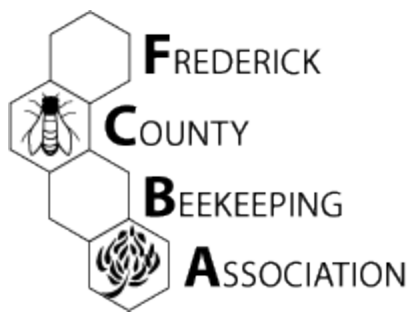


Educate and  
Advocate for  
Responsible  
Beekeeping



# Meeting Minutes

March 5, 2014

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The meeting was called to order at 7:30 PM by Rose Aurigemma, President-elect.

New members/guests were welcomed and introduced. We welcomed many new faces including, Steve Poteat, Debbie Turnell, Arlene Donaldson, Tracy Parks, Bob Esskay, Dave Soloman and Jan Wymer.

## **Moderated Topic Discussion: Dr. Bart Smith of the Beltsville Bee Research Lab (BRL) on Bee Diseases**

Dr. I. Bart Smith of the Beltsville Research Lab enlightened us with his expertise as a bee scientist and retired bee inspector (27 years of service). Thank you, Bart for sharing your vast knowledge!

### **The Beltsville Lab**

- 5 senior scientists and visiting scientists from all over the world look for problems bees are having and try to find ways to fix them.
- This lab is underused!!!!

Link to the website: [http://www.ars.usda.gov/main/site\\_main.htm?modecode=12-45-33-00](http://www.ars.usda.gov/main/site_main.htm?modecode=12-45-33-00)

Guidelines for samples from the website:

### **Bee Disease Diagnosis Service**

The diagnosis of bee diseases has been a focus of this laboratory since its inception in 1891 and we operate a "Bee Disease Diagnosis Service" for beekeepers across the U.S.

There is no charge for this service.

Samples received of adult bees and beeswax comb (with and without bee brood) are examined for bacterial, fungal and microsporidian diseases as well as for two species of parasitic mites and other pests associated with honey bees (*i.e.*, small hive beetle, *Aethina tumida*).

When requested, American foulbrood samples are cultured and isolates are screened for their sensitivity to Terramycin (oxytetracycline) and Tylan (tylosin).

We do not analyze samples (bees, wax comb, pollen, etc.) for the presence of viruses or pesticide residue.

We do not make determinations about which species of *Nosema* (*N. apis* or *N. ceranae*) are present, when nosema disease is detected.

Diagnostic reports are transmitted to both the beekeeper, submitter of the samples and to the appropriate apiary inspectors.

We are only able to accept samples originating from the U.S. and Canada. We do not accept samples from other countries.

### **How to Submit Samples**

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#### Submission of Samples for Diagnosis:

##### General Instructions

- Beekeepers, bee businesses, and regulatory officials may submit samples.
- Samples are accepted from U.S. states and territories, and from Canada; samples are NOT accepted from other countries. For samples originating from Canada [click here](#).
- Include a short description of the problem along with your name, address, phone number or e-mail address.
- There is no charge for this service.
- For additional information, contact Bart Smith by phone at (301) 504-8821 or e-mail: [bart.smith@ars.usda.gov](mailto:bart.smith@ars.usda.gov)

##### How to Send Adult Honey Bees

- Send at least 100 bees and if possible, select bees that are dying or that died recently. Decayed bees are not satisfactory for examination.
- Bees should be placed in and soaked with 70% ethyl, methyl, or isopropyl alcohol as soon as possible after collection and packed in leak-proof containers.
- USPS, UPS, and FedEx do not accept shipments containing alcohol. Just prior to mailing samples, pour off all excess alcohol to meet shipping requirements.
- Do NOT send bees dry (without alcohol).

##### How to send brood samples

- A comb sample should be at least 2 x 2 inches and contain as much of the dead or discolored brood as possible. NO HONEY SHOULD BE PRESENT IN THE SAMPLE.
- The comb can be sent in a paper bag or loosely wrapped in a paper towel, newspaper, etc. and sent in a heavy cardboard box. AVOID wrappings such as plastic, aluminum foil, waxed paper, tin, glass, etc. because they promote decomposition and the growth of mold.
- If a comb cannot be sent, the probe used to examine a diseased larva in the cell may contain enough material for tests. The probe can be wrapped in paper and sent to the laboratory in an envelope.

##### Send samples to:

Bee Disease Diagnosis  
Bee Research Laboratory  
Bldg. 306 Room 316  
Beltsville Agricultural Research Center - East  
Beltsville, MD 20705

## **Objectives of the Bee Research Lab**

- Analyze genetics of parasites and pathogens
- Use genomic information to develop novel controls for mites
- Determine the impacts of stress on worker and queens (diets)
- ID key impacts of in-hive and environmental pesticides (ie..almond tree fungicides)
- Develop and test hive treatments against mites and other bee threats (best practices for mite control and colony health of commercial hives)
  - Some queens sent in to the lab showed a 70% mortality rate of sperm in the spermathica...brings about the question of cause: drones vs. queens

## **BRL Bee Disease Diagnostic Service**

- In 2013, 2,269 samples were tested. 25 % were sent in by beekeepers.
- ANYONE can send a sample in!
- Adult Bee Samples: 1,248 examined during 2013 (varroa mites, honey bee tracheal mite, nosema)

## **Varroa Mite**

- Main cause of colony death in Maryland, due to mites and transmitting viruses
- First appeared in Maryland in 1989
- The lab checks samples of 100 bees. An acceptable # mites is 2/3 mites per 100.
- The mites are fairly evenly distributed through class.
- The majority of the mites are found in the brood nest.
- The lab cannot test for virus loads although there is a demand- too expensive.

## **Honey Bee Tracheal Mite**

- Testing- slices of thorax of 16 bees treated with lactic acid
- 1.6% samples have HBTM
- Best treatment: Thymol based/ formic acid

## **Nosema**

- Parasitic fungi that infects the digestive tract and is also found in other tissues
- Scientists use a hemocytometer at 400x magnification to count spores
- Two types- Nosema Ceranae accounts for 95% of the Nosema in the US
- Out of 1248 samples, 645 had Nosema (51.7%)
- Treatment: Fumigillin B in the fall
  - Note: test hives that had high levels of Nosema in the spring recover before fall indicating that treatment is only really needed in the fall. Currently no proof of resistance to Fumigillin B.

## **American Foulbrood**

- Each cell contains 2.5 billion spores! Can remain for years!

- Very contagious and kills colonies
- Symptoms include: sunken cell tops, holes in top of sunken cells (bees try to clean), “ropey” toothpick inserted in the cell reveals rope like strings, scale remnants when looking at cells at an angle.
- Q: At what point does it smell? A: fairly early with a distinct “glue pot odor”
- Of 1,003 samples, 256 samples tested positive for AFB (25.5%)
- Currently testing for AFB antibiotic sensitivity (Tylan and Terramycin) 5.5% were resistant to Terramycin, currently no resistance to Tylan.
- Antibiotics cannot treat and kill spores, antibiotic treatment simply masks the condition, but colony will ultimately succumb. Some commercial producers treat prophylactically! Questions are raised about effects to consumers of overuse of antibiotics as well as to the efficacy of the antibiotics for future use in bees.

### **Other Diseases**

- European Foulbrood: Healthy hive can take care of it!
- Chalkbrood: common and will not kill a colony
- Sacbrood is a virus
- Laying worker brood: Not a virus, but rather an indication of no queen and a dying hive. Noted irregular pattern of brood with drones in worker cells
- Wax Moths
- Small Hive Beetle

### **QUESTIONS FROM THE CROWD**

Q: What new diseases are on the horizon?

A: Tobacco ring spot virus, a known plant virus has spread to bees (tissue)

Q: Are there any bee pathogens that can affect humans that work the bees or consume the honey?

A: No bee diseases affect humans, however it is recommended to NEVER feed bees honey from an unknown source. Honey bought in stores often has AFB spores!

Q: Are the samples identified by inspectors as AFB typically confirmed to be AFB?

A: Occasionally EFB can be misdiagnosed as AFB by inspector. MD has knowledgeable inspectors!

Q: Is there research to support a certain breed that is resistant to the many bee pathogens?

A: There is bee breeding research conducted in Baton Rouge- some research shows the Russian Mite Suppression Breed to be more resistant to varroa mites.

Q: How long does it take to return samples?

A: Typical AFB suspicions within one week, adult bee samples 1-2 weeks

Q: Will the lab test for breed?

A: The lab does not test for viruses, pesticide exposure (USDA- AMS National Science Labs at \$320 a sample), Race Identification (USDA Tucson Lab at no charge), Nosema Species identification.

## **Regular Club Meeting**

### **Meeting Minutes**

Minutes from the January 8th meeting were unanimously approved.

### **Treasurer's Report**

The account balance as of March 5th is \$5,399.94. The report was unanimously approved.

## **Old Business**

**Observation Hive Status:** A package has been ordered.

**New Meeting Place:** The extension office is not available. Please email any new ideas to members as they come available. Tonight's meeting is proof that we need more space!

**Spring Ridge Ag Expo:** Laura Ritchie, the club rep for the Ag Expo shared that the event will occur on March 27<sup>th</sup> from 9-1 with set-up Wednesday, March 26<sup>th</sup> from 5-7. If anyone is interested and available to be an adult presence during the Expo (held in the Null building at the Fairgrounds) please email her... llritch79@gmail.com There is full coverage for the event, but more is always welcome.

**Short Course Update:** Rose shared that the field day has been scheduled for Saturday, April 26<sup>th</sup>.

## **New Business**

**MSBA Report:** Bill McGiffin shared that the 1/4ly State Meeting held at the Howard Co. Fairgrounds was a great success! Gary Reuter gave a great presentation on breeding queens. Charlie Brannon, the White House beekeeper, shared that one of the White House hives produced 382 lbs of honey!

Dr. Wayne Esaias updated folks on the propagation of black locust trees. He formed a committee to cut and propagate the black locust roots, which will be propagated in a greenhouse. To get on the list to help, contact Dr. Esaias ([wesaias@verizon.net](mailto:wesaias@verizon.net)). The scheduled propagation is March 13<sup>th</sup>, with a snow date of March 18<sup>th</sup>.

**Lapel Microphone:** Harry Prince recommended the club purchase a lapel microphone to support the speakers for the short course. He recognized the challenge balancing equipment and holding a microphone pose for our esteemed presenters. Mike Turell motioned that the club purchase this equipment. It was seconded by Allen Winpigler and the club unanimously voted to approve the purchase. Harry will forward the information to the club. Thanks Harry!

The meeting ended with door prizes and was officially adjourned at 8:55 PM with snacks and drinks to follow.

A huge Thank You to Mike Turell and Valerie Keller who provided a smorgasbord of goodies to snack on!

The next meeting will be April 2nd, 2014, at 7:30 pm at the Fountain Rock Nature Center, Walkersville, MD, unless otherwise noted. Keep an eye on email/website for updates.

Snacks will be provided by: Rose Aurigemma and Mike and Jeannetta Rourke.