COOPERATIVE EXTENSION UNIVERSITY OF CALIFORNIA

TREE AND VINE NOTES

November 2009

North San Joaquin Valley Cling Peach Day

Sponsored by UC Cooperative Extension & the Cling Peach Board

December 3, 2009
8:30 – Noon
Stanislaus County Agricultural Center
Service and Crows Landing Roads, Modesto

1.5 hours of Continuing Education Credits Pending.
3.0 hours of CCA hours pending

8:00 – 8:30 ***Registration, coffee, snacks & socializing***

8:30 ***First Year Results Using the Darwin String Blossom Thinner***
Roger Duncan, UC Cooperative Extension Farm Advisor, Stanislaus County

9:10 ***String Thinner Experiences in Merced County***
Maxwell Norton, UC Cooperative Extension, Merced County

9:30 ***Cost Effective Zinc Nutrition of Peach Trees***
Scott Johnson, UC Cooperative Extension Pomology Specialist

10:00 ***Cling Peach Board Business***
-Discussion of Industry Research Needs
-Board Member Nominations
J. D. Allen – Cling Peach Board

10:20 ***Break***

10:40. ***Oriental Fruit Moth Parasite Video***
Marshall Johnson, Entomology Specialist, UC Kearney Ag Center

11:10 ***Alternative Strategies for Managing OFM & Other Peach Pests***
Walt Bentley, IPM Entomology Advisor, UC Kearney Ag Center

11:40 ***Spotted wing Drosophila: A new pest for fruit growers***
Joe Grant, UC Cooperative Extension Farm Advisor, San Joaquin County

12:00 - ***Lunch hosted by the Cling Peach Board***

Now is Not the Time to Prune Grapes, Apricots and Cherries

Maxwell Norton, UC Cooperative Extension

Contains excerpts from the UC Pest Management Guidelines at ipm.ucdavis.edu

Grapes, apricots and cherries are all susceptible to eutypa disease which infects pruning wounds to produce a canker that will eventually kill whole arms, limbs or scaffolds. In cherries and apricots eutypa limb dieback causes limbs or twigs to wilt and die suddenly in late spring or summer with the leaves still attached. The bark has a dark discoloration with amber-colored gumming; infected areas in the interior of the wood are discolored brown. In grapes, eutypa dieback delays shoot emergence in spring, and causes stunted shoots and leaves that are chlorotic, tattered, and cupped. Symptoms in the wood are characterized by darkened cankers that develop in the vascular tissue. The cankers are often wedge shaped (like a pie chart) in cross-cuts of affected cordons or trunks. Cankers develop faster in the direction of the roots than toward the end of cordons. Extensive infections lead to vine death. Grapes may also have a similar disease to eutypa called bot canker. Bot canker causes death of arms, cordons, and vines. The wedge-shaped, darkened cankers that develop in the woody vascular tissue are indistinguishable from eutypa dieback. Unlike eutypa dieback, there are no foliar symptoms.

With cherries and apricots, pruning in July and August before spores are common in the air is an effective management practice. In grapes, it is not possible to prune that early so growers simply delay pruning as late a possible. Delaying till a few weeks before bud break will minimize risk. Mechanically pruned vineyards typically have less eutypa and bot canker diseases because more cuts are made in smaller wood and the operation can be delayed into spring because hand crews are not involved.

With grapes, apricots and cherries, Topsin-M a commercial fungicide can be painted or sprayed on the pruning cuts right after pruning to protect them from infection. This treatment is listed for eutypa but not bot canker. Rally fungicide just received registration for prevention of both canker diseases in grapes. Contact your Pest Control Advisor for more information about these materials.

In all three crops limbs and arms with cankers should be pruned to below the canker and into clean wood. Double pruning cordon-trained vines can help final pruning cuts to be made quickly and late in dormancy, thus reducing the chance for infection. Infected wood should be burned to reduce spread. Eutypa and bot canker are not transmitted on pruning shears - this only a phenomenon of crown gall and fire blight diseases. With old vineyards that have lost production from the loss of arms or vines, it may be possible to restore production with mechanical pruning. Mechanically pruned vines will quickly fill in the missing spaces with canes and subsequent foliage and fruit.

Evaluation of Movento™ (spirotetramat) for efficacy against nematodes infesting perennial crops

Michael McKenry, Stephanie Kaku and Tom Buzo, University of California

Movento™ (spirotetramat) is a novel active ingredient from the new chemical class of tetramic acids. When applied to foliage, this highly systemic insecticide is converted into an enol form and translocated in an acropetal and basipetal manner within the plant, resulting in effective pest control on roots and shoots. Three years of field evaluations have shown up to a 70% reduction in population levels of Xiphinema americanum collected from Vitis spp using sieve/mist extraction procedures 18 days after treatment (Fig. 1). Soil extractions of Xiphinema index involved a sieve/cheesecloth procedure with impact detectable at 18 days but population declines undetectable until 36 days after treatment. Soil extractions for Mesocriconema xenoplax involved sieve/centrifugation methodology, a procedure that provided no indication of reduced population levels until 54 days after treatment (Fig. 2). It is apparent that nematode extraction procedures that necessitate nematode motility are the quickest to show nematicidal impact associated with spirotetramat. Work conducted to date has shown varying degrees of impact with spirotetramat against all plant parasitic nematode species have been reduced by 50% for up to three months, provided that irrigation was delayed for two weeks following treatment. Late fall treatments to Juglans spp. reduced population levels of Pratylenchus vulnus by 45% for 4 months, whereas populations of Tylenchulus semipenetrans infecting Vitis spp were reduced for only 6 weeks. Spring treatments involving Meloidogyne spp, as well as those listed above, have provided 50% population reductions for 3 months (Fig. 3). Infection percentages of T. semipenetrans by an un-described Pasteuria species were not impacted after three years of spirotetramat applications. First-year yield improvements of 10% from treated vines were common but seldom significant. One data set involving a 2-year test provided significantly improved yield as a result of treatment. Phloem transport of molecules having relatively subtle effects on nematodes will require a greater understanding of application timing relative to nematode development, as well as environmental and prevailing field conditions (Fig. 4). Currently, spring/fall treatment timings are associated with avoidance of post-treatment irrigations rather than toward date of root flush.

This strategy will change depending on the crop (Fig. 5) and method of irrigation. Two well-timed treatments per year provide a starting point toward better understanding of the pest management complexities when multiple target pests are involved.

Michael McKenry is a UC Cooperative Extension Nematologist at UC Riverside and is based at UC Kearney Ag Center.

Stephanie Kaku and Tom Buzo are UC Staff Research Associates at UC Kearny Ag Center.

Fig. 1 By 2008 *X. americanum* /250 cc soil as compared to untreated

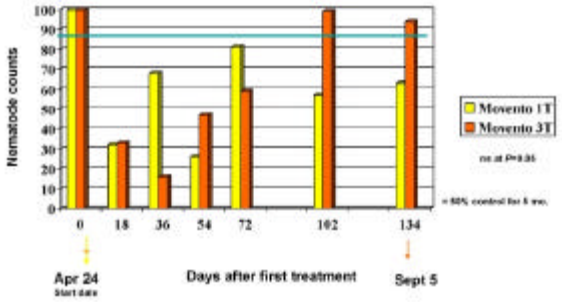


Fig. 2 Control of ring nematode, as compared to untreated at Orosi-West

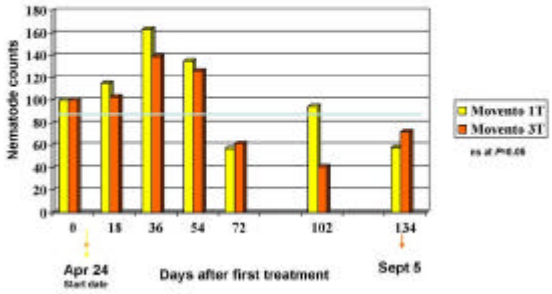


Fig. 3 Control of root-knot nematodes in young roots 72 days after first-treatment at Orosi-East

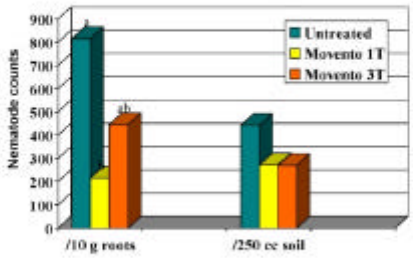


Fig. 4 Control of citrus nematode at or between drip emitters at 99 days after first Movento treatment

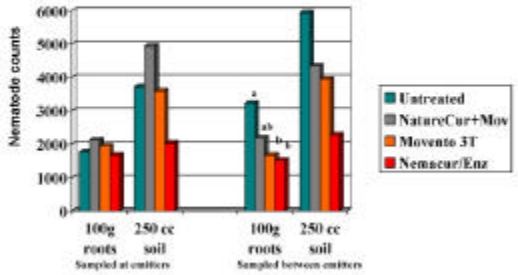
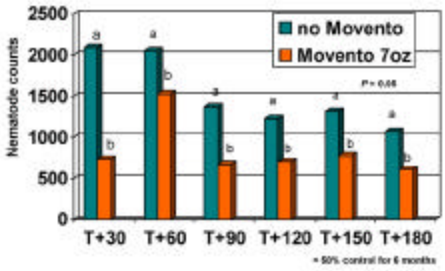


Fig. 5 *P.vulnus* /250 cc in surface 18" of walnut rhizosphere soil



Potassium Applications for Almond Orchards

David Doll, UCCE Merced County

Having a major role in many plant processes, potassium promotes root growth, increases kernel/fruit size, and provides key metabolic features that include the formation of starch, translocation of sugars, stomata regulation, and the formation of xylem vessels. In general, plants deficient in potassium tend to have slow growth, with small, pale leaves. Severely deficient trees may have necrotic tips and margins. In many cases, the leaf tip curls upwards in a common symptom that is named the "Vikings Prow."

Since potassium plays a large role in tree health, it is important to maintain proper levels of the nutrient within the tree. A critical leaf value of 1.4% has been established by the University of California and current research has suggested that levels above this value do not increase yields. Recent field studies by Roger Duncan (UCCE Stanislaus) have demonstrated that leaf potassium levels in excess of the 1.4-1.6% range did not increase yield. Through the study, leaf levels between 1.4-1.6% gave the best yield results, with yield decreasing when potassium levels were below this level. Leaf potassium levels higher than this range did not increase yield, and may actually reduce yields if applied in excess.

Potassium usage by the almond crop is high. Upon harvesting the hulls and kernals, potassium is removed from the orchard. Studies by Dr. Patrick Brown (UC Davis) have shown that for every 1000 pounds of kernals harvested, 50 pounds of potassium are removed from the orchard. From nutrient analysis of the fruit parts, 70-80% of the potassium removed by the harvest is within the hull, while the rest is within the shell and kernel.

Even though a large amount of potassium is used by the almond crop, it doesn't always mean that large applications are needed to maintain critical levels. Some soils may have naturally high levels of potassium, depending on the parent material, percent of parent material degradation, texture, and the irrigation system. A soil analysis should be made to determine the amount within the soil and coupled with leaf tissue analysis to see if the potassium within the soil is available to the trees.

Once the soil potassium level drops, it will take several years of large applications to bring the levels back to normal. Fertilizer products including sulfate of potash, muriate of potash, potassium nitrate, potassium thiosulfate (K-T-S), and a few others are often used in orchard settings. Organic applications can be made through manure composts, green manures, guano, and wood ash. It is important to note that some potassium fertilizers may have unwanted chemicals/traits – chloride, sodium, alkalinity, and food safety concerns – which may have a negative impact on the orchard when applied in excess. Applications should be made to maintain the leaf critical level of 1.4%.

With the recent increases in costs of potassium fertilizers, it is important to keep in mind the potential damage caused by potassium deficiency. Inadequate levels will decrease the number of fruiting spurs on the tree, reduce the flowering of the surviving spurs, and reduce shoot and spur growth. In other words, deficient trees will yield poorly. Keep in mind that by the time symptoms of deficiency are visible, yield has already been lost. Therefore, annual leaf samples and proper applications of potassium are recommended to maintain tree health and yield.

Check out the Almond Doctor:
A website discussing almond production with weekly updates can be found at http://www.thealmonddoctor.com/. Topics have included field diagnosis of problems, production practices, integrated pest management, and news updates regarding almond production.

Almond Tree Blow Over Problems

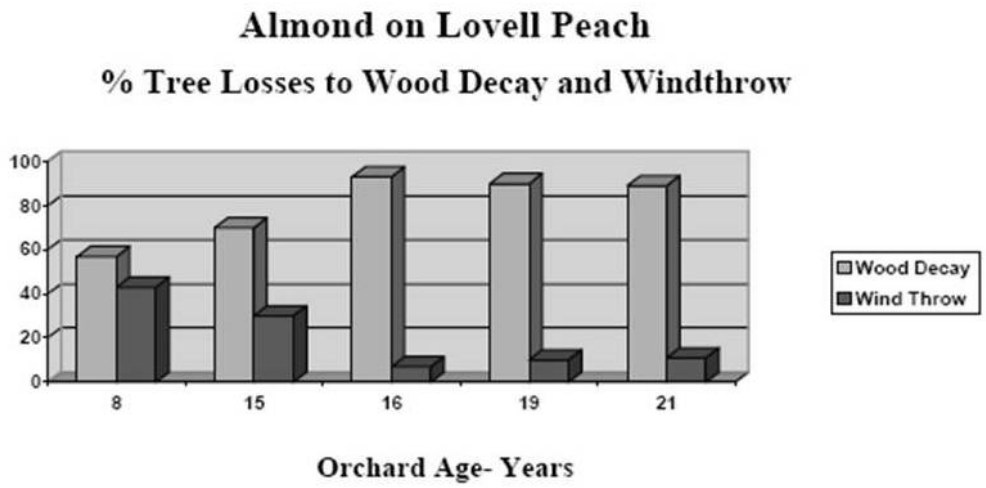
Bill Krueger, Farm Advisor, UCCE Glenn County

Periodically fall winter or spring storms with associated high winds and saturated soil conditions result in high tree losses. As an example, a March 1995 a storm brought 6 inches of rain and wind gusts up to 100 mph to the Sacramento Valley and resulted in an estimated loss of 15,000 acres of almonds worth $210 million. More recently a storm in January of 2008 with wind gusts in up to 70 mph resulted in tree losses of greater than 30% in some orchards.

Windthrow is when trees with sound healthy roots are uprooted as a result of strong winds and wet soil conditions. Wood decay related failures are the result of infection from wood decay fungi, which consume the lignin in the cell walls of the heartwood. Eventually these trees fall, often in wind storms. Wood decay fungi are secondary pathogens and are not capable of penetrating intact plant membranes and must rely on some type of injury to gain access.

Survey work conducted by Joe Connell, Butte County Farm Advisor and Jerry Uyemoto, USDA Plant Pathologist following the March 1995 storm revealed the following. Generally, as trees aged, tree losses increased. Windthrow was an important factor in young orchards (Fig.1). As orchards matured wood decay became more dominant. Wood decay accounted for approximately 90 % of the tree loss in mature orchards. Of 394 downed trees evaluated: 77% had wood decay and 81% had crown gall. Crown galls function as sites of entry for wood decay fungi.

Generally orchards planted on Marianna 2624 had fewer losses to wood decay and windthrow than peach rooted trees. The exceptions included orchards in flooded areas with softened soil and unpruned orchards with dense canopies. Generally plum rooted orchards had less crown gall and wood decay.



Suggestions For Reducing Tree Losses From Blow Over Windthrow:

1. Orient strong roots in the direction of prevailing winds.
2. Avoid planting on high berms perpendicular to prevailing winds.
3. Pay attention to the orientation of irrigation wetting patterns particularly with regard to prevailing winds to ensure root distribution which favors anchorage.
4. Avoid heading trees to high. Developing tops on high-headed trees will have greater leverage and are at greater risk.
5. Defoliate with zinc sulfate and or prune prior to fall and winter storms to reduce wind resistance.

Suggestions For Reducing Tree Losses From Wood Decay

1.Prevent crown gall. Buy trees from a nursery with a good crown gall prevention program. Treat new trees with *Agrobacterium radiobacter* (Galltrol©) prior to planting to prevent infection. Avoid spreading crown gall by injuring crowns and roots and mechanically transferring the disease through practices such as discing, mowing , string trimming, or cutting suckers.

2.Avoid practices which may injure trunks or roots and create an opening for wood decay fungi.3. Use care when applying herbicides to orchard row strips. Herbicides may kill or damage tissue providing an opening for fungi.

Why the Glassy-winged Sharpshooter Isn't Everywhere in California

From the PD/GWSS Bulletin

Ten years ago, GWSS was poised to sweep across California and put an end to grape production in the state. So what happened?

"The answer is simple," says CDFA's Pierce's Disease Control Program Statewide Coordinator Bob Wynn. "A $20-million-a-year program has managed to control the spread of GWSS and contain it to the southern part of the state, as well as eradicate spot infestations as they are discovered."

A principal part of the containment program has been the USDA's area-wide control programs that have been set up in various regions across Southern and Central California. The area-wide programs coordinate treatments in commercial agricultural commodities (primarily citrus) and the release of biological control agents. Visual surveys and trapping in these areas provide information on sharpshooter populations and serve as indicators of developing "hot spots" where treatments may be needed.

"The purpose of the area-wide control programs is to suppress GWSS populations, which reduces the incidence of Pierce's disease and the movement of this key vector," says Beth Stone-Smith, GWSS Program Director for the USDA. "In an area like Tulare County, we are decreasing the chance of the natural spread of GWSS northward into uninfested areas. Area-wide treatments also aid in citrus growers' compliance with state regulations for shipping bulk citrus GWSS-free, thus preventing its artificial spread as well."

Has it worked? In Tulare County, citrus groves along the eastern side of the valley have been under the area-wide control programs since 2004, and thanks to these efforts there has been little or no spread of GWSS outside of this area.

More details of the area-wide control programs can be found on the Internet at: www.pdgwss.net/Board_Info/AreaWide_FAQs.htm.

If you grow grapes north of a line that runs roughly from San Bernardino County, across the southern part of Kern County (with a strip running up to Tulare), then down to Ventura County and across the southern edge of Santa Barbara County, you should not have GWSS in your vineyards.

If you do, call your local agricultural commissioner immediately!

Recently updated Pest Notes:

7430 Walnut Husk Fly
http://anrcatalog.ucdavis.edu/Items/7430.aspx
7416Carpenter Ants
http://anrcatalog.ucdavis.edu/Items/7416.aspx
7425Eucalyptus Longhorned Borers
http://anrcatalog.ucdavis.edu/Items/7425.aspx
7451Mosquitos
http://anrcatalog.ucdavis.edu/Items/7451.aspx
7433Gophers (Pocket Gophers)
http://anrcatalog.ucdavis.edu/Items/7433.aspx
7431Poison Oak
http://anrcatalog.ucdavis.edu/Items/7431.aspx
7445Spotted Spurge and Other Spurges
http://anrcatalog.ucdavis.edu/Items/7445.aspx
Update Pest Management Guideline:
3471 Walnut
http://anrcatalog.ucdavis.edu/Items/3471.aspx

Tree and Vine Notes Newsletter Renewal

If you want to continue receiving this newsletter we need to hear from you.
If previously submitted, disregard this request.

If you choose to receive the newsletter by e-mail you will be able click on the links and see color pictures!

Name:_____ _____

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____ No thanks – please remove my name:_____

What crops do you grow, or advise on? _____ _____ _____

I am a: farmer, PCA, Consultant, Manager, Foreman, Other professional, student (circle one)

Please share with us what newspapers you receive:

- Merced Sun Star
- Modesto Bee
- Fresno Bee
- Merced County Times
- Gustine Standard
- Los Banos Enterprise
- Atwater Times
- Dos Palos
- Winton Times
- Hilmar Times
- Livingston Chronicle

Others: _____