



Central Valley Fiber, Forage and Nut Digest

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Following these summertime farm practices can enhance the fall cotton harvest by Dr. Pete Goodell

This year's cotton development is proceeding well. The temperatures have been up and down, but overall they have been conducive to good plant and fruit development

Because this is a water short year, growers need to pay close attention to management to prevent over-stressing the crop yet finishing it in as short a period as possible.

Here are some key things growers should be doing in the coming months as they head toward the fall harvest:

- **In July:** Watch fruit set and plant development, do not allow plants to overstress and monitor the lygus populations (but don't over react). Fruit developed at this time are less critical to overall yield – the probability of holding top fruit is less than in June.
- **In August:** Look for late season insects, especially aphids and whitefly; follow nodes above bloom to get an indication of 95 percent boll set; and begin setting the plant for boll maturation.
- **In September:** Watch for watch whitefly and aphid; look for nodes above cracked boll to gauge how the crop is finishing; and set the plant up for harvest.



Growers should continue implementing these important integrated pest management practices: Monitor for pests at least weekly, evaluate pest densities for potential damage, refer to UC pest management guidelines for pest control decisions and remember to manage the whole farming system – pests, water, nutrients and plant development.

Dr. Pete Goodell is a cotton specialist and UC Statewide IPM advisor.



Navel Orangeworm egg trap.

Now is the time for almond growers to keep an eye on navel orangeworm by Walt Bentley

The arrival of hull split is the time when Nonpareils are susceptible to navel orangeworm (NOW) infestation. Currently, NOW egg laying is being detected in traps around Fresno and Madera counties. So far, growers don't have the problem yet because egg traps are not an indicator of potential damage, unless the numbers of eggs are consistently high on each trap.

Your orchard's history of damage and this year's mummy nut load is an indicator for the need of an insecticide application. The reason is because growers won't know if there was a problem until the nuts are shaken off the trees.

Here's the threshold: If growers had two or fewer mummies per tree in the spring and your orchard isn't next to pistachios, then growers can anticipate future damage ranging from none to about four percent.

Over the past two years in the orchards enrolled in the SJSFP, there has only been one with greater than 2 percent damage. That is a good sign that growers have been doing an effective job controlling NOW and there may be no need to treat for NOW at hull split.

However, some farmers don't want to risk the potential for 4 percent damage on Nonpareils so they will put a preventative treatment on. The problem is further compounded if an almond orchard is next to a sanitized pistachio orchard. In that instance, a hull split spray should be applied even if you are at two mummies per tree.

If it is determined a treatment is needed, it is important for Nonpareils that the spray is timed during the first 10 percent of hulls splitting. The later the spray timing, the poorer the insect control. *(continued on next page)*

(continued from front page) Another method of control for the third generation of NOW is the early removal of Nonpareils in mid-August. Moths do not lay eggs on nuts shaken from the tree. If there is NOW infestation in the Fritz and Monterey varieties, a chemical spray may be needed because these nuts are harvested late and exposed longer to egg laying.

As with Nonpareils, time the spray to hull split on the Fritz and Monterey varieties and, if they pollinate Nonpareil, a spray should be applied coinciding with Nonpareil hull split. Trees with the hard shell varieties (Butte and Padre) will probably not need a spray. The damage caused by NOW has been less than 1 percent for these two varieties in the past two years.

I would suggest looking at the UC IPM guidelines (<http://www.ipm.ucdavis.edu/PMG>) for almonds if it is necessary to choose an insecticide.

Walt Bentley is a retired entomologist and University of California Statewide Integrated Pest Management emeritus



Program Field Scout offers a second set of eyes for growers

He travels 250 miles a week, crisscrossing the country back roads of the northern San Joaquin Valley, making seven stops a day along the way. He likes catching bugs. And he wades through rows of cotton plants and fields of alfalfa.

If you see someone with a sweep net in the same field at the same time every week, it's a good chance that person is Carlos Silva, the new field scout for the San Joaquin Sustainable Farming Project. He's the "second set of eyes" for cotton and alfalfa farmers participating in the SJSF program, providing valuable in-the-field observations and data about plant conditions and pests that supplement information for their own pest control advisors.

"I enjoy spending time out in the fields scouting them and taking note of my observations," the Firebaugh resident says. To beat the heat, Carlos heads out the door at 7 a.m. to make his field scouting rounds during the week. He gives us a glimpse of his work:

Q: What has surprised you about the work?

A: I have been surprised by the amount of insects in the fields. When you look at these fields from afar you don't really think about these things. Once you get up close and inspect leaves you begin to see all the little insects living and thriving in these areas. The beneficials are nice to see, but the pests need to be paid special attention to, as they can be harmful to a crops yield.

Q: You have been working with Dr. Pete Goodell of the University of California Statewide Integrated Pest Management program. What is it like to learn from Dr. Goodell?

A: It has been a great experience to learn from Pete Goodell. He has been instrumental in getting me up to speed with all the details of field scouting.

Q: What are some of the things Dr. Goodell has taught you?

A: Dr. Goodell has demonstrated the proper way to take sweep net samples in both alfalfa and cotton. He always helps clear up or to better describe things I don't understand when gathering the data for field notes. When I have trouble identifying a particular pest/beneficial insect he has helped me identify them. Any question that I have, I can count on Pete to know the answer or point me in the right direction.

Q: Are you meeting with him every week?

A: I have tried to meet with him every week, but if not possible then usually we'll speak over the phone about what has been going on. He usually tells me if there is something I need to be looking for in the field.

Q: What will you be doing in July and the rest of the season?

A: I will continue my field scouting of alfalfa and cotton through the rest of the season. I will start the release of green lacewings in cotton fields as soon as possible. I will continue to monitor for pests that affect these crops in fall like aphids and armyworms in alfalfa. In cotton, mites, whitefly, and of course lygus will continue to be monitored. I am also looking for spots in the field that show any signs of fusarium wilt.

Q: What is it like to work as a field scout?

A: I find my job to be a challenge, which makes me enjoy what I do. My observations can help a grower make very important decisions so it pushes me to ensure that I am gathering the most accurate data possible.

Race 4 fusarium continues to spread in local cotton fields

It resembles a sparse, brown island amid a sea of lush, green cotton plants. But upon closer inspection, the sight reveals a field littered with yellowing leaves in young plants and wilted, dying seedlings. The cause could be an ominous ailment caused by a soil borne fungus known among cotton experts as *Fusarium oxysporum* f. sp. *vasinfectum* race 4 (FOV 4), an early season cotton disease.

Growers know it simply as Race 4 fusarium, which continues to spread in the northern San Joaquin Valley. Unlike Race 1 fusarium, Race 4 can cause damage in a variety of soil types without the presence of root-knot nematodes. Moreover, it can cause a vascular wilt disease in a wide range of cotton varieties, meaning the potential economic impact could be huge.

“We are not seeing a big explosion but it definitely a spreading problem. New fields are being identified with Race 4 fusarium pathogen present in them. It is something we see in both pima and upland, including acala fields,” says Dr. Bob Hutmacher, a cotton specialist at the UC Westside Research Center and a leading expert on Race 4.

Recently, Hutmacher was called in to inspect a local field planted by a San Joaquin Sustainable Farming Project grower. That field had football field section of wilting cotton plants. An evaluation is continuing.

“You really shouldn’t be making a guess that you have Race 4 fusarium in a field. It is better to confirm it by requesting that a test be done. In the past, you had to send a sample to the UC Davis campus. Now the options include a quick test developed by UC and the cotton industry.” Growers should contact their local farm advisor or ask their pest control advisor about testing samples.”

The disease can be introduced into fields through soil, plant debris or contaminated seeds. It moves within fields by both soil and water. Race 4 can survive on a variety of plants and weeds without infecting them. The pathogen will live on the roots and lasts for years. The common question by growers is “How did it get there?”

“It can come in anything that moves soil onto the property. You will probably never know for sure,” Hutmacher says. He says containment practices are tough, requiring a pretty aggressive crop rotation program. “Our advice is planting resistant varieties. The cotton industry has been helping get the word out about resistant varieties and with research into this problem.”

Hutmacher suggests growers should keep track of the location of the infected area. Using a GPS device or a GPS application on a smart phone, growers can mark down the exact coordinates of the problem area.

“A lot of farming operations will be going in and out of cotton and they will be planting different crops in that field. It can get confusing over time. You really do want to know right down to the exact field location where this pathogen is,” Hutmacher says. This practice will help you make future cotton planting decisions that will help you avoid suffering a bad economic loss.

Prevention tips

- Plant tolerant cotton varieties
- Use seed produced where Race 4 fusarium does not occur . Clean equipment, including shoes, that may have been used in infected field area. This can carry infected soil to another field. Fusarium can survive on other plants without causing the disease

How to take sample

- Use a shovel to dig out the entire plant without disturbing the entire root
- Rinse soil from roots and place the plants in a plastic bag
- Select plants that show symptoms and are not dead. Try to get plants at different growth stages
- After collecting the sample; contact your local farm advisor about testing. You also can contact Bob Hutmacher at the UC Research and Extension Center in Five Points at (559) 884-241.

More information about Fusarium wilt in cotton is available at UC IPM online:

<http://www.ipm.ucdavis.edu/PMG/r114100311.html>



Dr. Bob Hutmacher, UC Cotton Extension Specialist, spoke about Race 4 fusarium at a San Joaquin Sustainable Cotton Project field day in June 2013.

For the latest farm information, you can like us, read about us online or simply visit in person

Farming is much like the weather. It's unpredictable and constantly changing. To help farmers keep up these changes, the San Joaquin Sustainable Farming Project (SJSFP) continues to adapt its programs and events to meet the evolution in agriculture. We rely on the farming community to tell us how we can better connect growers with leading University of California extension and IPM advisors to meet their production information needs in almonds, cotton and alfalfa.

Over the past 3 ½ years, we have sponsored 21 field days and conducted three annual Cotton Farm Tours. We have reached more than 500 area growers and pest control advisors during our field days and meetings.

For those unable to attend our events, SJSFP has created a virtual classroom on its website. This online education program allows you to view more than 30 videos featuring presentations from our field days. To get the latest information from the orchards and fields, you can read our weekly Central Valley Farm Scout blog that features on-the-ground reports from our two field scouts. We have produced nearly 100 blog posts in the past two seasons, garnering more than 15,000 page views across the globe.

With your support, we will continue to showcase the positive aspects of farming and the innovative practices and ideas growers are implementing. Feel free to contact us if you have any suggestions, or want more information about what the project is doing or want to become more involved.

- Marcia Gibbs, SCP, SJSFP, Director, (530) 370-5325, marcia@sustainablecotton.org

You can find us online at the following:

WEBSITE: www.sustainablecotton.org

FIELD DAY VIDEOS: <http://www.sustainablecotton.org/videos>

FACEBOOK: <https://www.facebook.com/sustainable.farmingproject> **BLOG:** <http://centralvalleyfarmscout.blogspot.com/>

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