

Material to sample

Submit four five-inch cuttings from the diseased limb(s) including leaves, and **FRUIT STEMS**.



Where to sample

Trees with symptoms: Sample from symptomatic limbs.

Trees with no symptoms: Sample from each leader.

*Samples only needed in non-confirmed blocks/ adjoining trees. See flow chart.



When to sample

The week before harvest to mid-August.

Sample condition

Keep tissue cool (can use cold pack to keep sample cool, but not in direct contact). Old or dried tissue is more likely to have false negatives.

Where to send samples

See <http://treefruit.wsu.edu/labs-lchv2-xdp/>

for an up-to-date listing of labs.

X-disease Phytoplasma & Little Cherry Virus Scouting & Sampling

X-disease phytoplasma or Little cherry virus has NOT been confirmed in block.

1. Scout teams walk blocks and mark suspect trees. Walk every row, look at every tree. Look at both sides of trees (e.g scout on each side). Lead scout inspects suspect trees and designates symptomatic trees for sampling.

2a. Samples sent to lab.

2b. Positive trees are removed.

3. Herbicide applied via notch or cut stump method.

4. Trees with herbicide injury removed.

5. Adjacent trees sampled.

6. Samples sent to lab.

7. Positive trees removed. If more than 20% remove whole block.

3. (Organic) Trees adjacent and 1 out from symptomatic trees sampled.

4. Samples sent to lab.

5. Positive trees removed. If more than 20% remove whole block.

X-disease phytoplasma or Little cherry virus HAS been confirmed in block.

1. Scout teams walk blocks and mark suspect trees. Walk every row, look at every tree. Look at both sides of trees (e.g scout on each side). Lead scout inspects suspect trees and designates symptomatic trees for removal.

2. Symptomatic trees are removed.

3. Herbicide applied via notch or cut stump method.

4. Trees with herbicide injury removed.

5. Adjacent trees sampled.

6. Samples sent to lab.

7. Positive trees removed. If more than 20% remove whole block.

3. (Organic) Trees adjacent and 1 out from symptomatic trees sampled.

4. Samples sent to lab.

5. Positive trees removed. If more than 20% remove whole block.

Example Zirkle



Teah Smith and her crew scout in teams. Teams scout with one person on each side of the tree on four-wheelers in low gear looking at every tree. They flag trees with flagging tape that is labeled numerically and alphabetically (i.e., Sample 22 is positive so the 8 trees around it are labeled as 22A, 22B, 22C). They remove positive trees and sample from adjoining trees. If adjoining trees are positive, they are removed, and the next tree out sampled until trees are all negative. They remove trees by pulling trees out so that as many roots as possible are removed. In general if more than 20-30% percentage of the block is infected or has been removed due to X Phytoplasma the entire block is removed.

Example GS Long

Garrett Bishop and his group focus on spots identified by growers or fieldmen and then randomly scout at least 25% of entire block. Using quads in low gear (about 3 miles per hour) they look at the whole tree when scouting and sampling, especially concentrating on both small limbs off the main scaffold and the lower section of the tree that often seem to be symptomatic. The growers GS Long scout for remove trees using either the cut stump or notch (drill) herbicide method.



Example Goldy

Dale Goldy's scouts walk the block in the week before harvest. They find there are too many false negatives when scouting is done earlier. They look at every tree. "We want to find **new** outbreaks so we have to look at every tree." They remove symptomatic/ positive trees by first drilling and applying herbicide in holes and then cutting out dead trees. They find that timing for herbicide application is important. Trees treated in Aug die quickly. If more than 20% is affected they remove the entire block.

For more information

treefruit.wsu.edu/crop-protection/disease-management/western-x/



<http://treefruit.wsu.edu/crop-protection/disease-management/little-cherry-disease/>

pnwhandbooks.org/plantdisease/host-disease/cherry-prunus-spp-x-disease

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Example Stemilt



Hannah Walter's group works in teams with a lead scout. Scouts GPS tag and flag symptomatic trees. They send in a portion of symptomatic trees for laboratory confirmation to check accuracy for new scouts. For example, if they flag 20 trees, they send in samples for 10. If all 10 come back positive they remove all 20

flagged trees. For removal they use either the herbicide painted cut stump or "notch" drill and inject herbicide method. Walters says "We are finding X scattered randomly in blocks vs hot spots so it is important to look at all trees in a block." They consider age of trees and economics of block when deciding whether to remove a whole block.

Scouting and Sampling for X-disease Phytoplasma & Little Cherry Virus



WSU Tree Fruit
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