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California

Weather could complicate almond blossom

By TIM HEARDEN
Capital Press

SACRAMENTO — Mid-February is almond blossom time in California, but the cold and blustery weather anticipated this month could interfere with bee activity, industry insiders warn.

Storms that have been rolling in off the Pacific Ocean is filling reservoirs and putting copious amounts of snow in the Sierra Nevada, but they may coincide with a blossom expected to be a little ahead of schedule, Almond Board of California officials say.

Wet weather during the bloom isn't unusual, but bees need temperatures above 55 degrees, little wind and no rain to do their business, University of California Cooperative Extension farm adviser



Tim Hearden/Capital Press

Almond trees in an orchard at the California State University-Chico farm blossom in late February of 2014. Weather could complicate this year's blossom, almond industry insiders say.

Franz Niederholzer explains. Wet weather at bloom favors fungal infections of the flowers, putting honey bees at more risk, the almond board explains.

"It's the same question every year, but for 2016, if weather predictions hold true, it may be a challenge to protect blossoms from diseases while at the same time providing a safe environment for bees to do their thing," board spokeswoman Linda Romander said in an email.

While El Nino was expected to usher in a warm and wet winter, many of the storms that have rolled into California have been fed by a northern jet stream, bringing lower temperatures from Canada and producing impressive levels of snow.

One storm that passed through on Feb. 3 was expected to push snow levels as low as 1,500 feet in far Northern California, according to the National Weather Service. A manual snow survey conduct-

ed east of Sacramento on Feb. 2 found a snowpack that was 130 percent of normal for this time of year.

The federal Climate Prediction Center expects conditions in California to dry out and warm up over the next two weeks, which could ignite the bloom.

But wet weather will likely return, as the next month to three months are still expected to bring above-average chances of precipitation throughout the state, according to the center.

The almond board is urging growers to follow a best-practices guide it developed in 2014 after many California beekeepers lost both adult bees and broods that winter as a mixture of fungicides used by almond growers and insecticides applied to

field crops proved harmful.

The board advises growers to limit spray materials in the tank to just fungicides, avoiding tank-mixing with insecticides. The one exception is the insecticide *Bacillus thuringiensis*, which is shown to be safe for adult and brood bees, the board explains.

If rain and field conditions limit access, growers can use newer fungicide chemistries that feature more flexible timing because they are locally systemic and provide reach-back activity against a recent infection, according to a board news release.

The new pesticides can be applied at pink bud to provide disease protection and may be the only bloom spray needed under low-disease-pressure conditions, the release explained.

Study: No alternatives to chlorpyrifos for 2 key almond pests

By TIM HEARDEN
Capital Press

CHICO, Calif. — Researchers looking for alternatives to the heavily scrutinized pesticide chlorpyrifos have identified a pair of destructive bugs in almond orchards that don't respond to anything else.

While other pests will respond to other treatment combinations, leaffooted plant bugs and stink bugs — which both feed on and damage developing nuts — won't, said Pete Goodell, a University of California Cooperative Extension pest control adviser.

A team of scientists, growers and industry representatives identified controlling the two bugs as a "critical use" of chlorpyrifos, which the U.S. Environmental Protection Agency is considering banning for agricultural use.

"Chlorpyrifos is an import-

ant tool for" integrated pest management, Goodell said during a Feb. 5 workshop in Chico. "It's used for a number of almond pests."

However, "chlorpyrifos is showing up in waterways. When something is getting in the water, people don't like it," he said.

Used on 60 crops

The EPA took comments in the fall on its plan to revoke food residue tolerances for chlorpyrifos, which is produced by Dow AgroSciences and acts as a contact or stomach poison to pests.

The agency has asserted that humans' exposure risk to chlorpyrifos could exceed safety standards "in certain watersheds" — particularly small watersheds where the pesticide is heavily used. Chlorpyrifos was banned in residential use about 15 years ago.

In California, the chemical is used on some 60 crops including tree nuts, oranges and grapes, regulators say.

It's unclear whether the EPA would carve out critical-use exemptions while phasing out chlorpyrifos, as has been done for methyl bromide and other chemicals, said Randy Segawa, a state Department of Pesticide Regulation program manager.

Segawa said the EPA is taking the economic risks from the ban into account.

"While the EPA is proposing to revoke all food tolerances, their main concern has been drinking water," he said,

adding that chlorpyrifos residues showing up in drinking water hasn't been as much of an issue in California.

While chlorpyrifos is heavily regulated in California and its use has declined, between 1 million and 2 million pounds of the chemical is still applied to crops in the state each year, DPR spokeswoman Charlotte Fedipe has said.

In 2014, the DPR contracted with the UC's Statewide Integrated Pest Management Program to create community-specific guidelines for using chlorpyrifos.

Teams focused on its use on alfalfa, almonds, citrus

fruit and cotton, identifying alternatives as well as instances when use of the chemical is critical to protecting the crop.

A resulting report examined other pest-control tactics, including pest-resistant varieties, mating disruption, field sanitation and other insecticides.

'Essential element'

However, the teams found that chlorpyrifos is an "essential element" in maintaining crop production and quality, the report stated.

For almonds, the team made lists of pests according to how frequently they invade

orchards and what alternative treatments were available, Goodell said.

Leaffooted plant bugs and stink bugs were identified as "key pests with no alternatives," he said.

Leaffooted bugs show up in orchards in March or April and feed on young nuts before the shell hardens, causing them to abort or causing the nut to gum internally, according to the IPM program.

Damage by stink bugs usually occurs during the period from May through July, when the bugs insert their strawlike mouthparts through the hull and into the kernel.

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