has to take what we call the Produce Safety Alliance curriculum," said Critzer who recommended that farms have a second person also take the

mandatory classes to provide a backup if needed.

Critzer said Washington state has been one of the most proactive states for training with 60-plus training sessions already held. She displayed a roster of sites and dates where 2019 training courses will be held.

The 2019 subsidized eight-hour classes cost \$25 for WSTRA sessions and \$35 for those by WSU.

PSA courses are scheduled for:
 Wenatchee (WSTRA) Feb. 12
 Yakima (WSTRA) Feb. 13
 Anacortes (WSU) Feb. 19
 March 5 (WSTRA) March 6 (Spanish)
 Yakima (WSTRA) March 6 (Spanish)
 Richland (WSU) March 6 (Spanish)
 Yakima (WSTFA) April 11 (Spanish)
 Wenatchee (WSTFA) April 12 (Spanish)
 Yakima (WSTRA) May 2
 Wenatchee (WSTRA) May 3

The WSTRA contacts are Emily Allwardt, at 509-452-8555 or email emily@wstra.org, and Joanne Thomas, 509-665-9641 or email joanne@wstra.org.

Critzer recommended signing up for the classes this year since there is no guarantee that future classes will be subsidized. In that event, training will jump to \$150 to \$180 per person.

Another aspect of FMSA is

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Washington Tree Fruit Research Commission celebrating 50 years of service

By MIKE MALTAIS
STAFF WRITER

CHELAN – More than a half century ago in the 1960s, a pair of tree fruit industry leaders, Grady Auvil and Tom Mathison identified a need for applied research to support Washington State tree fruit production, particularly with the growth of automated harvest technology. Their efforts resulted in the creation of the Washington Tree Fruit Research Commission.

"Even 50 years ago growers were feeling the pinch that it was too expensive and costing too much to harvest their fruit," said WTFRC staff member Tory Schmidt. "Here we are 50 years later and we're still plugging away at it," Schmidt said of me-

chanical harvesting advances, "and we're pretty close to having some machines available for use in the tree fruit industry."

Schmidt spoke at the 73rd annual Lake Chelan Horticultural Meeting at Chelan High School last Jan. 21 and took his audience down memory lane with a review of some of the high points of the organizations half-century of accomplishments.

In 1969 the Washington legislature enacted RCW 15.26, the Tree Fruit Research Act and established the Washington Tree Fruit Research Commission (WTFRC) to promote research to benefit the planting, harvesting, handling, processing and shipment of tree fruit in the state.

In 1995 the WTFRC Internal Program began operations at the former Washington Department of Health

pesticide residue lab in Wenatchee. In 1999 WTFRC relocated its administration operations from Hood River, Oregon, to the Wenatchee site.

"The WTFRC has had only four leaders in its 50-year history," Schmidt said.

The first WTFRC employee and its original commissioner was George Ing who served 30 years in his position from 1969-1999 developing the organizational structure and creating relationships with the research community.

Jim McFerson took over for Ing in 1999 and through 2016, expanded the internal program, created a strategic roadmap, and built on relationships with university and federal research efforts.

Mike Willett came on board in 2016 and for the next two years helped WT-

FRC through its transitional period, improving policy and procedures in areas of budgeting and regulatory compliance.

Ines Hanrahan took the reins in 2018 with a focus on delivering science-based solutions to issues facing the tree fruit industry. Hanrahan is supported by a staff including Schmidt, Mike Willett, Kathy Coffey (admin manager), Mackenzie Perault (research), Geraldo Garcia (spray specialist), Mano Mendoza (technician), Sandy Stone (data management), and Rob Curtis (project manager).

Current WTFRC commissioners representing nine districts are Jim Doornink, Tom Butler, Jeff Cleveringa, Harold Schell, Brent Milne, Dena Ybarra, Teah Smith, Jake Gutzwiller, and Sam Godwin.

The WTFRC has promoted an internship program for the past decade that has seen participation of some 70 interns from more than 20 countries.

"Most of our field labor and fruit corps working in the field and the lab have been interns," Schmidt said.

Key WTFRC functions include research funding toward which it has applied some \$120 million since 1969 to support more than 800 projects in apple, cherry, pear, soft fruit and technology. An arm of WTFRC research has included investment in research orchards and facilities and seed funding for scientists, fruit schools, and conferences.

WTFRC industry outreach and leadership has involved work with partners such as the WSU Endowment Advisory Committee (EAC), Washington

Apple Commission (WAC), Northwest Horticultural Council (NHC) and others to represent industry interests from a science-based perspective and provide expertise and resource to state growers and packers.

Among the benefits of WTFRC research is a \$2.1 million invested into codling moth mating disruption a treatment that now applies to 90 percent of state apple acreage. The commission invested \$2.2 million to extend the sales season for most fruit varieties, reduce scald losses, improve eating quality and facilitate shipping to distant markets.

WTFRC invested \$700,000 in the development of line Sulphur chemical bloom thinning now used on two-thirds of state apple acreage. The process reduces biennial bearing and post-bloom thinner while delivering more reliable results

Keeping psylla in check - its been around for almost 100 years

By DIANA PIÑON
STAFF WRITER

CHELAN – For all those pear growers out there, Louis Nottingham of WSU TFREC presented on the products and programs which keep pear psylla

in check with high efficiency at the 73rd annual Lake Chelan Horticultural Meeting at Chelan High School Jan. 21

Nottingham went over the background of the pest and why growers are still dealing with it after nearly a century of having

it around.

First he explained the life cycle of pear psylla. "Right now in the overwinter stage, we have overwinter adults, some of them have remained in the orchard and some of them have left," he said.

"In the fall they all kind of mix together ... the population you have now it is not the population you are going to start with in the spring," Nottingham added.

In February and March psylla start moving back into the orchards and this is a long recolonization period which can be hard to manage. "Once they start establishing in April, we start seeing summer generations take off ... we have three to four summer generations of psylla in this area," he explained.

The big deal with the pear psylla is the honeydew increase.

The psylla constantly suck tree's juices, producing the honeydew which then drips on the leaves, and the fruit and it causing injury.

"The injury can come in different forms ... it creates this sticky unpleasant working environment which is not fun to be in and we are seeing labor costs increase because of this," said Nottingham.

The Wenatchee Valley is dealing with a monoculture of pears, this makes the perfect place for pear psylla to be present in high densities. "The way we manage these blocks is done in very small scales ... this makes it very difficult to control psylla," he said.

Pear psylla is regulated by natural enemies, however when growers try to get rid of the high overwintering population by spraying, they kill the natural enemies. Which means that early in the season natural enemies are not present and high number of psylla are spotted. Towards the end of the season those natural enemies come back, yet at that point psylla numbers have decreased.

Nottingham was able to share with the attendees a couple of strategies for managing psylla in the early season. "We looked at quite a few early season application of adulticides and one of the examples we looked at was Bexar and Malathion," he said. The two products kill everything and have pretty effective results on adult psylla invasion. This is known as the conventional method.

According to Nottingham, the best way to get rid of a high psylla population is by the delayed dormant sprays. He also recommends to spray two times when it comes down to Esteem. Spray at a delayed dormant and



Photo provided by L. Nottingham
Summer generations of pear psylla produce higher amounts of honeydew causing an array of injuries.

then around popcorn time. Nottingham mentioned other suppressions sprays to help with the early season management which include lime-sulfur, Cinerite and oil.

Repellents are another resource, Nottingham and the team are looking at. Surround (kaolin clay) being one of them. Such repellent is sprayed on the trees. Another repellent that has not yet been used on pears but Nottingham is looking into it is reflective plastic mulch.

Reflective plastic mulch can be effective because as, he explains psylla and other insects avoid direct contact with the light. Yet, the mulch that surrounds the plant reflects back a lot of light and gets rid of any shade.

An experiment was done to test each managing strategy, it was found that surround and reflective mulch are as effective as the conventional program. In terms of the psylla eggs they were also able to get even numbers all around.

In summary, two sprays of surround are necessary in delayed dormant or dormant.

Allwardt and Thomas are also the contact persons for the WSTFA Water Testing Workshops scheduled for May 8 in Yakima and May 10 in Wenatchee.

The WSU contact is Cathy Blood at email blood@wsu.edu or http://foodsafety.wsu.edu/training-programs/psagtanttt/.

The FDA has created topic-specific guidance documents to help firms with compliance.

The Washington State Department of Agriculture (WSDA) offers free, educational on-farm assessments personalized to your farm and practices. The reviews are no cost to the grower and will include WSDA staff and additional subject matter experts from WSU and WTFRC at the request of the grower.

For more information on

Nottingham stated they will continue to look into the reflective mulch.

Moving into the mid-season things get simpler said Nottingham, "the middle of the season this is the really important time to letting out natural enemies to build."

A good way to start is with mating disruptions for codling moth. He mentioned that growers need to reduce the need for the big guns, and start using softer sprays of oils and Intrepid, which will conserve the natural enemies.

To deal with pear psylla during mid-season, Nottingham suggests "multiple consecutive sprays based on softer materials," such as Azadirect/Neemix, Diatomaceous Earth, Cinerite, oil, Rosemary, Esteem, Centaur.

In the late season, short interval sprays of soft/organic products are advised, plus tree wash. "This can be a really important part of the program ... you want at least one to three hours of leaves dripping and you do not do this until July. This helps tolerate higher numbers of psylla." This can lead to saving money and having to spray fewer times, and also allows for more food for natural enemies. It also helps with mites and removes particle films.

"All of these things will lead to having a high natural enemy population throughout the valley, throughout the growing region which will make it easier to control year after year," said Nottingham.

Keep up with Nottingham's work by visiting the website www.treefruit.wsu.edu/crop-protection/insects-mite-pests/. Subscribe to the Fruit Matters newsletter or contact him directly Louis.Nottingham@wsu.edu.

how to arrange an On-Farm Readiness Review, contact Karen Ullmann at 206-714-6125, email kullmann@agr.wa.gov.

Critzer suggested that producers stay engaged with agencies that can provide guidance and updates on the new food safety regulations, workshop schedules, fact sheets and resource links.

Recommended resources include: WSDA Produce Safety Program: <https://agr.wa.gov/FoodAnimal/ProduceSafety/default.aspx>.

Washington State Tree Fruit Association: <https://wstfa.org>.

WSU Produce Safety: foodsafety.wsu.edu.

Fruit matters: <http://treefruit.wsu.edu/fruit-matters/>.

Critzer can be contacted at 509-786-9203 or email faith.critzer@wsu.edu.

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water contamination related to produce and the FDA is still wrestling on the implementation of water quality testing. Toward that end the FDA extended water compliance standards while it refines testing requirements. In order to address questions about the practical implementation of compliance provisions while reducing regulatory burdens and increasing flexibility to meet policy goals, water compliance dates have been extended as follows:

Businesses with sales of \$500,000 or greater:

Jan. 26, 2022

Businesses with sales from \$250,000-\$500,000: Jan. 26, 2023

Businesses with sales from \$25,000 - \$250,000: Jan. 26, 2024

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A preview of the Canadian cherry breeding program

By DIANA PIÑON
STAFF WRITER

CHELAN – All the way from Canada came Business Development Manager of Summerland Varieties Corp. Nick Ibuki to preview what is coming down the pipeline in the cherry industry.

“Basically what we do is we help protect the varieties for the owners and then distribute and manage them around the world,” said Ibuki as he described Summerland.

Summerland has two main

systems to commercialize and release new varieties. They are open and club varieties which collect royalty to support further research and development of new varieties.

An open variety is available to all growers around the world. “When growers purchase these trees from the nursery, they must pay a tree royalty and sign a grower agreement.”

However, when it comes to club varieties, only a select group of growers have access to it. “We are looking for those perpetual royalties that help support the breeding program, our program

is publicly founded,” the royalties then help with the long term stability of Summerland. “The varieties as they are released in the future-all of them are club,” said Ibuki.

The majority of the varieties Ibuki talked about are currently “test” varieties and are not for sale. Yet, “some of them are open varieties that have been released in the last couple of years and some I’m not familiar with,” he said.

Ibuki began talking about the Suite Note™ cherry, which was released a couple years ago. He described it as a large

size cherry, with excellent attributes. “Very crisp.” However, the Suite Note™ is non-self-fertile which can bring some challenges to the table. “You have to make sure you have good pollination,” Ibuki mentioned. This cherry variety is also “split sensitive and you tend to pick it four days before Bing time.”

The Suite Note™ is the only variety that is available commercially at the moment.

Another large cherry is the Summerland 1, which typically is ready one day before Bing timing. “This one here is

number one in self-fertile, it is very productive and this type of tree is very loaded every year,” explained Ibuki. Summerland 1 has much lower splits. “When we look at return per acre for the grower, this one has a lot of potential for us.”

Ibuki’s personal favorite cherry variety, eating wise, is the SPC342. The non-self-fertile cherry averages 12.1 grams per fruit weight. It’s texture and taste stands out from the rest. “It has really nice crunch when you bite into it,” described Ibuki. This particular cherry is also number one in terms of

stem retention.

According to Ibuki, “Summerland 2 is more of a sweet cherry...it is a high sweet/tart ratio.” The Summerland 2 is in fact very similar in taste to a Rainer cherry, however it has a few challenges for the growers. Storage being one of them. Summerland 2 is good for eating and is a large fruit.

Other varieties they are working on perfecting are: BF-9, Summerland 3, Summerland 4, Summerland 5, Sovereign™, and Summerland 6. www.summerlandvarieties.com for more information.

WTFRC invests in chemical fruit blossom thinning techniques

By MIKE MALTAIS
STAFF WRITER

CHELAN – Fruit tree bloom thinning has come a long way in the past half century, thanks in large part to the Washington Tree Fruit Research Commission (WTFRC) and its continuous quest to innovate new and better ways to maximize bloom thinning results.

WTFRC project manager Tory Schmidt discussed the latest thinning techniques during a presentation at the 73rd annual Lake Chelan Horticultural meeting. Schmidt delivered a graphic-supported history of thinning practices since the 1950s.

For 30 years, from the 1950s through the 1980s, Elgetol (DNOC) was the standard bloom thinner for the western U.S. but it was prone to phytotoxicity and overthinning when re-wetted.

“How many folks here remember the good old days of Elgetol,” asked Schmidt as many in the audience raised hands. “Hopefully you’ve got the yellow washed out of your hair and off your dog by now,” Schmidt said of the way the product turned everything yellow.

Elgetol was removed from the market by the Environmental Protection Agency (EPA) in 1990 for lack of supporting data.

Wilthin (sulfcarbamide) and Thonex (pelargonic acid) registered as bloom thinners in the early 1990’s proved to be inconsistent performers and

frequently left marks on fruit.

In the mid-1990s ATS (ammonium thiosulfate) demonstrated some benefit but was not registered for thinning.

In the late 1990s the WTFRC began to invest significantly in chemical thinning research. Initial trials focused on ATS,

Wilthin, and Thonex and in 1999 initial trials with lime Sulfur and fish products began.

Lime sulfur showed promise at research focused on rates, timings, alternative oil formulations, and other materials.

In 2003 Pest Management Northwest was granted 24C

registration for thinning with Rex Line Sulfur.

In the mid to late 2000s ThinRite (endothall) proved to be mildly effective in trials and was granted registration. In the 2010s the pollen tube model improved spray timing as more effort was applied to post-bloom thinning.

Over the years WTFRC funding supported research at Penn State, WSU, and NC State in the physiology of chemical thinners; Ag Canada, Idaho, and Arkansas for screening of new thinning chemistries; Virginia Tech, UMass, and Cornell on predictive models to improve thinning;

Purdue for thinner effects on floral initiation, and Michigan State for thinner effects on gene expansion. In the past 20 years, WTFRC has replicated more than 320 thinner trials at more than 110 trial sites in the state on more than 80 bloom thinners on 13 apple cultivars.

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CHERRY VIRUS

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orchard. Walters explained that there can be a delay in seeing symptoms after the infections begin for up to five years.

"What we have been doing every year is scouting on foot, all of our acres ... it's a brilliant and effective way to get out on foot and look at your trees," she said.

When scouting, the team looked for hot spots which then were marked with a flagging tape and ID numbers. The marked

trees were then pin-pointed on a GPS making it easier to revisit the tree year to year.

There are two ways to sample trees. The first method can be done during the summer time in which you just pull out leaves from the tree. "You typically find a tree you want to test, you want to pull out 10 leaves from the tree. If you see a cluster of fruit try picking out a couple leaves near it which will help to identify the infection."

Winter sampling can also be done, however Walters doesn't prefer this method because it

takes longer to process in the lab. RPA kits were used by Stemilt to test their trees, within two hours the tree results were known.

If results are positive then you must remove the tree or the whole orchard, however many factors and decision go into such decision. Walters suggested to ask yourself the following question before making a final decision;

- Is the block making money?
- Age of trees and productivity
- Market timing and fruit quality
- Are there infected orchards

around?

- Replant options (apples, pears or cherries)

To remove a single tree or whole orchard you must roundup each tree, spray, remove all roots, fumigate and try and avoid planting cherries right away, if the threat comes from surrounding blocks.

More information on Little Cherry Disease is available online at www.treefruit.wsu.edu/crop-protection/disease-management/little-cherry-disease/.



Photo courtesy of Hannah Walters

Infected tree spread by Mealy bug.



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