tree and vine notes

UC COOPERATIVE EXTENSION
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COLD, WET FEET (Norton)

I have looked at some orchards that look chlorotic (light green or yellowish) and the leaves are slow to expand. From a distance, the trees look "stressed" and nutrient deficient. I believe this to be due to root systems that are too cold and wet to function properly. In many cases, the problem is probably made worse by crown or root rot.

The emerging leaves and shoots are strong sinks for nutrients and water but the root system is unable to function because of the cold, wet conditions. Foliar nutrients can green up a tree and make it look a little better but the underlying problem is unchanged. The only thing we can do is hope for dry weather. If frost is not a concern, tall weeds will help dry out the orchard so don't disc them in. Most orchards and vineyards are too wet underneath for cultivation anyway and doing so will destroy soil structure.

Some orchards and vineyards are showing what looks like iron deficiency. This too is due to excessive moisture. These symptoms will disappear when the soil profile dries out. Foliar nutrient sprays will temporarily green up the trees until conditions improve.

What worries me more is what happens when hot weather arrives. If a tree suddenly appears stressed and/or collapses when warm weather arrives, it is almost always due to root rot. Trees that died around bloom time probably succumbed to bacterial canker.

Trees with moderate root rot symptoms can be treated with Aliette or Ridomil. Severely affected trees that have collapsed are usually beyond saving.

For these fungicides to work, a large portion of the root system needs to be treated, not just a few surface roots. Young trees are most commonly treated. Contact your licensed pest control advisor for application rates and handling instructions.

DON’T HURRY TO IRRIGATE (Norton)

When the irrigation districts first started filling the canals I was shocked to see some growers irrigating. Other than irrigating for frost control, having water in the canals does not constitute cause for irrigating. In most cases you will be doing more harm than good. On most soils, the root system is too wet and needs a chance dry out. You don’t need to let them dry to point of water stress but roots need oxygen as well as water.

Decisions to irrigate should be based on the soil moisture levels the entire depth of the root system. Use a hand soil auger or probe to feel the soil. We have charts that show how to estimate the moisture level of different soils. Tensiometers, gypsum blocks and other devices can aid you in monitoring soil water depletion. We have dozens of publications on irrigation scheduling. Drop by any Cooperative Extension office and look them over.

BACTERIAL BLAST & BROWN ROT (Norton)

Again we have observed some severe bacterial canker and bacterial blast. Both diseases are caused by the bacteria Pseudomonas syringae. The canker phase damages branches, limbs and trunks and can kill the whole tree. The blast phase kills buds, flowers and shoots. The bacteria grows rapidly under low temperatures and usually stops when warm weather arrives. In some orchards, the blast is severe enough to reduce the crop. I observed a young orchard where about 20% of the trees were killed.

The worst part about this disease is there are no treatments that are very effective. Soil fumigation and crop rotation are the most important management tools.

Ring nematode is often associated with the disease and anything we can do to reduce its numbers will help. Fallowing or rotating to a non-orchard crop for a few years is the most

effective tool of all. In some locations, avoiding Nemaguard or plum rootstock helps. Many growers have observed that pruning after bud break and applying two copper sprays seems to help.

Bacterial canker is not spread by pruning tools like fire blight does. There is no immediate need to prune out infected wood because once the disease stops in the spring it does not resume in the fall. If you are in a location that is affected most years, you can leave extra fruit wood to compensate for some being lost. This may result in extra thinning costs in some years.

In a few cases, blossom death has been due to brown rot. Brown rot is, of course, controlled with fungicide sprays beginning at pink bud in peaches & almonds and continuing until all the flower parts have fallen off. Because of the amount of rain we have had during bloom, I think there is greater potential for incipient brown rot. This is where the flower is infected but the fungus the does not damage the flower itself. The subsequent fruit has the fungus inside it and appears healthy until the fruit begins ripening (color break). As maturity approaches, the fruit begins to rot for no apparent reason. All the manager can do is attempt to prevent the brown rot from spreading to adjacent fruit. At color break, begin scouting carefully for any sign of brown rot and be prepared to act accordingly.

FIREBLIGHT (Norton)

The spring rains have had all of us worried about fire blight in apples. Even though we have had several infection periods for apple scab which we should have treated for, the temperatures have, until recently, been too cold for fire blight infections. Preventative treatments for fire blight should begin when average daily temperatures approach 62F in March, 60F in April and 58F in May. We just started reaching those critical temperatures in the last couple of weeks. In the SJV, fire blight is just as likely to infect new shoots and any tissues damaged by wind or hail, as it is to infect blossoms.

Because of the amount of rain we have had, most growers treated anyway and I can’t blame them.

Bacteria resistance to Streptomycin is a concern for all apple orchards. We now have the ability to manage resistance by alternating with Aliette and the biological control agent Blightban A506. Until we have more experience with these new materials, I would keep Streptomycin as the primary material and alternate one of the other materials into the program.

DOWNEY MILDEW IN GRAPES (Norton)

This could be one of those rare years where we see downey mildew in grapes. Downey mildew (DM) is caused by the fungus Plasmapara viticola and is common in grape growing areas of the world with high humidity during the growing season. DM is rare in the SJV because of our normally low humidity. DM is first observed as small, pale yellow to reddish spots with indefinite borders on the upper leaf surface with white downy growth on the lower surface. Infected leaves are killed and turn brown and may defoliate. Young infected shoots and cluster stems may curl, distort, show thickening of the infected tissue and may be covered with a whitish fungal mass. Infected berries turn brown and eventually shrivel. (Symptoms are from a paper by George Leavitt). Infective spores are produced during rainy periods if temperatures are above 50F and infections are triggered by warm, humid nights followed by rain.

Limited testing has shown a variety of fungicides to reduce infections with a combination spray of copper + Ridomil to be the best so far.

COMING DISTRACTIONS-
ALMOND RUST, SCAB, PEACH SILVER MITE, LEAF HOPPERS (Hendricks)

Almond rust, caused by the fungus *Tranzschelia discolor*, will begin to show in May or June, if the disease follows our wet spring, as expected. This disease makes rusty spots which look very much like iron rust on the under side of leaves, and the tops of the leaves show yellow color to match the rust spot below. Rust can cause severe defoliation. Sulfur is a very effective control if applied before, or at the first sign of rust.

Almond scab, caused by another fungus, *Fusicladium carpophilum*, makes greasy gray spots on the leaves and on the tops of the nuts. These symptoms will usually start showing about mid-June. Control is best done at 2 weeks to 5 weeks after petal fall. There is still some chance to control scab in orchards where scab has been a problem in the past years. Control is very poor if you wait until scab shows in the orchard - scab control is a preventive program based upon past history and weather conditions. Defoliation from scab can be very severe in some orchards, especially in Carmel variety.

Each year we see damage to young almonds in particular, from **peach silver mite**. It usually starts to show in June. Hundreds of these tiny mites can be found on the under side of each leaf in heavily infested almonds. They cause leaf yellowing or silvering, curling margins and tips, scattered necrosis of the leaves, shotholing, and defoliation. They can be very destructive to young trees. Many mature orchards now show a bronzing of the terminal shoot leaves, but it does very little harm to mature trees. The peach silver

mite is very easily overlooked, and its leaf damage can easily be blamed on something else like potassium deficiency. Peach silver mite is easily controlled by wettable sulfur, or by a number of miticides including oils and soaps.

Be sure to carefully identify the causes of foliage symptoms and defoliation now. Next year take measures, if needed, to control these problems.

Leafhoppers cause defoliation in almonds nearly every year. We can see two different leafhoppers in almond. One is the apple leafhopper, *Empoasca maligna* which is yellowish green with white dashes, and the other is the rose leafhopper, *Empoa rosae,* which is yellowish white with dark eyes and tarsal claws. Leafhoppers have two generations per year, but the generation starting now is the one that often damages almonds.

Nonpareil seems to be the least damaged. Ruby, Mission, Monterey and Aldrich seem to be very susceptible to leafhopper damage. Some experienced PCAs tell me that they use counts of 1 nymph per leaf as the spray trigger for Nonpareil and only 1/2 nymph per leaf for more susceptible varieties.

Some insecticides which are reported to control leafhoppers, often when spraying for another targeted and labeled pest are oils and soaps, Omite, Lorsban, malathion, AGRI-MEK, and Imidan. Consult with your PCA for his/her best advice.

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UPCOMING EVENTS & MEETINGS

IPM UPDATE BREAKFASTS

Don't forget the IPM Update breakfasts where we discuss IPM strategies for tree and vine crops. They are held from 7:00 to 8:30A at the Pine Cone Bar & Grill in Merced.
Here are the remaining dates for 1998:
6 May, 17 June, 20 May, 1 July, 3 June, 15 July

AG TECH '98
UC DAVIS
Thursday June 25, 1998, 7:30 am - 3 PM
AG TECH '98 will feature Equipment Demonstrations, Laboratory Tours, Field Presentations, Grower Panels and an Ag Fair.
Information is available at our office or on the internet at
http://agronomy.ucdavis.edu/safs/agtech.htm
This year it is sponsored by Sustainable Ag. Farming Systems (SAFS)
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ALMOND BIOS FIELD DAY
THURSDAY MAY 8, 9 AM - 2 PM
HOPETON FARMS
15185 N. COX FERRY RD., SNELLING
TOPICS:
Costs and profitability of BIOS orchard management
Saving money on seeded cover crops
Flame weeding in orchards
Mid-season check on brush chipping results

Co-sponsored by CAFF and East Merced Resource Conservation District.
For more info call Christi Hansard at EMRCD 723-3714.

NICKELS FIELD DAY
MAY 13, 1998
Agenda

FIELD DAY ON DISEASES AND MITES
Tri-county field day for Merced, Stanislaus and San Joaquin Counties
Date: May 22nd - put this one on your calendar
Location : Superior Fruit Ranch, 4801 E. Whitmore, Ceres. From northbound Hwy. 99: Mitchell exit north about 2 miles, turn right on Whitmore, Superior Fruit Ranch is about 1 mile down on left. From southbound Hwy. 99: Whitmore exit through Ceres all the way to 4801 E. Whitmore. At the time of this printing, the time of meeting has not been established. Please call your local extension office for the time.
Subjects: Hull rot, bacterial canker, mites

WEB PAGES
CA agricultural statistics reports as well as the Weekly Crop and Weather Report are available at: www.nass.usda.gov/ca

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