GUILFORD COUNTY BEE KEEPERS ASSOCIATION

BEEKEEPING NEWS

JULY, AUGUST, SEPTEMBER, 2008

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

Meetings & Programs

• **Tuesday, July 8, 6:30 p.m.** (covered dish meal)
Our own State apiarist Don Hopkins will be our featured guest speaker this month. Don will be addressing the different types of treatments and when to use them. Don will also be keeping us up to date on the latest news from the State. Be prepared to ask questions, the tougher the better!

•**Tuesday, August 12, 7:00 p.m.** (no meal)
Is there any other way of keeping bees? Legally? Perhaps you are tired of bending over to work your hives. Randy Lynn will be presenting on Top Bar Hives. Randy has personal experience using them and will share the benefits as well as any drawbacks.

• **Tuesday, Sept. 9, 6:30 p.m.** (covered dish meal)
Dennis Keeton from the Battleground Brewers Guild will be doing a live demonstration on mead making! There are so many things to do with honey, and mead is a great way to go if you can just be patient. Sweet and dry meads will be explored during this topic of discussion.

Articles of interest

Man sets blaze while trying to kill pesky bees

MOBILE, Ala. (AP) — Joshua Mullen just wanted to kill the bees swarming around his utility shed. When Mullen, 26, walked away from the gasoline-soaked towels he was using, he heard a "whoosh" and turned around to see the shed in flames that spread to his rented home and wound up causing some $80,000 in damage.

"There were no injuries, unless you count the bees," Mobile Fire-Rescue spokesman Steve Huffman said. The fire appears to have started when the pilot light of a hot-water heater in the shed ignited fumes from the gas.

Mullen, who rented the home after his Biloxi, Miss., residence was destroyed by Hurricane Katrina, said he had poured gas on some towels the bees were swarming around and then walked away to pick up some trash in the yard.

He managed to get his fiancée and 1-year-old daughter safely out of the house. The blaze was hot enough that it melted some plastic blinds through a closed window on a neighbor's house...

Photos from Field Day 2008
THANKS TO ROCKINGHAM BEEKEEPERS

Bee suppliers busy as –

well, you know Honey of a deal: N.C. hive makers abuzz about the surge in business.

By Christopher D. Kirkpatrick ckirkpatrick@charlotteobserver.com

NORTH WILKESBORO --Presley Miller pulls a wooden slat from one of his beehives. It is a golden hue and crawling with bees building honeycomb and making honey.

His small business, Miller Bee Supply, manufactures the wooden hives that are in short supply lately because of a recent surge in beekeeping popularity.

Inside his operation, power saws blare as a crew works overtime to meet the growing demand. Beverly Miller, his wife, is on the phone telling customers and retail outlets that sell their hives about delays: "We've just been doing so much business. It's hard to keep up," she says.

It's a sweet time to be in the beekeeping equipment business. As more people become interested in raising bees as a hobby, demand for beekeeping essentials such as wooden hives and smokers – as well as live bees themselves – is outstripping supply.

Some newcomers to the hobby have to wait weeks, even months for start-up supplies, some N.C. retail shops have reported. Retailers who specialize in bee equipment, most of whom are mom-n-pop operations, say they're as busy as, well, you know.

"It's going gangbusters," said Barbara Tapp, who works at Busy Bee Apiaries in Chapel Hill. She said the company is making higher profits but customers also have been disappointed by the long wait. New customers, for instance, are unable to get all the parts of a starter kit.

Starter kits sold at Busy Bee and other retail outlets generally include a package of live bees imported from Italy, a queen bee, a wooden hive, a smoker, bee suit and other tools of the trade. To get started, supplies run from $150 to $300.

"It's causing us to be out of everything. We've got back orders. It's hit us pretty hard," Tapp said, The surge in beekeeping is thought to spring from people who want to help revive a declining bee population, which has been decimated by a recent North American epidemic of dying honeybees, called colony collapse disorder.

National news attention about the decline in hives has inspired some to raise bees. A healthy honeybee population is important because the insects pollinate crops that provide about one-third of the U.S. food supply.

The mysterious disorder has killed at least 25 percent of the honeybee population over the past several years. Scientists are researching root causes. And it's unclear if amateur beekeepers raising new bees will make a difference over the long haul, said Kim Flottum, editor of Bee Culture magazine, published in Medina, Ohio. "But any new hive is a good thing."

Brushy Mountain Bee Farm, located in Wilkes County and another major wooden beehive manufacturer, has a message posted on its Web site apologizing for at least a two-week delay in delivering orders.

"Customers have asked, why are we so behind? My response is that it's difficult to plan ahead when you have 'Good Morning America' doing a five-minute piece on how to install a bee hive," said Shane Gebauer, general manager of Brushy Mountain. "It just takes a small percentage of those viewers to want to take it up."

Michelle Barry, a veteran beekeeper and mother of four, has 10 hives at her Apex property. She's been waiting months for a wax melter, which converts beeswax into candles and other products, she said. "It's about impossible to get a smoker, which is one of the most basic pieces of equipment."

Al Hidreth, a Chapel Hill resident, took a beginners' class in Johnston County after reading about colony collapse, he said. He had to wait weeks for his start-up equipment.

No centralized organization tracks backyard beekeepers or U.S. beekeeping operations. But judging by the increasing number and size of start-up classes held around the country, the ranks of new U.S. beekeepers has more than doubled over last year, said Flottum, the magazine editor.

The national beekeeping conference, held in January in Sacramento, Calif., hosted 1,200 participants, up from about 600 the year before, said Troy Fore, executive director of the American Beekeeping Federation, based in Jessup, Ga.

And locally, the annual beginners course given from January to April by the Mecklenburg County Beekeepers Association was full this year. Some of the would-be hobbyists had to be turned away, said Libby Mack, membership secretary for the group.

"Honey bees are in the news," she said. Mack has several hives with her husband in Charlotte's Elizabeth neighborhood. Western North Carolina occupies a special place in beekeeping culture, particularly Wilkes County, one of the few places where the sourwood tree flourishes. The honey from sourwood nectar is considered a delicacy around the world. Every region has its particular honey, like wine, but sourwood is "sweeter, finer – it's just better," Flottum said.

As Miller tends to his hives behind his business, he's careful not to upset the bees because he's highly allergic to their stings. It's a potentially lethal irony for a beekeeper, and one that has sent Miller to the emergency room in the past. But it is his passion and well worth the risk, says the entrepreneur. He downplays newfound profits as "making a good living." His customers drive from as far away as Myrtle Beach and Tennessee to visit his shop.

His operation ran out of inventory and supplies in April. He thought the inventory would last until mid-summer. "We're behind," he said. "But it's a good problem to have."

In June 2008, NATURE checked in with Pennsylvania's acting state beekeeper, Dennis van Engelsdorp, for an update on the latest details on the investigation into Colony Collapse Disorder. pbs.org

Q: In Silence of the Bees, you are shown monitoring a quarantine of several collapsing hives from a Pennsylvania beekeeper. Is this monitoring ongoing?

A: All of the original colonies died by December [2007]. We now have eight new colonies at that site, and continue to sample once a week. We are watching disease growth curves, and this year we are sampling a more diverse range of bees.

What have you been hearing recently from other beekeepers?

The Apiary Inspectors of America (AIA) commissioned a survey to estimate colony losses across the country between September 2007 and 2008. The USDA-ARS Beltsville Honey Bee Lab conducted a similar survey of beekeepers pollinating almonds in California in February 2008. In total, nearly 19 percent of the country's estimated 2.44 million colonies were surveyed. A total loss of 36 percent of managed honey bee colonies was recorded. This represents a 13.5 percent increase in total losses as compared to last year. The 327 operators surveyed lost nearly a third of their colonies, on average.

Are all of these losses attributable to CCD?

One of the symptoms of Colony Collapse Disorder is the complete absence of bees in dead colonies. The AIA survey data doesn't differentiate between true CCD cases and other cases that share this symptom. However, the 37.5 percent of operations that reported having at least some of their colonies die with this symptom had a total colony loss of about 41 percent. This compares to the roughly 17 percent colony loss reported by beekeepers who didn't have "the complete absence of bees."

It's important to keep in mind that at least 71 percent of all colony deaths can be attributed non-CCD causes. This really emphasizes the need for further research into pollinator health in general -- not just CCD.

Last October NATURE Online reported the research breakthrough that Israeli Acute Paralysis Virus (IAPV) had been found in over 96 percent of bees from CCD-affected hives. This doesn't mean that IAPV is the only -- or even the main -- culprit behind CCD, however. Could you tell us about what has been learned since that time about the role IAPV may play in CCD?

Research published in September 2007 showed that among known pathogens, IAPV was the most consistent indicator of CCD. And it was found in at least 19 states. However, Kashmir Bee Virus (KBV), and two microscopic spore parasites -- Nosema apis and Nosema ceranae -- were also found to be indicators of CCD. Also, no clear cause and effect relationship was found between IAPV and CCD. Not all colonies with IAPV die off, and it's possible that other stress factors are needed to make IAPV deadly to bee colonies.

Besides IAPV, how has the investigation evolved since last fall in regard to the other potential causes, such as pesticides and varroa mites? What kinds of studies are going on now?

We are in the final stages of receiving individual colony analysis on pathogens and pesticides from the original data set and are analyzing and writing up these results. IAPV cannot explain CCD losses by itself, and other factors are being examined.

Last year we monitored 280 colonies as they moved up and down the East Coast. We are processing this data, to test some predictors of disease based on last year's studies.

We've also discovered some new conditions that seem to be affecting survivorship, and we are trying to figure out what exactly these are.

The effort to look at the impacts of pesticides has reveled a surprisingly large number of different pesticides in pollen, wax, and the bees themselves -- and some of these at high levels. These pesticides are used in agriculture and sometimes by the beekeepers themselves. We have initiated investigations into the sub-lethal effects of pesticides, potential synergistic effects of multiple pesticides, the impact of pesticides in combination with other stress factors -- like IAPV or varroa mites -- and the use of irradiation to mitigate pesticides residues.

In many media reports on CCD, there is a feeling of inevitability that suggests that beekeepers are just waiting for CCD to decimate their hives. What can beekeepers do now?

Beekeepers are advised to practice good hygiene with their hives. For example, they

shouldn't combine weak colonies with stronger ones or exchange colony hardware. This kind of contact can spread diseases. Beekeepers should irradiate "dead-out" equipment -- or at least store it for as long as possible -- before reusing it with other colonies.

There are also products that beekeepers can use to control other colony stresses, like varroa mites and other parasites. And because nutrition is a concern, beekeepers should make sure their colonies are well fed, especially with a protein supplement.

Many of our viewers are interested in doing whatever they can to help. What would you tell them?

There are many things people can do: become a beekeeper, support beekeepers by buying local honey, plant a pollinator garden, and use less pesticides.•

ScienceDaily (May 26, 2008) — Colony Collapse Disorder, diseases, parasitic mites and other stressors continue to take a devastating toll on U.S. honey bee populations, but Pennsylvania beekeepers on average fared better than their counterparts nationally during this past winter, according to apiculture experts in Penn State's College of Agricultural Sciences.

A recent survey by the Apiary Inspectors of America found that losses nationwide topped 36 percent of managed hives between September 2007 and March 2008, compared to a 31 percent loss during the same period a year earlier.

Pennsylvania fared better, with losses of about 26 percent, compared to nearly 48 percent the previous year. "About 70 percent of the state's losses this year were not related to Colony Collapse Disorder," said Dennis vanEngelsdorp, acting state apiarist for the Pennsylvania Department of Agriculture and a Penn State senior extension associate in entomology.

He said the state's lower overall bee-mortality rate may be due to greater awareness of bee health issues and beekeepers' diligence in controlling varroa mites, nosema and other threats. He pointd out that weather conditions also may have been more favorable for winter survival.

vanEngelsdorp noted that the state's comparatively lower losses meant that beekeepers this spring were able to meet the pollination demands of Pennsylvania's $61 million apple industry, which is the fourth largest in the country. Apples are completely dependent on insects for pollination, and 90 percent of that pollination is accomplished by honey bees.

"However, the cost of pollination has risen dramatically," he said "This year, apple growers paid about $65 per colony, compared with $35 to $45 in the past." A typical apple orchard requires one colony per acre to achieve adequate pollination. Last year, apple growers harvested about 21,500 acres.

Later this year, pumpkin growers may pay $95 to $105 per colony, compared to $55 to $65 last year, vanEngelsdorp said. Meanwhile, Penn State researchers are making progress in pinning down the cause or causes of Colony Collapse Disorder (CCD), a mysterious ailment that threatens the beekeeping industry and the crops and native plants that rely on honey bees for pollination.

In fall 2007, a team led by Diana Cox-Foster, professor of entomology, reported a strong correlation between CCD and the presence of Israeli acute paralysis virus, making the pathogen a prime suspect in the disease. Since that time, researchers have introduced IAPV to healthy honey bee colonies in a controlled greenhouse environment in an effort to induce a collapse.

"Within one week of introducing the virus, we observed dramatic bee mortality, with bees dying outside the colonies across the room in the greenhouse," said Cox-Foster. "Bees were found on the floor with paralytic-type movements, and guard bees were observed removing paralytic bees from colonies and flying across the room. The majority of these 'twitcher' bees were found to have IAPV."

Cox-Foster noted that within a month, infected colonies had declined to small clusters of bees, many of which had lost their queens. "These data indicate that IAPV is a highly pathogenic virus," she said. "But they do not yet support a finding of IAPV as the sole cause of Colony Collapse Disorder. We still suspect that additional stresses are needed to trigger CCD."

Among the potential triggers being investigated are environmental chemicals. Penn State scientists analyzing pollen, wax, adult bees and brood (larvae) have found the presence of dozens of chemicals, including pesticides used by agricultural producers to protect crops and by beekeepers to control hive pests such as parasitic mites.

"This raises several complicated questions," said Maryann Frazier, senior extension associate in entomology. "Some of these compounds could react with each other to cause toxic effects or could combine with viruses or poor nutrition to weaken immunity and cause colony collapse. We also need to do more research to understand these chemicals' sub-lethal effects on bees."

Though the role of chemicals in Colony Collapse Disorder is still unknown, Frazier noted that beekeepers need more options for controlling varroa mites so they can reduce their reliance on chemicals. "With the sheer number of compounds we're finding in hives, it's hard to believe that pesticides aren't contributing to the general decline in bee health," she said. Adapted from materials provided by Penn State.

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

In the winter of 2006/2007, more than a quarter of the country's 2.4 million bee colonies -- accounting for tens of billions of bees -- were lost to CCD, Colony Collapse Disorder. This loss is projected have an $8 billion to $12 billion effect on America's agricultural economy, but the consequences of CCD could be far more disastrous.

The role honeybees play in our diet goes beyond honey production. These seemingly tireless creatures pollinate about one-third of crop species in the U.S. Honeybees pollinate about 100 flowering food crops including apples, nuts, broccoli, avocados, soybeans, asparagus, celery, squash and cucumbers, citrus fruit, peaches, kiwi, cherries, blueberries, cranberries, strawberries, cantaloupe, melons, as well as animal-feed crops, such as the clover that's fed to dairy cows. Essentially all flowering plants need bees to survive.

A daunting question is: If honeybee colonies were so severely affected by CCD that pollination stopped, could we lose these crops from our markets and our diets forever?

"We're not there yet," says Jeff Pettis of the USDA. Pettis says there are steps researchers and beekeepers can take to ensure that the bee population doesn't plummet to catastrophic levels. "One measure beekeepers have been taking is to keep bees as healthy as possible -- improve nutrition and reduce stress," says Pettis. Consumers have become more demanding and expect to have fruits and vegetables available to us all year round. In order to achieve this, commercial beekeepers haul colonies of honeybees across the country so their pollination services can serve all growing seasons. The season may start with almonds in California, then move on to apples in the Northwest, cranberries in New Jersey and Maine blueberries. The constant moving about places stress on the bees. In addition, certain crops that may be in the pollination circuit, like cranberries and cucumbers, are not very nutritious for bees. To keep the bees healthy, beekeepers may need to ease up on their schedules. It may be necessary for them to retire bees for a particular season or skip some less nutritious crops entirely.

Of course, nature has its own safeguards to keep crops pollinated. Honeybees aren't our only pollinators. Other insects and birds pollinate fruits and vegetables as well. The problem with other natural pollinators picking up the bees' slack is that today's agricultural industry has simply grown too large for them to keep up. The leviathan that is U.S. agriculture creates a huge demand for pollination. Because honeybees are relatively mobile and can pollinate a generous number of crops, they have been the ideal recruits to meet our crop needs. But honeybees don't perform such feats naturally without help -- lots of it. Commercial beekeepers keep colonies nourished and healthy and move their hives from state to state in semis, selling their pollination services to farmers at a premium.

With the threat of CCD looming, researchers are starting to study how other pollinators like the larger bumble bees could step in for honeybees. "The Dutch have figured out how to use bumblebees," says Pettis. Bumblebees share many similarities with honeybees. Both are social nesters, although the bumblebees' society is not as highly ordered as that of honeybees. Also, bumblebees make a new nest each spring by solitary queens, who hibernate through the winter. Honeybees remain in the old nest.

Perhaps the biggest consideration is an economic one. Bumblebees last just 2 months and cost $200 per colony, whereas honeybees can last several months in the summer with colony rentals running only $100 to $140. As a result, the use of bumblebee pollination is usually confined to high-value crops like tomatoes. Clearly, the use of bumblebees is a step in the right direction, but not a final solution.

"There's nothing waiting in the wings that can replace honeybees at this time," says Pettis, "but we can solve the problem in honeybee health." Pettis says that by focusing on reducing stress and improving nutrition, beekeepers can limit some of the factors that potentially lead to disastrous conditions like CCD, thereby keeping bees -- and our diets -- healthy.

Note from the editor: There is so much relevant and timely information available this issue that I just couldn't stop finding articles. Thanks to Kurt for his input also. Read these slowly ... several times! I did.

Unless otherwise noted, the articles came from the Public TV Network (pbs.org). More material is there if you wish to check it out (a segment on"How Can You Help the Bees"). The June 2008 program follows up on their program last year gives more details on research and findings since the first show. Make an effort to view it when it shows again. NF

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