tree and vine notes

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ALMOND RESEARCH CONFERENCE
DECEMBER 2 AND 3, 1997
DOUBLETREE/MODESTO CENTRE PLAZA
Mark Your Calendars!

ALMOND LEAF SCORCH (Hendricks)

ALMOND LEAF SCORCH, sometimes called "Golden Death" has been positively identified in Atwater this year. Leaf scorch shows as a very bright scorching of the leaf with a yellow or "golden' band showing between the green leaf tissue and the brown tip of the leaf. The infection starts with a small shoot, but slowly will infect the whole tree. Peerless seems to be an indicator variety, and can be infected where other varieties are not. Infected trees can survive for several years, but they may bloom and leaf out slightly later than healthy trees, are stunted, have reduced terminal growth, and are less productive than healthy trees.

Almond leaf scorch is caused by the bacterium, *Xylella fastidiosa* that also causes Pierce's disease in grapes and alfalfa stunt. It is spread by the redheaded and green sharpshooter leafhoppers. Spread is usually from weedy alfalfa and irrigated pastures into almonds and there seems to be very little tree to tree spread. Grassy weeds in alfalfa seem to be a better habitat for the sharpshooters than clean alfalfa.

Many common weeds and riparian plants are hosts, including Bermudagrass, rye, fescues, watergrass, blackberry, and nettle.

Leaf scorch is easily confused with salt burn, but there are important differences. Leaf scorch will usually occur in part of the tree or in single trees. Salt burn occurs in areas of the orchard, in groups of trees, or by variety row such as Mission. Leaf scorch has a narrow golden band in the leaf between the green basal tissue and the

brown tip and the margin of the scorch is quite irregular. Salt burn usually has a distinct and regular margin between the green base and the brown, burnt tip of the leaf.

Almond leaf scorch is more a curiosity than a threat to the industry, but it can cause significant tree losses in individual orchards with a variety such as Peerless. If you see trees which showed these symptoms in 1997, mark the trees and point them out to me. We can watch them in '98 and sample if the symptoms are right for ALS.

YELLOW NUTSEDGE IN ALMONDS (Hendricks)

Yellow nutsedge, or nutgrass, can really be a nuisance at harvest. Several herbicides have some effectiveness in controlling nutsedge, but none are really good. Frequent application is essential with the foliar applied herbicides. If you allow the nutsedge to reach the 5th leaf stage it has produced another nut which will not be killed by the herbicide. And this is any 5th leaf seedling, not an average of 5 leaves on the nutgrass plants!

Spraying is the only good alternative in the sprayed strip. But in the mowed middles, I think the best strategy is -"DON'T FIGHT 'EM, JOIN 'EM"! Nutsedge loves weed-free middles because it is really not a good competitor. Plant a good, dense cover crop this fall, and next summer you will find that there will be much less nutsedge surviving. Over the years you can choke it out with a good cover. Be sure to fertilize your legume cover with sulfur, phosphate and compost or manure. Grasses will tend to dominate if your soil is low in P and S, and high in N.

CHECK YOUR WATER TABLE (Hendricks)

The ground water level rose into the root zone in many orchards last winter. This is especially prevalent in the Hilmar, Delhi, and Stevinson areas. Root damage symptoms can be as mild as off-color foliage, sparseness of the leaf cover and poor growth. More extensive root killing results in yellow foliage. This appears to be the symptom of water stress, which it is, because the roots are not functioning well. In orchards with very extensive root killing, leaf scorch, defoliation, shoot and limb death, and finally tree death are the result. I have seen very few orchards recover well from even the moderate condition where foliage is yellowish and sparse, growth has stopped, and there is some shoot death. This is usually an indication that much of the lower root system is dead.

Orchards in these areas where high water tables are possible should have some type of monitoring devices to check the water table. The irrigation district usually has well logs, which give you some information. But you should develop your own information in your orchard, and in specific areas of your orchard. An auger hole 6' to 10' deep will do if the soil is stable enough that the hole doesn't cave in. Better yet, put a PVC pipe in the hole. Drill holes or cut slots in the pipe, and cap the bottom to

keep mud out. The best is to put pea gravel around the pipe to keep soil from plugging the slots.

Check the water level periodically by using a weighted string, tape measure, or a long stick. This checking will also alert you if the irrigation district pump is shut down or malfunctioning. Damage possibly can be prevented if you have an early warning.

In very general terms, if free water is below 7' to 8' it should not be a problem. Water at 5' to 6' is a real concern, and less than 5' is definitely a problem. Many factors will determine how well your trees will live with a high water table. Some factors are the type of irrigation system used, whether or not the level fluctuates or is stable, the rootstock, soil salinity levels, and original rooting depth of your trees.

CHESTNUTS? (Hendricks)

Over the years there has been sporadic interest in chestnut as a crop for California. The US annually imports about 2 million pounds of chestnuts from Europe at wholesale prices of $2 to $3 per pound. Is this a possible nut crop for California?

A CHESTNUT PRODUCTION SHORT COURSE is being offered at U.C.Davis on Friday and Saturday, October 17 and 18, 1997. This course will feature an expert in chestnut production from the University of Florence Italy as well as several Californians. The cost of this short course is $250. A brochure with information about registration is available from our office.

ALMOND BRUSH CHIP-OFF OCTOBER 22 (Hendricks)

Come out and watch TEN different machines chip or shred almond pruning brush. Brush burning is becoming more difficult every year, and it would be great to incorporate these wasted nutrients back into the soil. But large wood pieces are a problem at harvest and in the hulls. Excess fiber content reduces hull value. The goal is to devise a way to chip/shred brush to gain these benefits while not causing the harvesters and hullers problems.

Roger Duncan, Farm Advisor in Modesto and I have a large project with Hopeton Farms and Lake Shelling to evaluate shredding and chipping. We will have some results to share at this field meeting. The time is 9 a.m. to noon, October 22 at Sultana Farm 1/4 mile south of Magnolia on Sultana west of Atwater. The meeting is sponsored by the BIOS project of CAFF with the help of UCCE.

FALL IRRIGATION IN GRAPES (Norton)

For many vineyards, it has been a few weeks since the last irrigation and in some cases two months may have passed. Where growth has completely stopped and moisture in the top three feet of soil is depleted, a light fall irrigation is recommended. If growth is almost stopped, there is little fear of a resumption of rapid shoot growth. If a vineyard is partially defoliated due to pest damage, water stress, or aggressive mechanical harvesting, you may want to wait till the weather cools. Vineyards that are very vigorous should not be irrigated until the temperatures start to drop. On clay or clay loam soils or soils with limited rooting depth, the irrigation should be only a few inches because we may have a very wet winter which would result in water-logged conditions.

FALL IRRIGATION IN TREE FRUIT (Norton)

After October first I am very reluctant to recommend post-harvest irrigation's in peaches and other stone fruit. The warm days we have enjoyed the last two weeks make us worry about the moisture status of trees but auguring a hole three feet deep is the only way to know for sure.

The biggest concern is crown and root rot from the fungus Phytophthora. Soil temperatures are still warm and water applied now will remain in the root zone for a long time because of the low transpiration rate of the trees and weeds. While sands and loamy sands have the lowest risk for crown and root rot, I have seen this problem on all soils in the valley. Drive around the county where we have clay loam soils and you can see the thousands of trees that are missing due to root rot last fall.

Although unusual, some blocks of trees may start growing again or continue growing vigorously into the late fall. In extreme conditions you may get some fall bloom. Trees that are delayed going into winter rest will accumulate fewer chilling hours than trees that go into rest early. This is a concern in winters where we accumulate fewer chill hours than normal.

FALL IS GOOD TIME TO TREAT NEMATODES (Norton)

For Ring nematode high treatment rates are required. Ring nematode plays a role in bacterial canker complex and is ideally controlled in October. Nemacur 3 is registered for both stone fruit and grapes but must be applied properly and carefully in order to benefit from its use. The ideal method of application is through the drip system. Nemacur can also be applied in a 50% band if the soil is bare and it is immediately incorporated with sprinkler or flood irrigation. Enzone is also registered for stone fruit and grapes and is particularly effective against ring nematode if applied according to the manufacturer's specific instructions. Your licensed pest control advisor can give you detailed use instructions for both materials as well as label rates for the different crops. To enjoy at sustained effect, post-plant nematocides must be re-applied every year.

POTASSIUM IN TREES & VINES (Norton)

In some of our orchards and vineyards, especially prunes, Potassium (K) is frequently deficient. Late fall can be a good time to make soil applications of Potassium sulfate (K_2SO_4) and Potassium chloride (KCl_2). Potassium moves very little in most soils because it readily attaches to the clay particles in the soil. To be taken up by the trees, it must be incorporated well into the root zone. You can shank the material along the drip line or dig a furrow and band the fertilizer in the bottom. It is a common practice to also apply some Ammonium sulfate in the same spot to acidify the soil and flood the exchange sites so the K can stay dissolved in the soil solution a little longer. Never broadcast K fertilizers on the soil surface as most of the K will become bound by the clay particles and very little will be absorbed by the tree. In a non-tilled block with clean, bare soil, a concentrated band on the surface will be partially absorbed if there is a large concentration of roots near the surface, which is the case if sprinkler-irrigated.

KCl_2 is less expensive than K_2SO_4 but can result in Chloride (Cl) toxicity to the trees if the Chlorides are not leached below the root zone.

Fall is a good time to apply KCl_2 because the transpiration rate of the trees is very low and we can use winter rains to leach the Cl out while leaving the immobile K ions in the root zone. If we have a dry winter, early spring irrigations will be needed because it takes approximately 10 inches of water to move the Cl beyond the root zone.

ZINC DEFICIENCY (Norton)

Zinc deficiency is considered to be the second most common deficiency in SJV orchards. Anyone who has sandy soils has probably seen the characteristic symptoms: small, pointed leaves; shoots or spurs with short internodes causing the leaves to form rosettes; and interveinal chlorosis. Leaf margins in peaches become wavy or crinkled. These symptoms usually appear in early spring and can persist all summer. Defoliation may occur in severe situations. A mild deficiency may only produce pale green leaves and lower yields. In very sandy soils you may see these symptoms in combination with those of manganese deficiency.

It is possible to confuse the shortened shoots and spurs, and rosetting with the symptoms of Roundup injury. This is especially true if the herbicide was applied the previous fall. The symptoms can be distinguished so look carefully and consider the history of the block.

Fall zinc sulfate sprays continue to be a very effective method of treating zinc deficiency. Zinc sulfate applied at a rate of 10-15lb/ac from mid-October through the dormant period is very effective. Don't apply this treatment within a few weeks of a dormant oil treatment to avoid phytotoxicity.

FALL CONTROL OF APPLE SCAB (Norton)

Zinc sulfate and urea sprays at about 50% leaf fall in apples can greatly reduce over wintering apple scab. The object is to defoliate the tree and get the leaves to decompose before scab spores can develop in the winter. The urea is applied at 50 to 150lb/acre depending upon the tree row volume and perceived severity of the problem. The zinc sulfate is applied at 20lb/acre. Apple growers still need to monitor weather conditions in the spring using a leaf wetness meter and a mills table to determine the actual amount of disease pressure and whether spring fungicides are warranted.

EL NINO WEB SITES

http://sio.ucsd.edu/supp_groups/siocomm/elnino/elnino.html

http://meteora.ucsd.edu/~pierce/elnino/whatis.html

http://iri.ucsd.edu/hot_nino/

http://www.pmel.noaa.gov/toga-tao/el-nino/home.html

http://wesley.wwb.noaa.gov/eileen/orad/sealevel2.html

http://psbsgi1.nesdis.noaa.gov:8080/NSORS/ML/nsors3.html

http://cwatchwc.ucsd.edu/images/cca.gif

We now have available the new UC Publication *Pesticide Safety: A Reference Manual for Growers.* This booklet has been developed as a resource and study guide for growers who are preparing for the written Private Applicator Certification examination administered through county Agricultural Commissioners' offices.

This 128 page booklet is a sale publication (Publication No. 3383), available at our office for the cost of $7. Come by and pick one up today!

SAN JOAQUIN VALLEY VITICULTURE TECHNICAL GROUP

WEDNESDAY, 12 NOVEMBER 1997

Time: 10:00 TO 1:00

Where: **DiCicco's Restaraunt, I Street near Olive Ave, Madera**

Directions: **Take Hwy. 145 South/Madera Ave. exit as if you were going to the Madera CE office and take two immediate right turns. DiCicco's is across the street from the Vineyard Restaurant.**

Discussion topic: **A comprehensive review of Gibb use in grapes.**

Main speaker: **Fred Jensen, Viticulture Specialist Emeritus. Additional updates from Roger Duncan, Stanislaus County Farm Advisor and Stan Grant, Viticulturalist.**

Reservations: **Maxwell Norton 209/385-7403 / mnorton@ucdavis.edu**

The only cost is your lunch.

VINEYARD COVER CROP NOTES

Some growers seed cover crops in the fall as they can grow in the winter or early spring. There are many different commercial blends available and each have unique advantages depending on your needs.There are five factors that I would consider important for our area: 1. Low water requirements 2. Not attractive to gophers (eg: clovers) 3. Can tolerate mowing during frost season 4. Have the ability to compete with existing cover and re-seed 5. Is adapted to the soil texture in your field. In a recent field trial, Fresno County Farm Advisor Michael Costello observed that the following species did particularly well: Berseem Clover, Common Vetch and Merced Rye. I would use these in combination rather than alone.

Floor management system is important also. In tillage systems, species that produce large amounts of biomass seem popular. They are sown in the fall and tilled in spring. These would include oats, barley, Merced rye, vetch, bell beans and peas or mixes of such.

In addition to the cultivated field, there may be some value in seeding non-crop areas with covers that are considered more attractive to beneficial than the existing weeds. Obviously, the ability to survive without irrigation is the major factor along with adaptability to the soil texture.

When ordering seed, quiz your salesman thoroughly to make sure you are considering all the options.

If you drop by the Cooperative Extension office, we have some publications on cover crops that can give you more detailed information.

TREE AND VINE NOTES

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