



Cooperative Extension, University of California

San Joaquin Valley

Entomology Newsletter



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New insect and mite pests in Kern County, a 2004 summary report

Each year new insect and mite pests are introduced into the lower San Joaquin Valley: the year 2004 was no exception. We have seen new pests such as the Yuma spider mite and woolly whitefly, and have seen increases in recently-introduced pests such as the Texas citrus mite, woolly whitefly, and striped mealybug. In other cases, such as the glassy-winged sharpshooter and vine mealybug, control programs have been developed and implemented, yet the pests continue to spread to new regions of the state.

The purpose of this newsletter is to give a brief overview of what the new pests are, their hosts, the types of damage they cause, and a little about what is being done about it. Since each segment is intentionally brief, interested readers are encouraged to contact me directly so that I may provide you with more detailed information as it applies to you personally. Follow-up information specific to each pest is already being prepared for commodity-based UCCE newsletters, field meetings, and other information sources for 2005.

A copy of this newsletter with color images can be downloaded under the entomology section of the Kern County UCCE web site: <http://cekern.ucdavis.edu>.

Pest: Yuma spider mite, *Eotetranychus yumensis*

Major hosts: Citrus

Identification: Compared to other spider mites in citrus, this mite is very round, amber to orange, and has a shiny, glossy appearance. It is found on the foliage and fruit and produces a lot of webbing.

Distribution: Some citrus in the Maricopa flats, McFarland and Breckenridge areas

Damage: This mite can cause heavy stippling of leaves and has a great affinity for feeding on the citrus fruit.

Comments: This mite is being found primarily on new plantings of W Murcott mandarins. It is suspected that this pest is making its way to Kern County on nursery stock since new trees have been heavily infested (while surrounding established blocks are not), and since this pest is common in the Coachella Valley where this nursery stock is originating from.

Management: A trial near McFarland and observations from PCAs suggest that this mite is quite susceptible to most miticides used in citrus. Since this pest was first reported in the summer of 2004, we have not yet developed general biological information such as how it overwinters, or if it will become a pest on citrus varieties other than W. Murcott mandarins.



Pest: Texas citrus mite, *Eutetranychus banksi*

Major hosts: Citrus

Identification: This mite rests with its legs stretched forward and backward. The females (seen to the right) have a brown/grey pigment to their bodies. Males have thinner abdomens, longer legs, and are a completely amber in color.

Distribution: Edison, General Beale, Maricopa flats and Breckenridge areas

Damage: This mite stipples foliage and has caused some defoliation in the fall. There are mixed reports of its affinity for feeding on the fruit.

Comments: Damage from this mite has thus far been minimal. In 2003, a small amount of defoliation occurred to some early navels that were on deficit irrigation during an unexpected late heat wave. In 2004, in the absence of these conditions, multiple PCAs report that biocontrol is doing a good job suppressing this pest.

Management: Keep track of Texas citrus mite populations, especially if you have early citrus varieties where you plan to pull back water to bring up sugars. This mite appears to tolerate dry, cold weather, but dies off quickly as soon as it is cold and foggy. Management for this pest should only be needed if defoliation is seen well before cold, foggy conditions occur.





Pest: Striped Mealybug, *Ferrisia gilli*

Major hosts: Pistachio, Almonds, and likely over a hundred genera of plants

Identification: Striped mealybug have two pink stripes down the dorsal side of their backs, and have two white tails. They are most easily identified by the white waxy secretions found covering their bodies. During the winter striped mealybug aggregate on the trunks of trees to give the bark a white bearded appearance

Distribution: Southern Tulare Co., in Pistachios and some almonds, and in a vineyard in El Dorado County

Damage: There is very little research to document the effects of this pest on crops in California. In pistachios, observations show that this mealybug has a great affinity for

feeding within pistachio clusters near harvest. This feeding likely affects the quality and possibly the yields of nuts. In almonds, trees infested with this pest have been completely defoliated prior to harvest, but the actual effects on the crop are yet to be determined. This pest may also cause contamination problems in crops such as stone fruits and grapes.

Comments: This pest has potential to affect numerous nut, stone fruit, grape, and citrus commodities. As of yet we know very little about this pest. Several research projects are underway or are in the proposal process to address these issues. I will be dedicating a significant portion of my research program to this pest during the next few years and will diligently provide updated reports to industry personnel. Those seeking more detailed information on this pest should attend Pistachio day in Visalia on January 19th. A article in January's Pacific Nut Producer magazine will also address the striped mealybug issue.

Management: Management of striped mealybug thus far in pistachios has relied on insecticides such as phosmet and carbaryl. In a block of hard-shelled almonds (which therefore has received very few insecticide applications), I have found at least two species of parasitoids attacking this pest. Samples of the parasitoids are in the process of being identified. Due to the wide-spread host range of this pest, it is difficult to predict where this pest will go next.

For this and other reasons, management programs for growers who do not yet have this pest should focus on preventing its spread. In particular, this is accomplished by keeping work crews and equipment that have been in infested blocks out of those that are clean. Alternatively, equipment such as harvesters, bins, mowers, disks, etc., should be cleaned before moving them from orchard to orchard.





Pest: Woolly whitefly, *Aleurothrixus floccosus*

Major hosts: Citrus

Identification: Only on the undersides of leaves. Adults look like typical whiteflies, nymphs produce excessive amounts of honeydew and are covered in a white, crystalline sugar excretion. In the winter, the honeydew becomes covered with sooty mold.

Distribution: Urban parts of northeast Bakersfield and expanding

Damage: Honeydew is an extreme nuisance to homeowners. Though it has not been seen yet in Bakersfield, literature and PCAs from the Coachella Valley say it can cause defoliation, less fruit, and smaller sized fruit.

Comments: Kern County is one of the last places in California to get this pest. Everywhere

else it is controlled by two different parasitic wasps. We have identified a source location for parasites in Riverside County and have begun to import these parasites onto infested backyard citrus in Bakersfield.

Management: Long-term management will hopefully involve biocontrol. Until then, the best option for homeowners is to hose the trees down weekly or biweekly. This will kill some whitefly, but primarily solves the issue of stickiness since the honeydew is soluble in water and can be washed away.

Insecticides available to homeowners have little effect on this pest. A report out of Arizona states that insecticides containing imidacloprid, buprofezin, and pyriproxifen provide some control of this pest.

Pest: Giant whitefly, *Aleurodicus dugesii*

Major hosts: Many ornamental plants, especially *Xylosma* and hibiscus.

Identification: This whitefly is easily identified by the white bearded appearance of infested leaves. If the webbing is blown from the leaf, large whiteflies with blotches on their wings can be seen. Adult giant whitefly rarely fly.

Distribution: Southwest Bakersfield on the North side of Ming Ave. just west of Old River Road.

Damage: Giant whitefly suck plant juices and cause plant stress and death.

Comments: In southern coastal parts of California this pest is controlled by parasitoids. If this pest survives the winter (which some say it can't handle the cold), contacts have already been made to bring these parasitoids to Kern County.

Management: Until biocontrol can be established, and since adults rarely fly, hosing down infested plants with high pressure water at weekly intervals can cause significant mortality. More information on this pest can be found by accessing the UCIPM Pest Notes for Giant Whitefly at

<http://ucipm.ucdavis.edu/PMG/PESTNOTES/pn7400.html>.



Glassy-winged Sharpshooter and Vine Mealybug

Glassy-winged sharpshooter continues to spread in Kern and Tulare Counties, but has been kept at very low populations by areawide management programs. The success of these programs during the past three years has been amazing. In the General Beale area for example, cumulative trap catches for the entire year in 2004 are mostly in the 0 to 10 range compared to in the hundreds per week prior to the initiation of the areawide management program. One issue, though, with the program is that it is not cheap. Sufficient federal and state funding has been obtained to take care of immediate treatment needs, but long-term funding beyond the next few years is not guaranteed. One effort currently underway to address this issue is the development of Pest Management Districts in grapes. While as a University employee I am not allowed to lobby for or against this legislation, I would strongly encourage all table grape growers who will be involved to become educated on the topic and voice their opinions through the voting process.

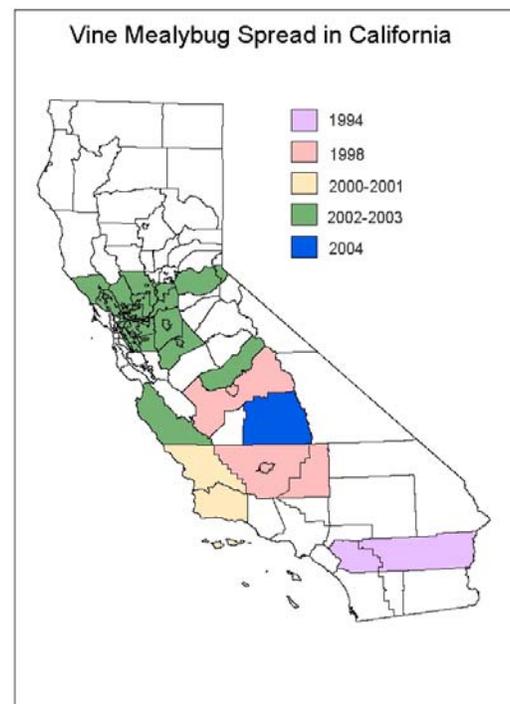


Vine mealybug continues to spread throughout Kern County and throughout the state. This pest is now in at least one vineyard in 17 counties representing all major grape-growing regions of the state. Research is still underway to determine the best approaches to manage this pest. Management in nursery operations with preventative insecticide treatments, pheromone trapping, field monitoring, and hot-water treatments appears to have eliminated nursery stock as a means of the spread of this pest.



Management in the vineyard has primarily been through the use of imidacloprid, buprofezin, and chlorpyrifos; biological control by the parasitoid *Anagyrus pseudococci* causes significant mortality to vine mealybug late

in the season once harvest is concluded. New research in 2004 has attempted to augment biological control as well as use pheromones for mating disruption. In both cases a lot of information leading to a better understanding of this pest was developed, but this information did not lead to a management program that would be effective and economically feasible for a grape grower.



Detecting newly-introduced exotic pests

As a result of the 9/11 attacks on our country, efforts have been underway to make our citizens and way of life more protected. One outcome of these efforts has been an increased vigilance against bioterrorism. Bioterrorism could be defined as the intentional release of a pest or disease organism that attacks plants involved in agriculture. In the case where the pest introductions were not intended, we call them accidental. Yet regardless of whether an introduction was intended or not, early detection and identification is essential to the control process.

Exotic pests each year cost taxpayers and growers millions of dollars. This has been true for control of glassy-winged sharpshooter as well as several other pests. Nationally, pests such as citrus canker in Florida; karnal bunt of wheat in Arizona, California and Texas; and sudden oak death in California have cost and estimated \$400 million, >\$350 million, and >\$25 million dollars and counting respectively. It is estimated that Mediterranean fruit fly would cause \$1 billion dollars in damages annually in California if it were to become established (source: National Plant Diagnostic Network First Detector Program).

Statistic:

The US imported 38 million metric tons of agricultural products in 2002...

Of those, only 2% were inspected for agricultural pests

Source: NPDN training program

As a result of the potential for exotic pests to impact our agricultural crops, it is important for all growers, PCAs, and homeowners to vigilantly report any pests or diseases that appear new or are otherwise suspicious. Early detection is the key to the eradication of pests that can be eradicated and to developing control programs quickly for those that cannot be contained and removed.

If you suspect that a pest or disease may be new, please bring a sample to your local UCCE or Agricultural Commissioner's office to be identified. In Kern County, the UCCE office is located at 1031 South Mount Vernon Ave in Bakersfield. The Agricultural Commissioner's office is next door. When submitting samples, you will be asked to provide your contact information and some basic information about the pest.

Once the identification is made, you will be contacted and we can discuss the need to develop management programs for the pest.

By vigilantly keeping track of agricultural pests and diseases, and reporting anything suspicious, each of us is helping to ensure the safety of agriculture in the San Joaquin Valley.

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