



CENTRAL COAST BEEKEEPERS NEWSLETTER

September 2019

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NEXT MEETING SEPTEMBER 25TH, 2019

PRESIDENT'S MESSAGE

By Jon Sumpter

Central Coast Beekeepers' Association September Meeting

September 25, 2019, Newport Public Library 6PM meet and greet, about 6:30 meeting until about 8PM. Board meeting at 5 PM.

This month's guest speaker is Feidel Esponzo . He was a beekeeper in Mexico using masonry pots as hives. A syringe may be used to extract honey and there are other interesting differences. This is an original method for bee husbandry with stingless bees. Nice thought, but they bite.

Winter is coming to the Oregon coast and to our bees. If you have the time, come to "Friday at the Apiary" at Honey Bee Lab along Oak Creek in Corvallis, Oregon. Carolyn Breece and her staff do a great job relating the things that happen inside and outside of our bee colonies. Decisions need to be made in a timely manner and Carolyn and friends help the new and experienced beekeeper to make decisions easier, why and when.

This month's meeting is going to be very interesting. Come one, come all.

How to Choose an Apiary Site

By Dr. Dewey M. Caron



A recent inquiry from an upstate beekeeper about the "best" place for an apiary site, got me into the recent literature. A long time ago Mike Burgett and I wrote a book chapter on "Urban Apiculture" in which we stated that the suburban/urban environment was not necessarily favorable for bee colonies, especially in the fall and that they were highly variable in offering honey surplus for harvest. Three relatively recent studies all remarkably concur that while urban sites might be better for producing large colonies, agricultural, not urban sites, are better for honey production.

In a study in western Tennessee, three apiaries in different agricultural areas were compared with one within an urban site. **Study results demonstrated that "the landscape's composition significantly affected honey bee colony performance and development". Colony weight and brood production were significantly greater in colonies at the ag sites compared to the urban site. There was higher queen and colony losses in the urban site and the colonies demonstrated "no significant weight gains".**

Authors of a study comparing apiaries from downtown Columbus, Ohio to agricultural fields outside the city found "no support for the opinion that honey bees in urban landscapes are more successful than those in cropland. To the contrary, we find that colony food accumulation responds negatively to urban land cover in landscapes dominated by urban or agricultural land use, a pattern that we attribute to the influence of late-season floral availability, particularly goldenrods." Clovers along with goldenrod as determined by analysis of pollen collected from pollen traps, constituted the major advantage of the ag lands to the bees."

Kirk E. Anderson, a scientist at Carl Hayden Bee Research Center in Tucson, Arizona, examined overwintering success and colony strength for almond pollination in February of bees overwintered in two crop settings. **Results revealed "colonies foraging on Conservation Reserve Program (CRP)** land with a strong cover of clover species and alfalfa do more than three times as well than if they are put next to crop fields of sunflowers or canola."** The bees with the more diverse forage adjacent to CRP lands were graded higher for almond pollination in February (78% in highest category vs 55%).

The USDA study also included a molecular biologist to determine if a colony biomarker might be used to determine how to measure bee colony health foraging in different environments. Ramesh Sagili, OSU Bee Lab has also demonstrated that the levels of vitellogenin was determined to be the "best predictor of colony size after winter." They state lithe benefits of high quality forage such as that provided by CRP land carries right through the overwintering period and leaves bees in the best shape to build up their numbers before being needed to pollinate almonds in February and early March³

The diversity and availability of pollen foraged by honey bees across urban and suburban areas in the US vary drastically with the seasons, according to a study published in *PLOS ONE* by Juliana Rangel and students from Texas A&M University. The authors attached pollen traps on a total of 394 sites with at least two hives each in urban and suburban locations across California, Texas, Florida, and Michigan. Total pollen diversity was significantly higher in the spring across all locations as compared to other seasons. Top pollen sources across all states included legumes, oaks, roses and daisies. Lau, Pierre, et al 2019.⁴

**CRP is a farm reserve program which is part of the United State Agricultural Dept. In exchange for a yearly rental payment, farmers enrolled in the program agree to remove environmentally sensitive land from agricultural production and plant species that will improve environmental health and quality. Contracts for land enrolled in CRP are 10-15 years in length. The long-term goal of the program is to re-establish valuable land cover to help improve water quality, prevent soil erosion, and reduce loss of wildlife habitat. For informational video on CRP, please click [here](#).

1 Alburaki M, et al. 2017. *Agricultural Landscape and Pesticide Effects on Honey Bee (Hymenoptera: Apidae) Biological Traits*. *J Econ Entomol* Jun 1

2 Sponsler O, Johnson R. 2015. *Honey bee success predicted by landscape composition in Ohio, USA*. *Peer Jour*. 3:e838

3 Ricciigliano, V. et al., 2019. *Honey bee colony performance and health are enhanced by apiary proximity to US Conservation Reserve Program (CRP) lands*. *Scientific Reports*, 2019; 9 (1)

4 *Seasonal variation of pollen collected by honey bees (Apis mellifera) in developed areas across four regions in the United States*

State Fair Champion

Our very own Pat Wackford was a winner at the State Fair. Pat, forever modest, expressed her surprise in an email:

“Hi

I'm so surprised! I got an email from the fair re: my honey entry.

I entered Extracted, Light Amber and got a second place!

I never thought I would get more than a thank you for my entry.

Just a very exciting day.

Thanks, Max, for your help with suggestions on prepping the jars.”

Take care. Pat “

Why male honeybees try to blind their queens



[CHRISTIAN COTRONEO](#)



A queen typically mates with about a dozen drones in mid-air, but that number sometimes reaches 40. (Photo: JSseng/Shutterstock)

You don't casually date a queen.

Most male honeybees only get one shot at it. And she doesn't have time for dinner.

So what does a humble drone do to make sure she always remembers him? Wear his best pin-striped suit? A bouquet of pollen-rich daisies?

Researchers at the University of California, Riverside, suggest he brings something a little darker to the party: a toxin that makes her go blind.

In a paper published [in the journal eLife](#), scientists describe how honeybees are so keen to be the queen's one-and-only, they try to incapacitate her with toxins in their semen.

The goal isn't so much to impress the queen, but rather to ensure that the bee wins the sexual arms race over his many rivals. A drone's chances of packing the winning semen are greatly diminished by every other bee she mates with.

For the queen, the blindness is only temporary — lasting anywhere from 24 to 48 hours. But it may be just long enough to keep her from flying. And if she can't fly, good luck getting to the other dates on her busy schedule.

"The male bees want to ensure their genes are among those that get passed on by discouraging the queen from mating with additional males," Boris Baer, the study's lead author, notes in a press release sent to MNN. "She can't fly if she can't see properly."

No, that doesn't sound particularly gracious. But then again, honeybees aren't expected to survive the hookup.

In fact, if they score, they're dead. But that doesn't stop as many as 40 drones from trying to mate with her — all in mid-air, during what's called a ["nuptial" fight](#).

Male bees scramble to hook up with the queen bee. And she rips their hearts out. Or rather, their endophallus. That's the part of every male honeybee that's inserted in the queen and, well, you know ... the birds and the bees and all that.

The thing is, the climax is so forceful, the torrent of semen [ruptures the endophallus](#), leaving the tip inside the queen — and the male bee is presumably in shock over how the date could have gone so terribly wrong.

It doesn't last long. The queen's nuptial flight leaves a trail of withered, endophallus-less corpses behind.



Male honeybees only get one chance to make a lasting impression on their queen. (Photo: Seyfettin Karagunduz/Shutterstock)

Indeed, the queen is a busy bee — which may be why drone semen is such a heady cocktail.

That bodily fluid is engineered to slow her down, maximizing the chances of one particular bee's genes prevailing. To that end, the researchers identified a couple of proteins in the drone's bodily fluids. One of them attacks the sperm of other males, aiming to undermine the efforts of other suitors. The other protein, described for the first time in the study, goes to work on the queen's brain, affecting her vision.

To test its potency, researchers dosed a group of queens with bee semen. A second group of queens was given a saline solution. When they tracked the movement of all the queens, the scientists noted the semen-addled queens were much likelier to get lost on their way back to the hive.

What's more, electrodes attached to the brains of queens suggested the bee semen had compromised their sensitivity to light.

It's hard to blame a doomed drone for wanting his lineage to carry on. But as callous as the queen may seem, she's only looking out for the colony. More mates means more

semen — she can pack away [as much as 6 million sperm](#), keeping them fresh for as long as seven years.

That adds up to around 1.7 million buzzing baby bees in her lifetime. And, some day, many of them will also get a chance to date a queen.

They, too, will do everything they can to make a lasting impression — and perhaps even be king for a day.

2019 Fall Conference in Florence

**Oregon State Beekeepers Association
2019 FALL CONFERENCE**

Florence Events Center
Florence, Oregon

Priya Chakrabarti Basu,	Oregon State University
Tom Cinquini,	Sowers Apiaries
Jay Evans,	USDA-Beltsville
George Hansen,	Foothills Honey Company
Brandon Hopkins,	Washington State University
Melanie Kirby,	Washington State University
Andony Melathopoulos,	Oregon State University
Garth Mulkey,	GS3 Quality Seeds Inc
Morris Ostrofsky,	Master Beekeeper-Washington
Mike Palmer,	French Hill Apiaries
Ramesh Sagili,	Oregon State University
Steve Sheppard,	Washington State University

and More . . .!

OREGON STATE BEEKEEPERS ASSOCIATION
October 25-27, 2019
SAVE THE DATE!

Session and registration information is posted at orsba.org.