



# CENTRAL COAST BEEKEEPERS NEWSLETTER

February 2020

ISSUE NUMBER 46

NEXT MEETING FEBRUARY 26 , 2020

## **DON'T MISS OUR INFO PACKED FEBRUARY MEETING!**

**February 26<sup>th</sup> at the Newport Library at 6pm**— hive inspection (when, why, how to prep for, the use of a diary and the basics of examination) given by Kathy Cope, Journey Beekeeper in the Oregon Master Beekeeper Program

Starting at 7pm our second session will be on diseases of the hive will be given by Carolyn Breece, Senior Faculty Research Assistant, OSU Honeybee Lab. This session will cover the various diseases of the hive, how to detect them and how to prevent/treat them.

## FEBRUARY PRESIDENT'S LETTER

### By Becca Fain

As I look out the window at the blue sky this morning, I am hopeful that we will get our usual 2 beautiful weeks on the central coast in February. Unfortunately, I can also see good sized piles of hail that fell in the early hours and the thermometer is reading 37 degrees. The bees are not amused!

We have been doing mite checks and even those hives with very high counts a month ago are now down to only 1 to 2 mites on the sticky boards 24 hours after treatment with oxalic acid vaper. Hope this bodes well for winter survival though we have had 2 dead outs thus far. With less than pleasant weather so far, we have been putting on sugar patties every 3 weeks or so and are about to put on another round, this one with some pollen substitute mixed in for a bit of a boost. On the few days we have had lately when the rain has stopped and the weather has warmed up over 50degrees we have seen lots of bees out and about collecting pollen from our rosemary bushes. A good portender of spring to come!

Speaking of bees, I hope that all of you have had a chance to take a look at your hive(s) and determine that they are still alive. Hopefully, you have also done at least a sticky board to get an idea of their mite levels and have begun some form of treatment if warranted. As I indicated in last month's newsletter, it is time to begin thinking about whether or not you need to order bees this year. We now know that **we will need to confirm our final order on March 16<sup>th</sup>** for delivery in April. The cost of 4pound packages (about a pound more than most packages) will be \$115 and nuc's will be \$155. There will be a \$5 delivery charge for each total order to cover gas and we will be delivering bees to locations in Lincoln City, Newport, Waldport, Yachats and Florence. In order to be eligible for these great low prices, you must be a paid member of the Central Coast for 2020 before we submit our final order. You can send in the attached membership form or bring it to our next meeting on February 26<sup>th</sup>. If you want to order bees, you can either respond to this e-mail address – [centralcoastbeekeepers@gmail.com](mailto:centralcoastbeekeepers@gmail.com) -with your name, email, phone number, and what you wish to order or join us at the February meeting where a list will be passed around. **Link to membership form:** <http://www.ccbaor.org/SupportFiles/Reference/CCBAMembership1.pdf>

Our meeting list for 2020 is included here for your calendar and I wanted to direct your attention particularly to the fact that we once again need to adjust or regularly scheduled 4<sup>th</sup> Wednesday of the month schedule for both March and April due to conflicts with the use of our room at the Library. Instead of our regularly scheduled meeting for March 25<sup>th</sup>, we will now be meeting on April 1<sup>st</sup>. In April we will again need to adjust our meeting from the 22<sup>nd</sup> to the 29<sup>th</sup>.

We do not anticipate having to adjust any other meetings this year and hope that these changes do not inconvenience you.

## CENTRAL COAST BEEKEEPERS MEETING TOPICS for 2020

Early session 6:00-6:45pm, 2<sup>nd</sup> session 7:15- 8:15pm

**February 26th**— early session on hive inspection (when, why, how to prep for, the use of a diary and the basics of examination) given by Kathy Cope, Journey Beekeeper in the Oregon Master Beekeeper Program

The second session on diseases of the hive will be given by Carolyn Breece, Senior Faculty Research Assistant, OSU Honeybee Lab. This session will cover the various diseases of the hive, how to detect them and how to prevent/treat them.

**April 1st** - The early session will be done by Stan Scotton and will focus on what you need to get started if you are getting bees this year including equipment, Apiary setup, installation of packages and hiving nucs.

The second session will be on splits – how and why to make them – and will be led Max Kuhn.

**April 29th**— early session on feeding by Max Kuhn, Journey Beekeeper working on the Master Level with the Oregon Master Beekeeping Program. This session will cover when to feed, what to feed and how to feed to insure a strong and healthy hive.

The second session will be led by Dr. Priyadarshini (Priya) Chakrabarti Basu, Research Associate at the OSU Honeybee Lab. This session will cover the importance of nutrition to a successful bee year, recent research findings regarding the nutritional needs of bees and how we can apply this to our management practices.

**May 27th**— The early session will be on reading frames and mite boards— what they can tell you about your hive's health and how to

utilize this data for your management process and will be led by Rick Olson.

The second session will focus on swarms - Swarms Triggers, Behavior and who leaves - Understanding the behavior of a colony in its preparation to swarm goes a long way toward hive management. It becomes a matter of appreciating the signs we can hear, see, that lead us to conclude the actions of a colony. What happens post swarming from the hive? How and why does the swarm relocate to a new home? Charlie Vanden Heuvel a long-time beekeeper from Hood River will present.

**June 24th** – early session with hands on demonstration of honey extraction methods, led by club members Jim Parrish and Jon Sumpter

Second session by Marjie Ehry, the only certified Honey Judge in the state, who will talk about why you should enter your honey in contests and how to successfully prepare it so that it has a good chance of winning a ribbon. Pat Wackford will share her experience in entering her honey and winning a ribbon at the state fair.

**July 22<sup>nd</sup>** – the early session will be led by Andony Melathopoulos, Assistant Professor of Pollinator Health, OSU, Extension; creator of PolliNation – a pollinator health podcast and the Leader of OSU’s participation in the Oregon Bee Project. He will be speaking about the Oregon Bee Project along with Buck Bowling talking specifically about Mason Bees.

The second session will cover preparation for the end of the Bee Year – what needs to be done once the honey is extracted and before we put the bees to “bed” for the winter and will be led by TBD

**August 26th**– TBD

**September 23rd** – TBD

**October 28th**– Products of the Hive

**November 18th**– Year end celebration, honey tasting and raffle

## For those of you who missed the information packed January meeting

In January, we had two great speakers. The first, Rick Olson, Journey beekeeper in the Oregon Master Beekeeper Program, spoke about the varroa mite lifecycle and the monitoring and treatment options to get you prepared to treat as soon as the weather allows. To obtain a free guide on varroa management go to the Honey Bee Health Coalition website or use this link: <https://honeybeehealthcoalition.org/>



Rick Olson

Our second speaker was Ramesh Sagili, PhD at Oregon State University, Corvallis, Oregon. He discussed his current research which is described below. His testing has revealed that the best ways to get accurate varroa mite counts in order of accuracy are: lab testing, alcohol wash, sugar wash (almost as good as an alcohol wash), and least accurate is the sticky board, although it has value in monitoring mite presence. Read on for more about the actual treatments.





Dr. Sagili

## Update on Varroa Research Projects at Oregon State University

Ramesh Sagili, PhD—Oregon State University, Corvallis, Oregon

### (1) Effects of Oxalic Acid Sublimation (Vaporization) On Honey Bee Brood

Oxalic acid (OA) dribble method has been used by beekeepers for several years to control Varroa mites. Over the past couple of years, there has been increased interest among both backyard and commercial beekeepers regarding using oxalic acid in vapor form (sublimation) during brood rearing season (spring, summer, and fall). Toxicity to brood (eggs, larvae, and pupae) is a concern when using

oxalic acid in the presence of brood in a colony. To evaluate toxicity of oxalic acid vapor to brood, we conducted a short study during July/August 2019. For this study, we used 30 colonies of similar size (two deeps) with equal number of frames of bees and brood, and similar mite levels. Out of the total 30 colonies, ten received OA treatment, ten colonies served as controls (no OA), and the remaining ten colonies received formic acid (Formic Pro). Formic Pro was used as a positive control, and each of the formic acid treatment colonies received two pads of Formic Pro. Each oxalic acid treatment colony received a single dose of 2 gm oxalic acid vapor as per label recommendation (see Figure 1). In each experimental colony we marked 50 eggs, 50 young larvae, and 50 old larvae using acetate sheets (see Figure 2) before the application of treatments (oxalic acid vapor and formic acid). A few Master-level students from our Master Beekeeper Program also participated in this study. Mortality of eggs and larvae was recorded 24 hours, 48 hours, and one week after the oxalic acid vapor and formic acid treatments.



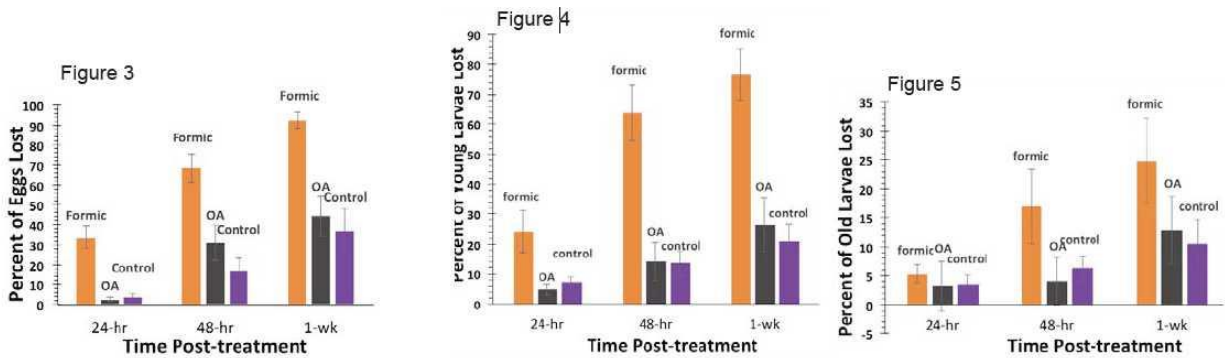
We did not observe any significant differences in brood (eggs and larvae) mortality between colonies receiving oxalic acid and control treatments. However, the brood mortality was significantly higher in the formic acid treatment group when compared to the oxalic acid and control groups (please see Figures 3, 4, and 5).



## (2) Evaluating Potential Amitraz Resistance in Varroa Mite Populations in USA and Canada

There is anecdotal evidence that beekeepers are unable to get optimal Varroa control with amitraz (Apivar™). Due to lack of adequate effective Varroa control products, beekeepers (especially commercial beekeepers) over the years have resorted to off-label amitraz formulations to control Varroa mites. The average concentration of off-label amitraz treatments is approximately 12.5 percent, which is approximately four times higher than the concentration in Apivar™ (3.3 percent amitraz). Some beekeepers have reported using off-label amitraz formulations several times in a year to get adequate control. There is concern that Varroa mite populations may be developing resistance to amitraz due to extensive and long-term use of off-label amitraz. During July/August, 2019, we evaluated Varroa mite resistance to amitraz (Apivar™) between two geographically separated mite populations: Oregon, US, and Alberta, Canada. We chose these two geographical regions because of significantly different beekeeping management practices with respect to amitraz use and differences in reported efficacy of amitraz in Varroa control. Oregon beekeepers commonly use Apivar™ and off-label amitraz formulations each year, while Alberta beekeepers do not use off-label amitraz products.





We pre-screened approximately 500–600 colonies in Oregon with alcohol washes and used about 300 colonies for this study that had at least 2 percent mite infestation levels. A modified field assay similar to Pettis et al. (1998), which was designed to test mite resistance to fluvalinate, was used. About 300 honey bees from a brood frame were collected from each colony and placed in a 500 ml glass jar with a 25 x 38 mm section of Apivar™ strip suspended in the jar for contact exposure. After 24 hours, all dead mites were shaken out from the jars and mite mortality was recorded. Next, the bees in the jars were washed in 75 percent ethanol to release any remaining mites, which we presume to be resistant to Apivar™. Preliminary results indicate that there was no significant difference in Varroa mite mortality between Oregon (US) and Alberta (Canada), with average mite mortality of 91.3 percent (US) and 92.5 percent (Canada). We plan to continue this study to get deeper insights regarding Varroa resistance to amitraz, as amitraz is an extremely important tool available to beekeepers and it would be devastating to lose this valuable option.

### Book Review – “Queen Spotting” by Judy Scher, LCBA Webmaster

“Queen Spotting” by Hilary Kearney, published by Storey Publishing 2019, is possibly the best “bee-read” of 2019. It is a small book with beautiful photos, most of which are partial frames covered with bees, each including a queen. There are 48 fold-out photos, every one asking you to find the queen. They start out easy and progressively get more advanced. When I was a beginner beekeeper I desperately wanted a “find the queen” book like this! And yes, there is an answer key at the end of the book. But not only is the reader happily challenged by these photos. This little book is full of information: worker bees, hive components, worker activity, drone activity, honey bee life cycle, swarms, the life of queens, and techniques for finding the queen, of course. All this information is supported by wonderful photographs. Hilary Kearney’s passion for beekeeping will ignite yours as she covers all of these topics. This is a book for every beekeeper, beginners and those with decades of experience. It will be appreciated also by non-beekeepers, who will be awed by the information and photographs.



Photo by Max Kuhn

## **Pollen Shortage? Not today**

Even in winter, bees can find pollen, at least at CCBA member Max Kuhn's hives.

## **Winter Bees** by Ken Ograin, LCBA Member

Things to do: Don't wait for a warm day to do these three things, heft your hive, clear entrance of dead bees and use your sample board. These tasks need to be done on a regular basis throughout the winter. Hefting will let you know if they need food and everyone should have some type of entrance reducer in use to keep mice out. Sample boards have a bigger use than just checking mite loads.

If you find your hive is low on food you need to apply some form of dry sugar. This can be as simple as candy canes or you can use a candy board.

It will be several weeks before you will be able to use liquid sugar. You need to wait until temperatures are consistently about 50 degrees daytime temperature

and bees are flying regularly. The same holds true for entrance reducers. Keep them in and clear of dead bees until the bees can keep up with household duties.

While sample boards tell you about mites, they can also tell you about the health of your hive. Learn what mouse droppings look like and the different colors of wax debris. Brood capping are dark in color while honey store cappings are light in color.

Keep doing these things until you can do an internal hive inspection. If you find a dead hive in your apiary close it up or get it out of the bee yard.

## **Notice from the OSU Bee Lab, Carolyn Breece**

It's winter, and while you're probably thinking about fitness, we are thinking about Sugar!

Our bees are at their greatest risk of starvation in late winter and early spring. Beekeepers often supplement a colony with emergency bee feed in the form of fondant or candy when it's too cold for feeding syrup. In past Friday in the Apiary sessions we learned that cooking sugar and adding an acid (vinegar, cream of tartar, etc.) can form a compound called hydroxymethylfural or HMF. HMF is toxic to bees! We have since stopped cooking our fondant.

But then we got to thinking: if we don't cook the sugar, but do add acid, will that produce HMF? If we do cook, how does temperature and duration of cooking affect formation of HMF? Will HMF form if you do cook sugar and do not add acid? I am sure there are other combinations of cooking and adding that you can think of. We asked these questions to a chemist/beekeeper and he offered up a brilliant idea: Let's test out all these different methods and see for ourselves! OSU has a lab that can test our fondant for HMF. Wow! We will collect recipes and identify the 5 most common methods. Then the OSU Honey Bee Lab will make 3 batches of each recipe (for replication) and submit the samples to the chemistry lab. If this process goes smoothly and timely, we will have our big reveal at the February Friday in the Apiary.

## **Bee Nutrition Primer by Dr. Dewey M. Caron**

Honey bee dietary needs are carbohydrates in the form of nectar for energy and pollen which contains protein, lipids, vitamins, minerals, phytochemicals and cholesterol for growth and gland development. Beekeepers know the major bee food of nectar and pollen must first be processed with conversion of nectar into honey and pollen into bee bread.

Pollen is especially critical for bee larvae, the growth stage of metamorphosis, and for new adults which need the proteins, lipids, minerals, and cholesterol to kick-start their glands. These compounds enable the bees to produce brood food, pheromones, beeswax, etc. Proper nutrition is especially critical for colonies that are expanding rapidly in their spring and newly started colonies. It is also needed for the fall reared adults that require fat body vitellogenin to suspend the aging process and successfully overwinter.

Studies show bees with access to high quality pollen have lower pathogen levels, have more brood for overwintering success and are less susceptible to Nosema, the gut parasite. Plant phytochemicals (including sterols), supplied by pollen, although in minute quantities, are responsible for molting hormone. This chemical guides bees through their metamorphosis), cell membrane stability and undoubtedly other vital physiological processes in bees. Intact cell membranes are vital to keeping things corralled in cells that need to be there and for keeping other things that shouldn't be there, like pesticides and pathogens, from entering cells.

Studies are underway at OSU, directed by post doctorate Priyadarshini Chakrabarti, to better determine both the quality and quantity parameters to define nutritional adequacy of the bee diet, especially as regards plant phytochemicals and cholesterol. Natural nectar and pollen sources vary greatly. Not all flower pollens necessarily supply the essentials of a bee diet. Diversity in the diet helps make up for source deficiency. Likewise, our managed bees are heavily supplemented with various protein sources, a variety of vegetable oils and sugars, such as high fructose corn syrup. How do these supplements factor into the nutritional needs of bees?

A recent publication from Priya from the OSU studies reviewed a spectrum of bee diets both natural and supplemental toward seeking a better understanding as to what amino acids, phytochemicals and cholesterol are critical. If you would like more information on her studies you can access her publication “the omics approach to bee nutritional landscape” at <https://www.ncbi.nlm.nih.gov/pubmed/31538263>. Priya shared some of this information at the most recent Oregon State Beekeepers conference in Florence.

Poor nutrition can be a factor in weakened colonies or colonies not developing seasonally due to the loss of weeds in agricultural fields and homeowner lawns. These losses are due to increasingly heavy use of herbicides and monocultures of only single flowering sources available in the bee diet, as when the bees are involved in commercial pollination. Landscape alterations that remove natives and substitute plants of little use to bees can effect the bees’ intestinal microflora. This may be due to heavy reliance on artificial feeding of colonies and antibiotic/pesticide exposure. Also decreasing natural forage, principally due to human disturbance of the habitat where bees forage, all have cumulative negative impacts. Bees that are weakened because of poor or inadequate nutrition become more susceptible to other factors. Instead of the diet aiding the bees to get through challenges like mites/miticides, a poor diet may in fact be one of the underappreciated factors in heavy colony losses.

## **Asian Giant Hornet Invasion Threatens Honey Bees in Pacific Northwest**

Except from the New York Times, December 24, 2019

An expert said of the hornets: “They are sworn enemies of honey bees. I would say a bee’s worst nightmare.” By Neil Vigdor Dec. 24, 2019

As if honey bees didn’t have enough to contend with, from pesticides to bacterial pathogens, another nemesis has emerged in the Pacific Northwest, one capable of freaking out humans, too. It’s called the Asian giant hornet — and is also known as the yak-killer hornet, the commander wasp in Korea and the tiger head bee in Taiwan, according to experts. As the names indicate, the hornets are indigenous to Asia, but some appeared for the first time this month in



Washington State, where agricultural officials have issued a pest alert and warned that the hornets pose a threat to honeybees. They showed up in British Columbia in August, prompting a similar advisory from the Canadian province's agriculture ministry.

The reputation of the mammoth hornets — which are distinguished by their yellow heads and can be nearly two inches long with a wingspan of up to three inches — precedes them. May Berenbaum, the head of the entomology department at the University of Illinois at Urbana-Champaign, said on Monday that the hornets can wipe out an entire beehive. They're generally not aggressive toward humans but their stingers are about six millimeters long and can inflict substantial pain and possibly even death in someone who is allergic, she said. "You want to talk about beepocalypse," Professor Berenbaum said. "They are sworn enemies of honey bees. I would say a bee's worst nightmare. Probably the worst nightmare of a lot of people, too."

A resident of Blaine, Wash., which is on the Canadian border and about 30 miles south of Vancouver, found a dead hornet on Dec. 8 that was then collected by state entomologists, the Washington State Department of Agriculture said. The agency said it confirmed that the specimen was an Asian giant hornet. The resident reported that a second hornet had been flying near a hummingbird feeder before it disappeared into a nearby forest, officials said. "Though they are typically not interested in humans, pets or large animals, they can inflict a nasty sting if threatened or their nest is disturbed," the state agency said in the pest alert, on Dec. 19.

In British Columbia, officials advised residents to report any sightings of the hornets to the Ministry of Agriculture and take photographs if possible. "Asian Hornets are not interested in humans, pets and large animals," the ministry said. "They hunt insects for food. The only time hornets will attack is when their nest is disturbed. Asian Hornets will feed on honeybees and are capable of destroying hives in a short time period."

Insect experts said that the pests, which are among the largest hornets, are usually dormant at this time of year. They make their nests in the ground. Professor Berenbaum said there was a distinct possibility that the hornets were "stowaways" on a ship that crossed the Pacific and could be attracted to any kind of sugary fermenting cargo. They could have also nested in any soil used as ballast

material in ships, she said. “I can’t imagine why anyone would deliberately bring this over,” she said. “There are so many ways insects can be accidentally transported.”

Unlike honey bees in North America, honey bees in Asia have developed their own defenses against the Asian giant hornet as they have evolved, Professor Berenbaum said. “When a hornet gets into the nest, they mob the hornet and generate enough body heat to kill it,” she said.

## A Study of You!

A group of researchers at the University of Oregon are conducting a study to better understand how people experience working both a “primary” job and a “hobby” job. For example, a person might have a “primary” job as an accountant at a company and a “hobby” job as a beekeeper in the evenings and on weekends. The goal is to understand the characteristics of both of these jobs and the impact on emotions, attitudes, and behaviors.

For this study, they are looking specifically for people who work 30+ hours in a “primary” job and also work in a “hobby job.” The study will involve completing 3 short (about 15 minutes each) surveys over 3 months. The participants must also be willing to ask a coworker at their “primary” job to participate in one short study on their behalf. Each participant will be thanked with a **\$15 Amazon or Starbucks gift card** for completing three short surveys and asking a coworker at your “primary job” to complete one short survey. Coworkers will receive a \$5 gift card for participating.

If you are a hobby jobber, and would like to register for the study, **click here:** [https://oregon.qualtrics.com/jfe/form/SV\\_7P0XNZgdTyR7X3D](https://oregon.qualtrics.com/jfe/form/SV_7P0XNZgdTyR7X3D). Please note that your participation is completely voluntary and you can end participation at any point. If you know “hobby” jobbers, your help in reaching out to them on behalf of U of O would be appreciated. Thank you for your help!

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