

# STAHLMAN BEEKEEPING

## NOTES FOR 2023

Vol. 5 Issue # 2 January 14, 2023

In looking back at old issues of my notes, I find that I have written often about pollen. Pollen is essential as a food for developing bees, the continuation of plant life and human existence.

From a quick search on the internet, I found this article:

<https://edis.ifas.ufl.edu/publication/IN868>

Edis is Electronic Data Information Source of UF/IFAS Extension - it is a comprehensive, single-source repository of all current UF/IFAS numbered peer-reviewed publications. One can go on-line to subscribe. It is operated by the University of Florida. The above article describes pretty much what I was looking for to define how important pollen is to the honeybee diet.

The protein that pollen provides is vital to brood production and the development of young bees. Pollen is the most nutritionally variable food source that honey bees use and typically is composed of the following: water (7%–16%); crude protein (6%–30%); ether extract (1%–14%); carbohydrates, including reducing sugars (19%–41%), non reducing sugars (0%–9%), and starch (0%–11%); lipids (5%); ash (1%–6%); and unknown (22%–36%). From <https://edis.ifas.ufl.edu/publication/IN868> - this article is a worthwhile read.

Honeybees need pollen to feed young developing larva. I can remember reading a study done many years ago of a research project in Minnesota that set up a test to determine the importance of pollen in the food given to developing bees. The study I believe was done by USDA in the late 1940's. The test consisted of studying 3 pound package bees installed into 10 hives. All hives were started on foundation and split into 2 groups. The hives were confined inside a screened cage. (This prevented all hives from gathering native local pollen).

5 colonies were given a diet of sugar syrup and pollen and the other 5 were given only sugar syrup. The results: the bees given the sugar syrup/pollen produced brood and their populations grew. The bees given only sugar syrup died (not because they starved but because the brood did not develop and replace the bees that came with the packages. I think I can remember the study lasting 6 weeks.

### IMPORTANT POINTS

It is great to start another year, with all its yet to be discovered events, trial and learning experiences. I always say, "The more you learn about bees the less you really know." The girls are our best teachers. I tell my beekeepers, "If and when you see the bees doing something you don't "like", **stop** and instead of tearing into it to "fix" it, try and understand why they are doing whatever it is. They have a reason for everything they do, whether we like it or not. They really do not have a care in the world what we think and want and maybe we can learn something.

Ken Hoover

"If you want to make a little money beekeeping, be sure and start with a lot of money so you have a little money left."

A quote passed on to me by Dave Landers of Raleigh. I went with Dave five or six years ago to pick up his first package of bees. Maybe it was seven.

The health of a colony of bees depends on pollen being available when brood production begins. The beekeeper's job is understanding the needs of the honeybee colony. Offering honeybees food and pollen in times of need is managing your beehives responsibly.

From my experience:

- If package bees are installed on new foundation in early spring (before bees can gather pollen) feeding a pollen substitute along with sugar is necessary. If the package bees are installed on drawn comb containing honey and pollen, they develop much faster.
- If one is building up bee populations to sell bees, to make splits or planning to place hives for early pollination -- feeding pollen and sugar syrup will stimulate brood production.
- If a spring inspection finds little pollen stored in combs, feeding pollen certainly will help a hive.

A number of products are sold to supplement pollen. These can be dry or soft patties. Many of the products are sold in bee catalogs with all kinds of descriptions.

I do have confidence in the following statement by Zachary Huang of Michigan State University.

A good pollen substitute for honey bees should have the same features as a good pollen: 1) palatability (is readily consumed), 2) digestibility (is easily digested) and 3) balance (contains correct amino acid balance and enough crude proteins). Currently, there are at least six commercial pollen substitutes for honey bees in the U.S.: AP23, Bee-Pol, Bee-Pro, Feed-Bee, MegaBee and Ultra Bee. Ultra Bee or MegaBee seem to be the most popular with beekeepers. Since AP23 is new, there are no published tests on it. Beekeepers reported similar acceptance and performance of AP23 as to MegaBee.

Some beekeepers might think that pollen sold in jars or collected in pollen traps might be a good solution for feeding pollen to bees. Feeding unknown pollen or honey to bees could result in spreading one of the worst diseases of honeybees – American foulbrood.

In earlier editions of my notes I have published a number of articles on feeding bees. That topic is covered by the many postings on UTube and beekeeping sites. I would repeat that feeding liquid food to bees during the winter season is not advised.

A good site to visit to get scientific information is: [Feeding Honey Bees - Michigan Pollinator Initiative \(msu.edu\)](http://Feeding Honey Bees - Michigan Pollinator Initiative (msu.edu)) it includes a pdf which can be downloaded and is very informative.

## January brood inspection - First week of January



I was able to open my hives on January 3<sup>rd</sup>.

All my hives are one deep brood chamber and one medium brood box above. I began feeding my bees in September to get good brood build-up for winter bee populations and provide enough food for the bees to fill the medium box above the brood chamber with food. That has paid off well.

The temperature was 63°F. The cluster is seen in the bottom box.

This hive was typical of my other hives. All were alive and bees were bring in pollen. I always start my inspection by removing frames from near the sidewall of the top box. I move any frames with honey from the outside wall to the area above or near the brood/winter cluster.

Besides checking for honey stores in the hive, I check for brood. The bees are covering capped brood. This indicates that the queen has been laying for several weeks at least.



(This capped brood will emerge in a few days and the new bees will begin to replace the older bees that have or will die.



I mark my queens so they are easy to spot. This queen had two frames of capped brood and at least one frame of eggs and larva in the upper medium super and bees in the deep box below.

I did not go into the bottom brood chamber but I have determined on this inspection the following:

- 1) The bees are using a lot of their honey stores.
- 2) The queens are not only

laying eggs, but I saw no mites clinging to any of the worker bees when I examined my pictures later in the day. I did not do a mite sugar roll test at this time.



3) The bees were bringing in two colors of pollen (white and orange).



And 4) the hive had a good number of dead bees below the entrance to the hive.

So what am I to make of this early hive inspection?

- 1) The hives are alive
- 2) They have enough food right now
- 3) Queens have been laying for several weeks (eggs, larvae, and capped brood was seen).
- 4) It is normal for a strong hive to have dead bees on the ground in front of the hive. The undertaker bees drop them off the front of the landing board. In warmer weather they are usually carried away by ants or they fly further away from the hive when they are about to die.
- 5) The weather gave me a chance to know that I better check as often as I can to determine the honey stores and think seriously about swarming. Feeding and mite treatment will be required before February arrives.

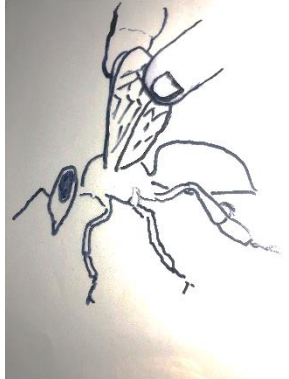
My bees are not out of the woods! I have over many years learned to wait before I start counting all hives successful. I have already ordered new queens for each of my hives. If it is possible I will make some splits and use the "last year queens" to make them up. My goal this year is to get some honey, raise some queens and fight the mites.

Did you get the notice that the US Government approved use of the world's first vaccine for honeybees? Looks like it will help in the control of American foulbrood. It has nothing to do with helping us with the mite situation.

I am curious as many of you are about the source of pollen and honey coming into our hives.

I am going to report on pollen I find coming into my hives here in the Raleigh area. I am open to doing this with you on a limited basis. More on that in future notes.

One does not have to kill bees to remove pollen from their legs. I use a screen over the entrance to block bees returning to the hive. Bees returning to the hive with pollen will gather near the entrance to the hive and I just pick them off the screen and use tweezers to pull the pollen ball from a leg. All it takes is one pollen ball. There is a trick to picking up worker bees without getting stung! Gloves hinder any attempt to pick up a bee.



Honey bees can be picked up by using the index finger and thumb as shown here. The honeybee cannot raise the tip of the abdomen where the stinger is located.

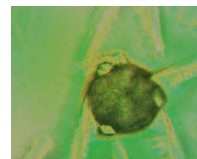
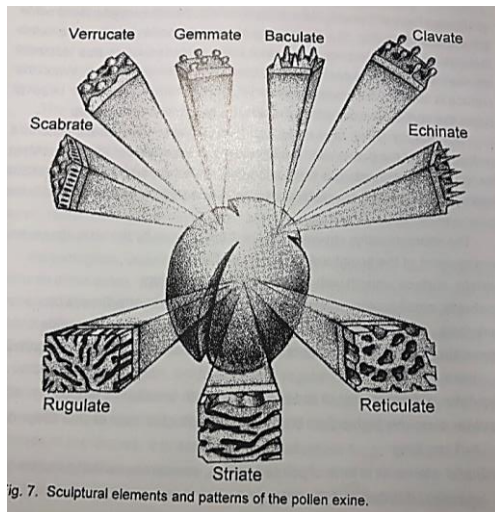
The pollen grain can be gently removed with a pair of tweezers and placed in a plastic bag to prevent contamination with other pollen samples.

These little zip lock bags are available at art supply stores and I have even found them at Dollar Stores which by the way handle little sample glass and plastic containers.



Note: this bag indicates the date, location, and the color of the pollen collected. All valuable aids to narrow down the source of the pollen. There are a lot of pollen grains within a single ball of pollen taken from the leg of a honeybee. The color doesn't help much!

Under a microscope a pollen grain can be examined for size of grain, pores, furrows, shapes, and surface features. Books that provide guides are important to take the guess work out of an identification.



Two views of the same grain of pollen at different magnifications. This is a grain of pollen I

researched from a pollen sample taken November 28 as shown in the bag above.

I visited J C Raulston Arboretum on Thursday and took a lot of pictures of plants in flower and those showing evidence they are getting ready to bud.

I am including the report I prepared for Suzy Spencer.

If you are interested in pollen, you might save these reports that I plan to make of pollen being brought into my hives and other sources I can find in bloom.