

January 8, 2014 ALMOND GROWER
NEWSLETTER

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2014 Bee Supply

As has been the case in recent years, no beekeeper can determine how strong his colonies will be for almonds until he goes through them in January. This process is going on right now, and will continue right up to the time we start moving bees into orchards at the end of the month. We do lots of backing and filling with our bee supply during January, cutting back numbers on some beekeepers, increasing numbers on others. At the present time we have booked 5% more colonies than we have committed to growers but we may go 5% less if our supply decreases (our grower agreements for colony numbers read + or - 5%). We hope and plan to deliver +5% to you, but we also planned to do so last year at this time, then wound up going -5% for many growers due to colony dwindling in January. Because we have a large number of suppliers to draw from, we have always been able to keep our grower commitments.

As there is every year, there will be plenty of hives available for almonds this year – a “hive” is the structure (usually wooden) that houses the colony – but there will again be a shortage of strong bee colonies.

Beekeeper Problems

The bee problems you’ve read about are very real, and are clustered under the catch-all title of CCD (Colony Collapse Disorder). Varroa mites, and the viruses they transmit are felt to be the main concern with diminishing bee forage the number one concern for many operations.

Beekeepers that provide strong colonies for almonds spend a significant part of their annual budget on supplemental feed. This year, due to drought conditions, many California beekeepers started a feed program right after almond bloom and continued feeding right through December. In the Midwest, where many colonies spend the summer, there was much more rain in 2013 than in 2012, but cool, rainy weather prevented many colonies from taking advantage. In the plains states, the conversion of good bee pasture to corn and soybeans (both poor bee plants) continues to adversely affect bees. Feedlot beekeeping has become a fact of life for many bee operations. Almond flowers are a rich source of both pollen and nectar, and if bees could work almonds year-round, life would be sweet indeed. Pickings are slim though, after almond bloom, with many colonies going from feast to famine forcing beekeepers to feed expensive sugar syrup and protein supplements,

both not nearly as healthful as natural forage. If you have the space and are interested in planting bee-forage seed, contact Meg Ribotto at projectapis@gmail.com

Bees and Pheasants

Bees and pheasants share a common problem: replacement of prime habitat by corn and soybeans. See www.pheasantsforever.org and click on Habitat for more information. A bee-pheasant coalition could be helpful.

Research \$

As we do every year, we collect \$1.00/colony each from both almond growers and beekeepers to help fund research for the myriad problems facing bees. We rented 34,626 colonies in 2013 and the research \$ were distributed as follows: Project APISm: \$45,000; Randy Oliver: \$10,000; Frank Eischen (USDA): \$15,000 (labor). Check out Project APISm at www.projectapism.org and Randy Oliver at www.scientificbeekeeping.com. Both these sites have extensive links to what's happening with honey bees.

Fungicide Applications

Most or all fungicide labels read "*Non-toxic to bees*". Fungicides can be toxic to bee larvae if the larvae consume treated pollen. You don't see dead bees in front of hives, as you would with an insecticide spray, but the damage often shows up weeks later when larvae consume the treated almond pollen. Two of our beekeepers reported that their colonies didn't start thriving in 2013 until late summer after all the almond pollen in the colony was consumed. In recent years growers have added IGRs (Insect Growth Regulators) to fungicide sprays and there is good evidence that IGRs in such sprays are harmful to bee colonies; IGRs that target worm pests likely have a similar mode of action on worm-like bee larvae. There is also evidence that when adjuvants are added to fungicides, the mixture becomes more toxic to bees. Fungicide sprays, and the chemicals added to them, can also inhibit pollen tube growth (germinating pollen grains are remarkably similar to fungi under the microscope). And, there have been many observations that when fungicides are sprayed during almond bloom, bee activity ceases for up to 24 hours or more due to the repellent effect of the odor. UC now recommends that if fungicides must be applied, they should be applied when there is little or no pollen in the orchard (at night, or after 3PM in the afternoon) and when

bees are not working. Pink bud, popcorn or petal-fall sprays are easier on bees than full-bloom sprays.

Paramount Farms applies no fungicides during bloom, because they have found that bloom-time applications reduce yields. There should be low amounts of fungus inoculum in almond orchards in 2014. If you don't eliminate fungicides from your management program this year, consider leaving a test, non-treated area in your blocks and compare yields with treated areas.

Herbicide Applications

I never have been concerned about herbicide applications around bees – until last year. A significant, documented bee kill occurred when a herbicide spray went directly into hive entrances. A suspicious kill occurred 2 years ago after an herbicide application (new adjuvants could be involved). Don't allow herbicides to directly contact bees. With both herbicides and fungicides, be careful not to give hives a double dose of spray at the end of rows.

No Rain, Bad --- No Fog, Also Bad

For strong flowers, almonds require 300-500 hours below 45 degrees F --- cherries and pistachios, twice as much. Foggy days are preferable since sunlight raises bark temperatures by 30 degrees or more, neutralizing sunny-day chill hours (cherry and pistachio growers should consider a winter whitewash application). Some feel that below-normal rain doesn't provide the moisture necessary to generate fog, but dense fog has occurred in the past after prolonged dry spells, so there's something else going on (when in doubt, blame global warming)

A Glimpse of the Future?

Re CO₂ and methane: *"Just a few more decades of emissions may bring atmospheric CO₂ to a level not seen since the mid-Miocene, fifteen million years ago. A few decades after that, it could easily reach a level not seen since the Eocene, some fifty million years ago. During the Eocene, palm trees flourished in the Antarctic, and alligators paddled around the British Isles."* The New Yorker, December 23 & 30, 2013, p. 52.

Culture Stop on Hiway 99

The recently re-vamped Rest Stop on Hiway 99, 5 miles south of Tulare (either side) includes a mini outdoor museum featuring professional, permanent display posters giving a history of the San Joaquin Valley, including agri-culture. Who says our Valley don't have culture?!

Book Recommendation

The Time it Never Rained by Elmer Kelton

Stay in Touch

Good communication insures good pollination. I'm at the office close to 24/7 during bee-moving time. I have two office phones - (661)327-2631 and (661)327-8101; if one is busy, try the other; if you still can't get through, call my cell: (661)809-5551. Our bee inspectors can handle any field problems that might arise; call us right away if any hives are tipped over - a bee colony exposed to cold night temperatures can die out.

Here's to a good pollination year and record rainfall statewide --except during peak bloom.