

# Joco Beekeepers

A monthly newsletter brought to you by the  
Johnston County Beekeepers Association



JOHNSTON COUNTY  
BEEKEEPERS  
ASSOCIATION

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## Meeting Information & Agenda

- ✓ April Meeting is April 15, 2019
- ✓ The March meeting speaker will be Pat Jones, Pesticides and Pollinator Protection
- ✓ Be sure and check out the recent updates to the JCBA website.
- ✓ Free door prizes
- ✓ Right around the corner JCBA membership ([link](#))
- ✓ Right around the corner NCSBA membership ([link](#))

## BEE Basics before each meeting!

"BEE Basics" is a general talk held before each meeting. At 6:30 - 6:55. The purpose is to gain basic info for NEW Beekeepers & Reminders for experienced Beekeepers.

## Silent Auction

We are still collecting items for the silent auction which will be held on **May 20** during our regularly scheduled meeting. All items can be dropped off at the Ag Center during our monthly meeting.



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Have a story? Would you like to be featured in the newsletter?

Please submit your request to [Newsletter@jacobee.org](mailto:Newsletter@jacobee.org)

## Businesses and Services

Businesses and Services offered by JCBA are listed on our website at ([click here](#))

## Native Plants for Bees!

Link for native plants good for bees ([click here](#))

Like us on social media 

## This Month's Bee Tips!

### Last month March

- ☑ NCSBA annual Spring Meeting (usually first weekend in March)---great learning opportunity!
- ☑ Swarming under way → implement prevention measures (make splits, remove queen cells, "checker board", temporarily or permanently remove current mother queen); set up "bait" hives.
- ☑ Reverse bottom two or three boxes on hive to give queen more room to lay: most hives have moved up above the bottom hive body, leaving it virtually empty. This measure also helps reduce swarming. Caution: **be careful not to split up clusters of brood when you do this.** Two or three weeks after this reversal, it's likely that you'll need to reverse them again. (An alternative to reversal: simply add another hive body.)
- ☑ Assess for pest and/or problems (especially varroa mites, American foulbrood, and European foulbrood) and treat if needed. **Treatments should be completed by early April to limit risk of contaminating honey.**
- ☑ Check honey stores; feed (1:1 or thinner syrup) if needed.
- ☑ Look closely at the brood pattern; order new queen if current one is failing.
- ☑ Continue to replace few frames of old/undesirable comb, if needed.
- ☑ Near end of month, add at least one hone super; remove entrance reducers; equalize hives.

### This month April

- ☑ Nectar flow is often heaviest this month: make sure that all medications are out of hive unless required for bee's survival, be prepared to add new supers every 7-10 days, and remove feeders from all except new or weak hives.
- ☑ Bees should be very busy; closely examine hives that are not, and trim weeds that may be hindering flight.
- ☑ Swarming is usually heavy---continue prevention/capture measures.
- ☑ Look closely at brood pattern; replace queen if needed.
- ☑ Have everything ready to install nucs/packages that you've ordered; **feed upon installation.**
- ☑ Consider adding queen excluder to prevent brood in honey supers.

### Next month May

- ☑ Nectar flow continues---keep adding supers; get extraction/bottling equipment ready, consider adding an additional hive entrance (via 5/8" hole or shim) above brood area, for foragers.
- ☑ Swarming continues---keep up prevention/capture measures.
- ☑ Replace failing queens.
- ☑ Start planting annuals for future nectar/pollen supplementation.



- ☑ Install traps for small hive beetles if needed (i. e., if more than 20 adult beetles seen in hive).
- ☑ Place two or more bee "watering holes" in apiary, if not already present.

## Emergency Assistance for Livestock, Honeybees and Farm-Raised Fish Program

Here is a message that was sent to all chapter clubs for all members from Rick Coor the NCSBA President; North Carolina Beekeepers, The USDA has a program for beekeepers that have certain honey bee losses. Please refer to the Farm Service Agency's Emergency Assistance for Livestock, Honeybees and Farm-Raised Fish Program Fact Sheet for more information. The website is [www.fsa.usda.gov/Assets/USDA-FSA-Public/usdafiles/FactSheets/2018/elap\\_fact\\_sheet\\_april2018.pdf](http://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdafiles/FactSheets/2018/elap_fact_sheet_april2018.pdf)

Please contact your local Farm Service Agency for assistance.

Rick Coor



## Honey bee Liposuction

I don't know about you but I'm often blown away by the revelations I have when reading something new about beekeeping. As a retired registered nurse, I marvel at the coincidences in physiology between the honey bee and us humans. I came across an article this month that popped up on my cell phone, of all places, that came from Entomology Today called An inside Look at How the Varroa Mite's True Diet Was Discovered.

<https://entomologytoday.org/2019/02/21/inside-look-how-varroa-mite-diet-discovered/>

I was hooked immediately because I heard that Varroa mites feeding on Hemolymph was debunked.

This parasite originated from Africa, then traversed to Asia and finally the world when it made its debut in the US in the mid-1980's. It was originally discovered on *Apis cerana*, the Asian honey bee where it did not kill its host. However, the same mite on the European honey bee or any *Apis mellifera* honeybee would kill the host who has not developed any resistance without beekeeper intervention. The worst part about this varroa mite is that it's a vector for viral transmission on the developing pupae and these viruses can cause malformations such as Deformed Wing and diseases like Chronic Bee Paralysis and possibly Sacbrood or others. Mites only reproduce on bees and get around from host to host phoretically such as on the body of the bees.

The article discussed the various methods of testing used by scientists which derived the identical results thereby validating the prior results were accurate and unbiased. The article first gave an overview of the varroa mite and why it is so aptly named Varroa destructor. Sadly, Varroa Mites are here to stay, for now. It then proceeded to propose why the varroa mite could not possibly feed on the bees' hemolymph, bee blood, a theory long held by the beekeeping community.

Research using electron microscopy of frozen sections of honeybees with the varroa mite's mouth parts attached demonstrated that the varroa mites do not own the proper mouth parts to consume hemolymph. Moreover, they were in fact digesting and consuming the fat stores exclusively on the adult bee. Unlike the tick who can feed on blood anywhere on a human, the varroa mite is selective as to the best feeding spot on the adult bee. When not reproducing within the pupal cell where it still feeds on the fat of the pupae and transmits viruses into its soft vulnerable open circulatory system, the varroa mite is riding on adult bees consuming fat stores until it's had its fill and is ready to reproduce again in a waiting pupal cell before it's capped.

Researchers found that although phoretic varroa mites can be found being transported on the dorsum of the abdomen or thorax and even on the head, that's not where the best fat stores are located. In fact the majority of Varroa mites are found feeding on the ventral side, or underside, of

the abdomen where they tuck themselves between the plates against the soft membranes. Here they get a grip with their footpads firmly attached allowing the mite to feed without being easily dislodged using its short mouth parts. The mouth parts cause a wound in the membranes that allows them to reach the fat stores which are close to the surface. These important membranes are like a barrier that keeps moisture in and bacteria out...similar to our human skin. I know how infected a puncture can get from the poke of a sewing needle or a fishing hook.

In an effort to confirm their findings, researchers used cyanoacrylate, a type of super glue, on several bees to hold them fast and set hungry varroa mites on them. When the varroa mites were later dissected, they found bee fat in the stomach contents. To further prove this fact, researchers then dyed the hemolymph of bees yellow and the fat was dyed red. Since bee blood isn't red, there was no confusion. Sure enough upon inspection the varroa mite stomach contents were filled with the red organ-the fat.

Lastly, tests were run in vitro. In this experiment, small vials with either hemolymph or bee fat were set up. Foundress Varroa mites were placed in each vial. Those fed bee blood exclusively starved quickly or produced one offspring and died. Those mites fed only bee fat survived better and produced far more offspring. So when varroa mites parasitize the honeybee, they are depleting their fat stores leaving the bee injured with bite wounds, virus transmission and reduced fat stores. When we apply that to humans, imagine what it is like to go outside with a heavy winter coat in 32 degrees. Then, someone robs you of your coat in the middle of winter leaving you without insulation. You shiver but soon succumb to the cold and can die.

I cannot imagine how bees can effectively use thermogenesis to keep the cluster warm when their fat stores are depleted anymore then we can stay warm without a layer of fat. Winter bees as you know, are physiologically different than spring bees. They have a thicker layer of abdominal fat and are meant to live about 3 months until the spring brood emerges. They consume the honey stores in winter to thermoregulate the cluster. They use endothermic heat production by shivering only their thoracic flight muscles and then trading places with the mantle bees on the outside of the cluster but that takes a lot of energy; energy that comes from fat stores that are built up from honey consumption. According to the University of Maryland's study on New Insight on Honeybee Parasite, issue February 15, 2019, <https://umdrightnow.umd.edu/news/umd-led-study-gives-major-new-insight-honey-bee-parasite> the fat body of the bee stores nutrients, detoxifies the blood and helps manage the bees' immune system. This means the fat stores are **critical** to a winter bee's survival.

Many articles support studies that Varroa mites live on the fat bodies of the honey bees but what I found fascinating was the way in which researchers proved it. Although bees are supposed to be able to handle our North Carolina winters, maybe the Varroa mite has changed the

*Apis mellifera* bees' ability to tolerate winters far less than their *Apis cerana* cousins. That's where we beekeepers come in. Before these Varroa mites inflict involuntary Liposuction on our bees, do a mite check and treat the bees in the span between summer and fall, right after Labor Day, when the queen begins laying the winter brood.

Providing the girls with a clean dry home with plenty of food in the pantry and fewer unwelcome guests is the least we can do. Making sure they have their winter body fat intact will surely help them get through the worst of the cold and wet season ahead. Doing this is like giving your bees a winter coat, scarf and hat. When you tuck your bees away for winter you can rest assured you did all you can and hopefully you'll reap the benefits when the nectar flow returns in spring.

May Markoff, BS, RN



## Bee Fun Facts

1. Every bee colony has its own distinct scent so that members can identify each other.
2. Bees have existed for around 30 million years.
3. Honey has antibacterial properties and can be used as a dressing for wounds.
4. A single ounce of honey could fuel a honey bee's flight all the way around the world.

