

**2015 Almond Pollination**

The number of colonies we will need from you as of this date is given herein - this is a preliminary number that we will refine in coming months. Uncertainties in water availability for almonds translate to uncertainties in 2015 almond bee requirements - we hope to use more than the number given here but won't know our actual needs until sometime this fall. July and August are the critical water-use month for almonds (and for all living things) and growers are on edge, in anticipation of hearing the dreaded sound of one of their pumps sucking air or sand instead of water. With little or no surface water available and with many straws sucking from the same water table, the odds of wells going out increase with each passing day - some have already failed in July. The conversion of non-irrigated pasture to orchards and vineyards in recent years has put increased pressure on a finite groundwater supply. Since it can take 2 months to a year to line up people to lower pump bowls to tap into available water, if a well goes out in August, the almond grower is faced with hard choices. Shortage of water in August will reduce 2014 yields somewhat (maybe 10% due to nut shrinkage) but the 2015 crop can be reduced by 20 to 80% if trees are stressed during August-September when 2015 flower buds are forming and developing.

If water-stressed trees are farmed in 2015, growers may cut back on bees in anticipation of a light flower set, or, they may decide to push out formerly productive blocks. Orchards reaching the end of their productive lives (around 22 years) are the most likely candidates for removal. Orchards in their prime (6 to 14 years) are less likely to be removed, with some growers feeling they can take a hit on the 2015 crop, hope for a wet winter (or secure a reliable 2015 water supply) and bring their trees back during the 2015 growing season in order to cash in on a bumper crop in 2016. Many hopes are resting on the predicted wet 2014-2015 winter, but long-range weather predictions are historically unreliable. The 2015 bee-rental picture for almonds will come into better focus this fall. We will confirm the number of colonies needed from you by the October 30<sup>th</sup> date on your Agreement with us; we hope to notify you well before October 30<sup>th</sup>.

**Drought Spurs Creative Thinking**

A local grower recently suggested that if all Coastal California cities were required to use desalinated water, there would ample water for Central Valley agriculture. There are a number of Valley wells with water that is too

salty for crops and some growers are investigating how to convert this water into usable water. The standard method – reverse osmosis – is expensive and consumes much energy. One westside grower is using solar energy to, in effect, distill this brackish water. A major problem with desalinating water is disposing of the salts produced without harming the environment.

### **Almond Prices Remain Strong**

Almond prices remain strong (around \$3/lb) even with another record crop this year. This, in spite of double-digit % reductions in exports to China and India, both major almond markets. Increased U.S. and European consumption has stabilized almond prices. The Almond Board and Blue Diamond have done a great job of promoting the health benefits of almonds, esp. to health-conscious baby-boomers. Walnut and pistachio growers are also enjoying good times (if they have enough water) since the health benefits of all nuts are riding a wave of positive media coverage.

### **Project ApisM at Shafter**

Pam now has a presence at the Shafter Station (formerly the USDA cotton research station). Currently only an office + space for about 20 hives but this could expand into much more.

### **What Happened to the Bees This Spring?**

Above normal bee losses were incurred by a number of beekeepers during and after almond pollination this year. Losses by our beekeepers were significantly less than those of others, but some did occur. Eric Mussen summed up the problems nicely in his March/April newsletter, *From the UC Apiaries*. We'll be sending Eric's info to our almond clients in January.

### **Where's the Fog?**

You may have noticed that the tule fog that usually blankets our Central Valley during the winter months has been AWOL in recent years. 50' visibility in dense morning and evening fog makes delivering bees to almond orchards a real adventure – no such hazard this year. A benefit of foggy mornings is that they provide a bigger window for bee deliveries to orchards until the sun comes out in the afternoon and the bees start flying at stockpile sites. Lack of fog has hurt those tree crops that have a higher chilling requirement than

almonds – the California cherry crop was a bust this year due to insufficient winter chilling. In contrast, reduced chilling probably benefits almonds by spreading out the bloom (giving bees extra time to do their job) and with no morning fog, bees no longer have to wait until the afternoon sun dries out blossoms. Many feel that moist ground is necessary to generate fog and that our current drought is the reason we don't see nearly as much fog as we used to.

### **Elina Nino Coming to California**

Penn State bee expert, Dr. Elina Nino will replace retiring Dr. Eric Mussen as UC's Extension Apiculturist in September. Dr. Nino has excellent credentials and should be a great replacement for Dr. Mussen. Welcome, Dr. Nino!

### **Grass Valley 2, Harvard 0**

When researchers at Harvard reported in 2012 that Neonicotinoids were the likely cause of CCD Randy Oliver (Grass Valley, CA) said their study failed to prove their point and faulted the methods used to arrive at their conclusions. The Harvard group upgraded their methods and re-ran the study in 2013 but the new study still didn't get past science goalie Randy. When the imprimatur of "Harvard" is associated with a study, the results are usually accepted, without question, by the average reader and by most or all of the media. It appears that Grass Valley has bested Harvard in this instance (see Randy's May blogs at [www.scientificbeekeeping.com](http://www.scientificbeekeeping.com) that dissect the flaws in the Harvard work). History note: Grass Valley got its name long before it became a Mecca for pot-smoking hippies in the 1960s; and, no, Mr. Oliver is *not* a pot-smoking hippy (looks can be deceiving).

### **The Jerry Hayes Saga**

When Jerry Hayes changed jobs a while back, it stirred up quite a fury – some were sad, a few were mad and formed a self-appointed jury. "Monsanto?!" they said, "You'd be better off dead, tell us why, Jerry, please tell us why?" Pushing patience aside, Jerry finally replied "No need to be queasy, the answer is easy, the future is RNAi!"

### **Christi Heintz, Superstar**

When Project ApisM was established a few years ago by Dan Cummings and Christi Heintz, I thought "that's nice, a central source for collecting and distributing research \$." I never imagined it would grow to the giant it is today. With major grants from Monsanto, Costco, CDFA and numerous

contributions from individuals and organizations, PaM is the go-to place for anyone wanting to invest in honey bee research. And PaM has assumed the lead in providing forage for bees. The driving force behind Pam is Executive Director Christi Heintz, the heart and soul of the organization. Christi is modest about her accomplishments and readily deflects praise to others ..... maybe it's a woman thing. *Note:* you've already contributed \$1/almond colony rented through us; ask your fellow beekeepers to step up.

### **Habitat for Beemanity**

“Habitat” is the current buzzword in beekeeping circles. A healthy habitat for bees contains ample flowers to provide the food that bees require. Hats off to those that are working on improving bee habitat: Christi Heintz and Meg Ribotto of Project ApisM, Zac Browning and Pheasants Forever, Pollinator Partnership, National Association for Sustainable Agriculture (NSAC), the ABF and AHPA, the Honey Board the Honey Bee Health Coalition and others. Their efforts have already paid off with the recent \$8 million from D.C. to expand CRP land.

### **In Praise of Monoculture**

Monoculture – extensive acreages of a single crop – has gotten a bad rap in recent years. The premise is, that in order to thrive, bees must have pollen from a wide variety of flower sources that together will supply the full complement of essential amino acids that bees require. The accusation that monoculture plantings create “food deserts” for bees is certainly warranted for corn and soybeans, and, to a lesser extent for blueberries and sunflowers (due the low protein/amino-acid content of pollen from these latter two crops). Consider, though, two large-scale monoculture crops – almonds and canola -- on which bees do indeed thrive. There are 860 thousand acres of almonds in California’s Central Valley and a million acres of canola are planted each year in North Dakota alone. Don’t tell the beekeepers that place bees on these two crops that their bees are being adversely affected (O.K., pesticide programs can cause problems, but with good communication between beekeepers and growers such problems can be minimized, if not eliminated). Consider these recent words on canola (aka rape seed): *“Surprisingly the much maligned oil seed rape has a very well balanced mix of all the amino acids essential for insect growth.”* (*Beekeepers Quarterly, June 2014*). And consider that Dr. Frank Eischen has raised happy, healthy bees throughout the year with almond pollen as their sole protein source. How fortuitous that the 2 U.S. crops most visited by honey bees provide two of the most nutritious of all pollens!! Currently, U.S. bees have an excellent late-winter pollen source (almonds) and a great summer pollen source (canola). It would be nice to fill in the calendar gaps with a nutritious

monoculture pollen in the spring (apple, mustard, CA canola?) and in the fall (rabbit brush?).

Rabbit brush, a hardy, drought-resistant plant, is Mother Nature's greatest gift to U.S. bees and their keepers because it blooms during an otherwise barren time of year. Some of the best almond bees in February have been on rabbit brush sites the previous fall. It would nice to have wide, monoculture rabbit brush corridors stretching from the plains states to California, Oregon and Washington. (Note: some USDA personnel feel that rubber can be commercially harvested from rabbit brush; whether enough can be harvested to be profitable has not been shown).

### **Another North Dakota-California Connection**

ND and CA, our two largest bee states, also share the largest shale-oil deposits in the U.S. With its uniform shale deposits, ND has already extracted lots of gas/oil via fracking. Jumbled shale deposits in CA makes fracking far more difficult but plans are underway. Most CA shale is located in the S. San Joaquin Valley, home to extensive almond plantings, and there is concern that precious water will be used for fracking instead of farming; and that chemicals in fracking fluids will contaminate ground water and possibly even almond kernels.

### **Just Wondering**

If, as many say *Water is the New Oil*, why aren't we building trans-continental pipelines that carry water instead of oil?

### **Serial Killers and Bees Use the Same MO**

It has been shown that neither serial killers nor bees work close to home. Frank Eischen has shown the same with his almond work. Pass this on to that WA apple grower who insists on scattering a pallet here and a pallet there throughout his orchard (check out *Serial Killers Bees*).

### **Recruiting Tool for Science**

Before making a final decision, young people pondering a career in law or on Wall Street, rather than science might contemplate these words from a scientist (July/August *Atlantic*): *"Doing good science is like having good sex.*

*It excites you all over and makes you feel as if you are all-powerful and complete.”*

### **At Your Local Fair this Summer**

Check out the booth exhibiting *The Man With No Tattoos*. (John Waters)

### **How to Know You're in the Top 1%.**

You use “summer” as a verb.

### **Thanks**

Hats off to beekeepers that summer in North Dakota - or anywhere else where bees can bring in pollen and nectar --- or scratch out a living in California. Hope your colonies fill up with honey - but not enough to plug out the brood nest, or delay mite treatments. It's tough being a beekeeper any time of year, spring, summer, fall or winter and I have the utmost respect for those that deliver bees to us - you're in the top 1% in my book.

We'll be in touch, or call anytime.

*Joe Traynor*