Cherry whole orchard recycling: Investigating fruiting bodies viability of cherry fungal pathogens

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California Cherry Board





Context of the study – cherry WOR





What is Whole Orchard Recycling (WOR) ..?





Objective 1: Whole cherry orchard recycling survey



With promising results from almond orchard recycling

Survey to see if cherry growers would be willing to adopt WOR as an alternative: understand what growers foresee as limitation to such practice in cherry orchard systems!



Cherry canker diseases: Could they affect my new orchard ..?

• Common in older cherry orchards





Cherry canker diseases: Disease symptoms





Calosphaeria pulchella

Leucostoma persoonii Syn.= Cytospora

Eutypa lata



Calosphaeria canker: Disease signs





Cytospora canker: Disease signs





Cherry canker diseases: Could they affect my new orchard ..?

• Common in older cherry orchards



Calosphaeria, Cytospora,



Investigation into the survivability of fungal pathogen survival in fruiting bodies still present in wood chips incorporated during orchard recycling.





Viability of fungal pathogen survival in fruiting bodies





Viability of fungal pathogen survival in fruiting bodies



Verify if shredding and incorporating the diseased branches with cankers between tree rows could increase fungal spore dispersal in the orchard.





Glass microscope slide spore trapping





<u>Cherry pruning and shredding of dead branches:</u> <u>San Joaquin County</u>



University of California Agriculture and Natural Resources

Cherry pruning and shredding of dead branches:

Kern County



<u>Cherry pruning and shredding of dead branches:</u> <u>San Joaquin County</u>



Week/Fungus



Cherry pruning and shredding of dead branches:

Kern County



<u>Cherry pruning and shredding of dead</u> <u>branches= San Joaquin County</u>



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Objective 3: -

- Evaluation of the WOR soil properties
- Assess the impacts of different N treatments on first year cherry trees growth in the WOR plot in Linden



Walnut WOR_Treatments







Objective 3: To examine soil organic matter (SOM) and stored carbon (C) after whole orchard recycling, by conducting soil surveys annually.

Can we return this organic matter (OM) to our orchard soils without negatively effecting the next orchard that will be planted?

 Here in this preliminary study, we would like to examine soil organic matter (SOM) and stored carbon (C) after whole orchard recycling, by conducting soil surveys annually





Evaluation of the WOR soil properties







Different N treatments on first year cherry trees growth



*UC common cherry guidelines: 10-20 lbs of fertilizer N, depending on soil residual.



Different N treatments on first year cherry trees growth





Different N treatments on first year cherry trees growth





Thank you!



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Questions..?

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