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a local chapter of NORTH CAROLINA STATE BEEKEEPERS ASSOCIATION, INC.

MEETINGS & PROGRAMS:

- **Tuesday, January 10, 6:30.** Covered dish meal.

Jack Tapp (Busy Bee Apiaries) will talk about the need for pollination in North Carolina and Guilford County in particular. Queen rearing is also a sideline in his business and he will also discuss this topic. Jack presents an excellent program.

- **Tuesday, February 14, 7:00.** No meal.

Don Hopkins, State Apiarist, Will bring us up to date on the spread of Africanized bees, how to prepare, what to expect, and how to help the public deal with them. Looks like no way around this problem!

- **Tuesday, March 14, 6:30.** Covered dish meal.

Dr. Fahrbach, a professor at Wake Forest University addresses "How the bee brain grows up and is able to adapt to their changing roles in the colony." Maybe we can learn from this if WE can stop forgetting!

NEEDS YOUR ATTENTION:

Beginner Beekeeping Course

Classes meet on the following dates:

Thursday, February 9

Thursday, February 16

Thursday, February 23

Thursday, March 2

Thursday, March 9

Thursday, March 23

• posters are available for you to help promote our program. Take a couple or copy from our web site.

- **THOSE OF YOU** who plan to purchase the Russian Nucs we talked about in November need to be prepared to pay Emerson Heatherly \$67.50 at our January meeting as order confirmation time is critical to assure spring delivery.

- **2006 Membership dues are now DUE**

ARTICLES OF INTEREST

From Dr. Tarpy: FDA Approves TYLAN Soluble for the Control of American Foulbrood in Honey Bees

The U.S. Food and Drug Administration (FDA) has approved TYLAN (tylosin tartrate) Soluble for the control of American foulbrood (*Paenibacillus larvae*) in honey bees. This is the first approval for the use of TYLAN Soluble in a minor species (honey bees).

TYLAN Soluble, a product of Elanco Animal Health, a division of Eli Lilly and Company, Greenfield, Indiana, is already approved for therapeutic uses in chickens and swine and production uses in turkeys.

TYLAN Soluble is the second approved new animal drug for honey bees that controls American foulbrood (*Paenibacillus larvae*). FDA reviewed extensive data to ensure the product met all necessary effectiveness, animal health, human food safety, and environmental

standards. The approval of this supplemental new animal drug application relied on publicly available safety and effectiveness data contained in Public Master File 5783, which were compiled under the oversight of the National Research Support Project-7 (NSRP-7), a national agricultural research program for obtaining clearances for use of new animal drugs in minor animal species and for special uses. Studies were conducted by USDA's Bee Research Laboratories. FDA has concluded that the honey derived from honey bees fed tylosin tartrate is safe when the animals are fed according to the approved labeling.

Additional information on this approval may be obtained by contacting Joan C. Gotthardt, D.V.M., Director, Division of Therapeutic Drugs for Food Animals, FDA, Center for Veterinary Medicine, Office of New Animal Drug Evaluation, 7500 Standish Place, HFV-130, Rockville, MD 20855, 301 827-7571; E-mail: jgotthar@cvm.fda.gov.

Ohio State University Extension Fact Sheet
OARDC/Entomology, Honey Bee Lab
1680 Madison Ave., Wooster, OH 44691-4096

Answers to 10 Questions that Growers Frequently Ask Beekeepers

Dr. James E. Tew

1. Why are honey bees for pollination in short supply?

In the mid-1980s, two new species of predaceous mites established themselves in the US. They have been infesting and killing both managed and wild colonies ever since. Finally, across the US, most wild honey bee colonies have been killed leaving only managed colonies to provide honey bee pollination services. The mites can be controlled in managed colonies. Concurrent with the colony decline, honey prices have risen causing some beekeepers to allocate colonies to honey production rather than crop pollination. Therefore, there are fewer honey bee colonies and many of the remaining colonies are being directed toward honey production.

2. What does a "strong" bee hive look like?

The definition of a strong bee hive can vary depending on the season of the year. In the early spring months, a bee hive being used for tree fruit pollination should minimally have adult bees on five of the colony's ten frames. There should be developing bees (brood) on two or more frames of the five frames that are covered by adult bees (estimated population of 15,000 - 20,000 adult bees). A colony having adult bees on eight of the colony's ten frames and having five frames of brood is a stronger colony (20,000 - 32,000 adult bees) and would be a more efficient pollinating unit. Evaluating entrance activity without knowing internal colony conditions is not an accurate way to assess colony strength.

3. How many colonies should be used to pollinate an acre of tree crops? An acre of vine crops?

One strong colony (or two average colonies) per acre for tree crops (See Question 2 above).

Two strong colonies per acre for vine crops (about 1 colony per 50,000 plants) (See Question 2 above).

4. Can bees other than honey bees be used?

Yes, in fact, other species of bees can be frequently be better pollinators than honey bees. However, populations of these bees are difficult to manage and annual

populations numbers may be erratic. Encourage populations of these bees in your area by providing undisturbed nesting areas and applying insecticides cautiously, but plan to rely on honey bee colonies as a pollinator insurance service.

5. Can a grower keep his own bees?

Certainly, but the grower must plan to become a beekeeper (to some extent). Different from past years, bees left untended cannot manage for themselves. Basic bee management and disease control cannot be ignored.

6. Do bees from colonies that I rent wander from my crop or orchard?

Yes they do. But if crop flowers are the most common flower and are nearby, many (if not most) bees will stay on the targeted crop. Decrease competition from other weed flowers within and around the orchard or field by mowing or using herbicides. Additionally, commercial bee attractants are available that will train bees to crop blossoms first. These attractants are helpful, but still will not keep all foragers on the targeted crop.

7. Why have bee colony rental rates gone up in past years? What are average rental prices?

The costs of controlling mites in bee hives has increased operating costs. Additionally, the costs of replacement bees has steadily risen (again in response to mite control costs) thereby increasing the costs of maintaining colony numbers. Depending on the crop, hives are renting for \$40 - \$70 based on colony strength and nearness to the crop to be pollinated.

8. How much notification do beekeepers need before moving colonies in or moving colonies out?

If prior arrangements have been made, the beekeeper should be expecting your call. Overall, probably twenty-four hours is common. However, weather can change everything. Both the grower and the beekeeper must remain flexible.

9. Where is the best place for the beekeeper to put the colonies in my planting?

In general, spread the colonies around the planting in groups. The larger the orchard or field, the larger the number of colonies in these "islands of bees". There is probably no practical reason for spreading colonies in singles or doubles. Foraging bees will equalize themselves within the crop. Make sure that the beekeeper can get trucks and equipment into the crop and that the colonies can be managed while they are on site. Avoid locations near human activity.

10. Will the bees attack human workers in the orchard or planting?

The most disturbing time for bee colonies is the morning after the move into the orchard. Give them a wide area then. Beyond that, just stay a reasonable distance away from the hive locations. Foraging bees within tree canopies or on vine crop blossoms are practically harmless and will make every effort to avoid human interaction.

For the past 127 years, the Ohio State Beekeepers' Association (OSBA) has been the organizing body for Ohio beekeepers. Currently a list of state beekeepers willing to provide bees for pollination is being compiled. This will be a continuing project beyond this current season. For information concerning this list or information concerning beekeeping or the OSBA, contact:

Bee Healthy. Eat your Honey!

TEMPERATURES IN BEEKEEPING

- 0°F - Brood rearing will expand even when external temps are below
- 0°F- 0°F Freezing Comb honey overnight kills all stages of wax moth, retains quality, does not granulate, whitens cappings.
- 5°F - for 24 hrs.. kills all stages of the greater wax moth.
- 28 - Colony consumes more at 28°F than at 15°F
- 40 - Min temp for early spring inspection - NOT intensive manipulation
- 43 - Surface of cluster remains between 43-46°F
- 43 - All bees become part of cluster at approx 43-46°F.
- 44.6 - Bees take brief defecation flights.
- 50 - Bees fall into cold coma, cannot voluntarily recover.
- 50 - No pollen collection below 10°C
- 50 - Brood can be very quickly examined in low 50°F range.
- 50 - Install package bees, at least in the 50s.
- 50 - Store unheated honey.
- 50-59 - Honey granulation is promoted & liability to ferment.
- 53.6 - Cannot fly at air temp less than about 12°C.
- 55.4 - Minimum temp for active foraging
- 57.2 - Broodless bees begin to cluster
- 57.2 - Mating flights occur >18°C
- 60 - Benzaldehyde works best on fume board between 60 - 70°F
- 64.4 - Workers begin to cluster
- 65 - Involved manipulation require temp of at least 65°F.
- 68 - Cluster temperatures are maintained at 20°C.
- 70 - Bees may cluster on outside of hive at temps 70+°F.
- 80 - Butyric anhydride works best on fume board between 80 - 95°F.
- 81 - Honey stored above 81°F will deterioration in color, flavor and enzyme content.
- 90 - Bees manipulate beeswax best at about 90°F.
- 92 - Above 92°F in hive, is too high for brood rearing.
- 92 - At temp over 92°F, brood begin to overheat and die.
- 93 - Incubation temp for queen cells
- 93.2 - Temp maintained inside brood rearing cluster
- 95 - Temp inside cluster when brood rearing begins
- 95 - Normal hive temperature
- 95 - Where temp exceeds 95°F, shade is required
- 95 - Granulated honey liquefies between 95-120°F, but darkens honey.
- 109.4 - Nectar & pollen foraging may cease
- 116.6 - Highest recorded body temp
- 147.9 - Wax melts at 147.9°F plus/minus 1°F
- 160 - Heating honey to 160°F for 4-5 minutes controls fermentation.

(article provided by Kurt Bower)

- Don Hopkins, State Inspector: (336) 376-8250
- Guilford County Beekeepers Association web site <http://www.guilfordbeekeepers.org>
- North Carolina State Beekeepers Association web site <http://www.ncbeekeepers.org>



Guilford County Beekeepers Association

A LOCAL CHAPTER OF THE NORTH CAROLINA STATE BEEKEEPERS ASSOCIATION

Norman Faircloth, editor (nfaircloth@northstate.net)

PROPOLIS RINSE HELPS PREVENT CAVITIES

Propolis is sticky, glue-like material that bees make from the resin of trees and plants and their own secretions. Researchers say propolis halts an enzyme in *Streptococcus mutans*, a microorganism found in the mouths of humans and animals that is the main culprit behind tooth decay.

Bees use propolis to seal holes in their hives and to embalm predators, including wasps, that have invaded their homes. Propolis keeps the dead insects from decomposing in the hive and causing further problems.

This ability to keep organisms from decomposing is what first sparked the researchers' interest in the potential propolis might have as an antiseptic, or antibacterial, agent. Antiseptics reduce the virulence of bacteria or kill enough of it so the human immune system can get rid of it, says Dr. Michel Hyun Koo, a dentist at the University of Rochester Medical Center in New York.

In a laboratory test, rats that were given a mouthwash containing propolis twice a day had 60 percent fewer cavities than rats given a mouthwash that didn't contain propolis, Koo says. Rats get cavities the same way humans do, he adds. Koo and his colleagues have been gathering propolis from beehives in Brazil to use in their laboratory experiments. "The potential is enormous," Koo says. "So far, we haven't found any other agent that is as effective as this natural product." Propolis will not, however, replace fluoride, he adds.

"The idea would be to use both," Koo says, noting that the two fight cavities in entirely different ways. Fluoride helps replenish enamel that's been lost to decay. Researchers believe propolis works by inhibiting an enzyme, called glucosyltransferase, in *Streptococcus mutans*, which is key to the buildup of plaque on teeth.

The enzyme aids the formation of plaque by creating molecules, called glucans, which become the building blocks of plaque. The structure of the biofilm enables bacteria to collect on it and latch onto teeth, Koo says. Cavities form when bacteria metabolize sugar, producing lactic acid that eats away at the enamel.

"If you knock out the enzyme, you prevent dental plaque formation," Koo says. "If you prevent dental plaque formation, you prevent cavities." But before a propolis mouthwash is ready for market, more research has to be done, he adds. Propolis is highly complex and contains more than 40 compounds. The amount of each compound varies with the type of bee, and even from hive to hive, he says.

The challenge for researchers is to isolate the active ingredients that combat *streptococcus mutans*. The University of Rochester and the State University of Campinas in Brazil have applied for a patent on two compounds in propolis that Koo believes are largely responsible for preventing cavities. He would not reveal the precise names of the compounds.

Propolis has been used by humans for thousands of years. Egyptians used it in the mummification process, and today, lotions and creams touting the power of propolis to heal cuts are popular in Europe and Japan. Propolis also is used as a food additive, and some studies say propolis is an antioxidant.

Dr. Martin Taubman, a dentist and professor of oral biology at the Harvard School of Dental Medicine and head of immunology at the Forsyth Institute in Boston, says, propolis looks promising. "Apparently, it's effective," he says.

(Jennifer Thomas, Health Scout News Reporter)
ABJ - Feb., 2002

For those of you who did not attend our 2005 Christmas Party, you lost. There were about sixty-five members and their family-guests present for an evening of good food and fun. Kurt and Natalie won the blind package wrapping contest all too easily; there were door prizes, and contests prizes. Everyone really dialed into the singing. Song leader, Jack Fleming, took the group to a higher level with Judy accompanying at the piano. The program ended with "We Wish You A Merry Christmas" and take some of the left-over food home with you! Good food, good friends and great fun.

