Spring disease concerns

With the dry spring we've generally had excellent disease control so far. Rain at bloom resulted in a lighter crop than we were hoping for but nut set has generally turned out better than many people thought it might. With the recent May rains it's now important to protect the nuts that are on the trees if conditions promoting disease continue. Continued rain in May can create perfect conditions for triggering epidemic scab, leaf blight, and *Alternaria*.

With the smoke and humidity last summer we saw severe outbreaks of *Alternaria* in some orchards. Scab and Alternaria are two diseases that get started with late spring rain but show up later and can cause severe defoliation that makes harvesting more difficult. Next year's flower buds develop this coming July to October. When defoliation occurs this June, July or August fewer flowers may differentiate and bloom next year can be light. Be prepared to continue to provide spray protection when necessary.

Disease Resistance. Work described by Dr. Jim Adaskaveg at past Almond Institutes in Chico indicated that once we're past the pink bud spray, an every other row spray program will not provide adequate coverage for good disease control. This is especially true if we have high disease pressure and rainy conditions that promote disease.

Another major concern with an every other row spray program is that sub-lethal residues are deposited on the side of the tree away from the sprayer. This is an ideal way to more rapidly select for fungus strains that are resistant to the fungicides you're using. This is especially risky for the new materials that have a single site mode of action.

We have already lost the effectiveness of Abound and Pristine for scab and *Alternaria* control in much of Butte County due to the development of fungicide resistant scab and *Alternaria*. Don't contribute to wiping out the effectiveness of our remaining fungicides by miss-using them!

Do your part to spray in an effective manner that reduces the chance of disease resistance developing. We have some great new materials available where you can rotate their use between different classes of fungicides to provide good disease control. We don't want to lose their effectiveness because you only put on a half rate with an every other row spray program.

Research has identified rates that were shown to be effective. Label rates per acre are based on this information. Why would you expect to get good disease control by using less material? In addition, we have data that clearly demonstrates that once trees have leafed out the coverage is poor on the side of the tree away from the sprayer. Good disease control requires an adequate rate and good coverage.

Solid sprays applied when needed, will do a better job with less risk of developing resistance than will half sprays. Our preferred recommendation would be for full sprays at 2 or 3 week intervals if necessary depending on rain rather than applying half sprays every 7-10 days.

Scab. Scab twig lesions formed spores in late April. Rain this time of year splashes these spores around and triggers disease outbreaks. This disease will be problematic if rains continue. If you have scab susceptible varieties such as Carmel or NePlus, additional sprays can prevent infections now and defoliation later.

By June, scab infections that started in May will be showing up as yellowish spots on the under surface of leaves. Later, the lesions develop a gray, greasy appearance visible on the upper leaf surface as well. Severe infections result in partial or complete defoliation of almond trees in early to mid summer.

Our research has shown that later May sprays will further help reduce the severity of scab. If we get back into a rainy pattern, later applications of available fungicides can help prevent a problem from developing.

Rust and Alternaria. These two diseases typically show up later in the season. Following the recent rain, these diseases may begin to show up this year as well. Keep an eye out for the very first signs of either of these problems and be prepared to apply protective fungicides when necessary. Materials that are available have a short residual and the treatments must be used to prevent disease rather than eradicate it. Visit the UCIPM web page at http://www.ipm.ucdavis.edu for additional information on disease management.

Biofix for Peach Twig Borer

First leaf trees can be set back and have their developing scaffolds deformed if the terminal growth is hit by PTB this spring. We caught our first PTB moths in pheromone traps in a Durham almond orchard on April 16th this year.

Optimum spray timing is 400 to 500 D° after the first sustained moth catches in pheromone traps. PTB shoot strikes should be occurring from this generation between roughly May 16th and 22nd this year. Unusual weather can shift this projection one way or the other depending on temperatures.

The time tested method of treating when first shoot strikes are seen has worked well over the years but requires regular monitoring and the ability to see the first few wilted leaves at the shoot tips. If you start watching closely you should be able to see new PTB shoot strikes beginning around mid May.

The biofix starting date is the beginning point to run the day degree model for this pest. The insect phenology model can improve spray timing if pressure is great enough to suggest that sprays are needed or they can provide a clue as to when pest pressure will occur as harvest approaches. Bio-fixes will vary with location and the environment so it's best to have traps in *your* orchard if you wish to use this information most effectively.

Today, degree day calculations can be made easily from the biofix in your orchard using the Degree Day calculator on the UCIPM web page at http://www.ipm.ucdavis.edu.