

THE MARIN BEEK NEWS

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February 2019

What You Missed

Our last meeting featured a talk by Ramesh Sagili, PhD is associate professor in the College of Agricultural Sciences at Oregon State University, Corvallis, OR. He obtained his PhD in Entomology from Texas A&M University.

Dr Sagili's talk was titled "Honey Bee Nutrition: What We Know and What We Need to Know".

The program at Oregon State focuses on bee health. Nutrition is part of that program. Bee nutrition has been ignored until recently. They say you are what you eat. Nutrition is the first line of defense.

Optimal nutrition boost:

- Immune system and decreases susceptibility to pest/pathogens
- Detoxifies enzymes – all organisms have these that tend to fight off pesticides, etc.

Honey Bee Nutrition

Macronutrients:

- Carbohydrates (nectar/honey)
- Proteins (pollen)

Micronutrients:

- Vitamins
- Minerals
- Lipids

Pollens:

- Is the primary source of protein.
- Most pollens 10% - 40% protein.
- Also a source of lipids, minerals, vitamins, sterols.

Nutrition especially protein is crucial when the colonies are rearing winter bees (diutnus bees)
Vitellogenin (glycolipoprotein) – is the key to longevity (very complex protein) Queens have a lot of it which allows them to survive longer.

What's the Buzz?

Our next meeting will be on Thursday February 7, 2019 at the American Legion Log Cabin, 20 Veterans Place, San Anselmo, CA. starting at 7:30 pm. The meeting will feature [Leo Sharaskin](#). His talk will be on "Horizontal Hives", and "Natural Beekeeping".

Upcoming Meetings:

March 7, 2019

[Billy Synk](#), Director of Pollination Programs, Project Apis m, "Supporting Pollinator Habitat"

April 4, 2019

[Rachael Bonoan](#), Post doctoral researcher, Tufts University and Washington State University, "Why Bees Like Dirty Water"

May 2, 2019

[Mark Winston](#), Professor and Senior Fellow, Morris J. Wosk Centre for Dialogue

June 6, 2019

[Tom Seeley](#), Department of Neurobiology and Behavior, Cornell University, "Darwinian Beekeeping"

July

No meeting – Marin County Fair

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Sterols:

All insects including honey bees obtain sterols from diet.

24-methylene cholesterol – major sterol source – obtained from pollen

Sterols are precursors of some important hormones such as molting hormones.

Ecdysone and juvenile hormone (makes you older vs keeps you young). Bee development is a balance of the two.

Protein supplements don't have sterols – only the protein (so no molting hormones for the larvae) You need the cholesterol from protein for bees. Other types of cholesterol don't provide the right sterols.

Borage is a good source of 24-methylene cholesterol.

Newly hatched larvae lacking dietary sterol usually die in the first or second instar.

Almond – 28% crude protein

Take Home message -

Make sure your bees have access to adequate pollen throughout the brood rearing season.

Use protein supplement with 5 – 10 percent pollen rather than supplements with no pollen.

Only nurse bees eat pollen, which they use to produce brood food.

Pollen can be collected and stored in a zip lock bag in the freezer for up to a year.

Foragers require much less protein. They feed on nectar and honey for their energy requirements but can beg the nurse bees for protein when they need it.

Understanding the need for sterols:

Evaluate dietary sterol 24-meth requirement of honey bees

Dr. Sagili performed a cage experiment.

He provided different percentages of synthetic 24-meth to see the effects on the bees that were caged. Groups with higher concentration of sterols had nurse bees with higher levels of protein and better survival rates.

Electrophysiology:

Antennal lobe – how bees smell

Mushroom bodies – area of developed memory

Diutinus Bees (Winter Bees or fat Bees) They have a longer life span than Summer bees.

Develop in the absence of brood (nurse bees use vitellogenin in brood food synthesis)

Since there is less larvae to feed; they store more of the vitellogenin in their bodies (in their fat bodies), which allow them to live longer.

Physiological differences:

- Larger intrinsic protein stores
- High fat body content
- High vitellogenin

Bees in summer give up their vitellogenin to the brood.

Winter bees need utmost attention (ideal nutrition and health) in order to sustain the colony through the winter.

When are winter bees raised in the colony?

Winter bees study:

Marked bees with a color corresponding to when they emerge – monitored the bees from August until March. Counted how many of each color are left in March. They found that most of the bees that survive emerge in October (at least in Oregon where the study was conducted). They are repeating the experiment again this year.

Supplemental forage program:

Oregon is a large producer of carrot seed. But hybrid carrot seed is a poor source of nectar and pollen. He is trying to encourage carrot seed growers to plant other flowers around the carrot fields.

Supplemental forage during almond pollination – planting mustard to see if it helps the bees during almond pollination

Another study that Dr Sagili conducted asked the question "Is selection of larvae to raise a new queen during emergency queen rearing random?"

He found that there is an age factor (one day preferable to 3 day old larvae).

Little is known about factors used by the hive during emergency queen rearing except there is very weak to no nepotism or kin discrimination.

He hypothesized that nutritional state of larvae is assessed when choosing larvae for emergency queen rearing. Tried starving some larvae for four hours but allowed others to be fed. Patch that was fed produced more emergency queen cells.

Checked for kin discrimination – split frames and then combined from colony A and colony B. They found that nutrition was much more important than related larvae.

Dr Sagili can be contacted at Ramesh.Sagili@oregonstate.edu

Beekeeping Classes

Classes with Bonnie Morse:

Intermediate Beekeeping class series (9 hours, \$119)

You've got your colony through winter (or not) – now what? Class sessions will include how to clean up your equipment, expanding hive size for spring, swarm prevention- and if that fails, swarm capture, setting up bait hives for swarms, identification of common pest and diseases and management options for them. Topics will also include dealing with special situations: aggressive hives, queen failures, and laying workers. Field day will include information on how to split a colony, pest and disease ID, and swarm prevention.

Class room sessions: Sundays, February 10 & 17, 9am – 12pm (2 classes, drop in fee = \$50/class, if space available)

Field Day: Sat., March 16, 1:30pm – 4:30pm, location TBD, tent. San Geronimo (drop in fee = \$60, register in advance to get address and additional information) Rain date March 23.

Register through [The Fairfax Backyard Farmer](#). Limited to 12 people.

Skep-making workshop with Charlie Kennard

DATE: February 10, 2019

TIME: 9:30 am - 4:00 pm

LOCATION: Marin Art and Garden Center, Ross

We will use a roadside grass, or rush, to begin a bowl-shaped basket, using a skep-making technique. Sleps also make excellent swarm-catchers. In the lunch break, we will have the opportunity to visit Charlie's apiary in the garden.

Participants should bring a water bowl (a 9" round cake pan is ideal for many basket projects), a pocket knife, large scissors, and small wire clippers (optional). Also bring a lunch. If the weather is fine, we may be outside,

so bring suitable clothing.

To register, visit <https://magc.org/events/skep-making-workshop-with-charlie-kennard/>

Charlie Kennard of San Anselmo is a long-time basket weaver and student of California Indian and other traditional basketry techniques. He has taught for the Point Reyes Field Institute, East Bay Regional Parks Botanic Garden, The Laguna Center in Santa Rosa and in many schools and at teacher trainings. Tule boats made in his workshops can be seen at the California Academy of Sciences, the Bay Model in Sausalito, and another is in the collection of the Oakland Museum. You can also visit a basketry plant garden Charlie has created at the Marin Art and Garden Center, where he and friends have woven a basket 13 feet across. Charlie is active in native habitat restoration in Marin, managing several projects for Friends of Corte Madera Creek Watershed.

BioFuel Oasis Bee Classes

For full descriptions and to register, go to: <https://biofueloasis.com/workshops/>

Honeybee Behavior (or Why Do My Bees Do What They Do?)

Saturday, Feb. 16th, 10am-1pm, \$40

Location: Berkeley

Learn about honeybee biology and behavior so you can better anticipate what the bees are doing in their hive.

Backyard Beekeeping

Sunday, Feb. 17th, 6-9pm OR Sunday, Feb. 24th, 9am-noon, \$40

Location: Sticky Art Lab, 1682 University Ave (at McGee), Berkeley

Learn what you need to know to feel ready to have a Langstroth backyard beehive – how to get bees, what equipment you need, where to put the hive, what the bees need, and what you need to learn/do to keep your bees healthy.

Spring Management of Your Beehive

Tuesday, Feb. 19th, 6-8:30pm, \$35

Location: Location TBD in Oakland or Berkeley

Learn how to work with the bees natural growth in spring (February – June) and keep your hive healthy. Learn what the bees are focused on in spring, so you can work with their natural instincts.

Year Round Varroa Mite & Virus Management: Keeping Your Hive Healthy

Thursday, Feb. 21st, 6-8:30pm, \$35

Location: Sticky Art Lab, 1682 University Ave (at McGee), Berkeley

Learn what to do each season to keep mite levels low and your bees thriving. We will cover the sugar roll test, organic treatment methods like drone comb frames, oxalic & formic acid treatment, and broodless periods/splitting your hive. Taking care of mites will allow your bees to overwinter smoothly and live multiple years.

How to Split Your Beehive

Saturday, Feb. 23rd, 10am-1pm, \$40

Location: Location TBD in Berkeley

Learn how to work with the bees as they expand in the spring by making successful splits. This class will go into more details of making splits and nucs, including specific splits that work well, what can go wrong and how to fix it, and which months/timing works best.

Classes with Michael Thiele:

Apis Arborea – The Ancient Craft of Tree-Apiculture and Building Log Hives

**March 2, 2019, 10 am – 1 pm PST
Interactive Live Stream**

“Apis Arborea” is an attempt to redefine our relationship with bees and to create a new paradigm of caring for them.

We will look at the reemergence of ancient and traditional ways of apiculture, such as the “Zeidler”, the craft of caring for bees in living trees. Rewilding habitat and nest restoration for honeybees are becoming increasingly essential for honeybees to survive. As wild bees survive in non-managed ecosystems and nest sites, they represent a resource for new strategies for contemporary apiculture and a fundamental shift in bee stewardship.

During the workshop, we will explore various arboreal hives designs. Michael will go step by step through the process of making vertical log hives and share lots of video footage, required tools, and other resources. This live stream gathering will provide a meeting environment, which allows for interactive learning and discussions among participants.

For more info and registration go to <https://www.apisarborea.com/events/>

Workshops with Jennifer Berry:

Hive Splitting Workshop, Saturday, March 2nd 2019 from 11-1pm.
At The Woolly Egg Ranch, Mill Valley California.

Splitting hives is a fun and easy way to expand your apiary and prevent spring swarming. Join Jennifer Berry at the Woolly Egg Ranch for this hive splitting workshop, where she will demonstrate

several basic hive splitting techniques; including walk-away splits, introducing queen cells to splits and placing mated queens into nucleus colonies. Sliding scale donations suggested starting at \$20 each.

Queen Rearing Workshop, Saturday, March 2nd 2019 from 2:00-4:00 pm.

At The Woolly Egg Ranch, Mill Valley California

Join Jennifer Berry at the Woolly Egg Ranch for a workshop on queen rearing. Jennifer will live demonstrate several methods for raising your own queens, including key preparations to ensure that colonies raise big healthy queens and different methods to induce the controlled creation of queen cells within a hive. We'll open a few of Jennifer's hives to see different stages of queen rearing, so come prepared in your light-colored clothes and bring the protective gear that makes you feel comfortable.

Please note: this is a working farm, so your common sense is appreciated. Please come prepared to be near open hives- no black, red or dark brown clothing, and bring the protective beekeeping gear of your choice.

Sign up at [Eventbrite](https://www.eventbrite.com) or check out Jennifer's website at www.jennifer-berrybees.com

Hive Tips

By Bonnie Morse, [Bonnie Bee & Company](http://www.bonniebee.com)

This can be a precarious time of year for the bees. This season, January has been relatively warm and dry and forage is plentiful. Bees are starting to use those resources to build up the population. But they may be doing so without keeping many food reserves available and that growing population can suddenly find itself with a food shortage if we suddenly get prolonged rains or the temperature drops significantly. Bear that in mind as you consider your management options at this time of year.

Adding space...or not

With warm (mid 60's), sunny days in the upcoming forecast it could be a good time to plan an inspection. Keep in mind that even mid-60's can be 30 degrees lower than bees need to keep the brood warm, so you might consider leaving small colonies alone. Not much you can do at this time of year and it will be very difficult...and sometimes impossible...for them to bring temperature around brood (which is likely there) back up to 90+ degrees. The best chance for a small colony right now is for you to be patient and let them alone for another month or more. Otherwise, your curiosity

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could lead to their demise.

How do you know it's a small colony?

- Perhaps you see very little foraging activity except when it is particularly warm or the colony is in full sun.
- If you have more than one colony, a small colony may have much less foraging activity and less pollen going in than the others.
- Put your ear up to the side of the hive and knock gently. The buzz of a small colony will be much less than that of a larger one. Fewer bees to be buzzing!



Listening for Bee Activity by Knocking

Booming colonies might benefit from some additional space. Some signs that your colony might be ready for space:

- Lots of foraging activity, even during times of the day when it cooler or the hive is shaded.
- When you open the top, there are lots of bees on the inner cover.
- If the bees had used propolis to plug up entry holes, they are starting to re-open them.

Lower portion may still be empty, even if boxes above are full of bees. We're OK with that. It can be a buffer to help prevent congestion....and swarming....a little later in the season.

Did you have a colony die out? It's important to check your frames and rule out American Foulbrood as a potential reason. While in Marin the chances are low that it was the cause, we do get several reported cases a year. Because it is such a contagious disease, you need to rule it out. Otherwise, other bees in the area could find your colony and rob it out and spread the disease. If a colony has been dead for a while, you'll want to be looking for scales on the bottom of the cells in the brood area. Don't know how to diagnose your dead out? Don't be afraid to ask for help! Post pictures to the Buzz, ask a beekeeping friend to look at your hive, bring a frame or two to a

Marin Beekeepers meeting, etc.

Time to start getting ready for next season!

- Clean up your equipment from dead outs and pulled honey supers from last season.
- Read a book.
- Sign up for a class.
- Order and assemble new equipment
- Make a plan for your spring bee increases, or what to do with all the excess bees your think your apiary will provide.

The 2019 season will be upon us quickly!

Splitting:

It's a little early for splitting, but not too early to start thinking about what to do if you have strong colonies. From what we've been seeing and hearing about, losses were high last season and lots of folks are looking for ways to replace their empty equipment with local bees.

Well-timed splits can help to make increases to your apiary, and can help reduce the likelihood for swarming. Timing is everything, though....and there needs to be an ample supply of mature drones in the area for good mating. At this point, we're not seeing a lot of adult drones, though we are starting to see more drone brood. Keep in mind that even after a drone emerges, it takes another 14 days to reach sexual maturity.

Keep an eye out on the Buzz for upcoming classes and workshops that will include splitting.

Farm Day

Marin County Farm Day 2019
Thursday, March 21, 2019
9:00 A.M. to 12:00 Noon
Marin Center Exhibition Hall

The annual Marin County Farm Day is approaching!

The 3 hour event is attended by about 1300 school children and 800 teachers and parents, so it is a busy, fun time. The Marin Beekeepers exhibit is always a favorite. It will feature Dave Peterson's observation hive, beekeepers' tools, educational posters, flashcards on honeybee vs. yellow jacket identification and extraction equipment.

It is a great opportunity to connect with kids, their parents and teachers and share some of our knowledge about honey bees. The kids always bring a lot of enthusiasm and questions. Even if you are a new

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beekeeper, it is a good opportunity to get involved and help out.



Looking for the Queen at Farm Day

Six to eight volunteers are needed. If you are interested, please contact Steve Lamb at stlamb1@gmail.com or [415-412-6125](tel:415-412-6125).

If you are not familiar with Farm Day, it is a free event, open to the public, sponsored by the University of California Ag Extension. It features over 30 exhibitors. It is a little bit like the county fair, but without the traffic and parking congestion.

There is more information about Farm Day at:

<http://cemarin.ucanr.edu/Programs/4H/FarmDay/>

Membership Renewal

Time to Renew Your Membership

Membership dues remain at \$20.00 for another year. Memberships include all family members residing in the same household and are for the calendar year. Renewals are due by the January meeting and delinquent after the February meeting. In mid February, we will purge the Buzz, Swarm and BeekAdmin list subscribers who have not renewed by that time.

We need to hear from you.

At Press time, only about half of our 315 Members have renewed for this year. If you haven't paid your dues for this year, you are already late. Even if you can't make it to the meetings you should continue to support the club with your membership dues. There

are many benefits from being a member:

- *Use of the Club's extractors, electric uncapping knives, wax-melter, hive carrier, embedding tool, and other beekeeping equipment.*
- *Free subscription to the Marin Beekeepers Newsletter (multiple times a year). Back issues on the website make for good background information and beekeeping tips.*
- *Preferred registration for beekeeping workshops (usually 4 or 5 per year) and special events.*
- *Check out books, magazines and catalogs from the Clubs extensive library.*
- *Free admission to our monthly meetings where we have speakers among the foremost bee experts in the country (normally a \$10 donation).*
- *Subscription to our "BUZZ" email listserv which is where we converse online about beekeeping in Marin.*
- *Subscription to our "SWARMS" email listserv which is where we notify members of any swarms that need hiving.*
- *Subscription to our "BeeLegal" email listserv which is where we are working to make beekeeping legal across Marin.*
- *Subscription to our "BeekAdmin" email listserv which is where we learn about and comment on Club administration and organizational leadership.*
- *Subscription to our "Event List" email listserv which is our general notification list of events and workshops.*

The best and easiest way to pay your 2019 dues is online

at www.marinbeekeepers.org. You do not need to sign in or use a password. Just click on "become a member", fill out the form and submit. Be sure to complete the payment section at the end, which is via PayPal. You do not need to have a PayPal account to pay using a credit card. There is a small transaction fee added to your dues that is assessed by PayPal.

Or... you can mail a check payable to Marin Beekeepers to our Treasurer:

Mary Nordquist
2072 Hatch Rd.
Novato, CA 94947

If all else fails, you can always pay at the door when you come to the monthly meetings.