

THE BUZZ!

October 2006

An electronic newsletter from the Kentucky Department of Agriculture's State Apiarist's Office

Kentucky beekeepers report poor honey crop in 2006

We're starting to see some cooler daytime temperatures (below 50°F), so hopefully your hives are ready for winter. Earlier in October I e-mailed a warning for beekeepers to check the food stores in their hives since a great number of Kentucky beekeepers have reported (and I have observed) a lack of food stores in hives this fall. The folks at the W.T. Kelley Company have sold record amounts of high-fructose corn syrup this fall, which means a lot of sugar syrup has been fed to honeybees during the last couple of months. What I described in the June BUZZ! as a "fair to mediocre" honey crop turned out to be a terrible crop for many beekeepers in the state. Hives then entered the fall virtually empty of food stores. Ohio and Tennessee beekeepers have reported much-reduced honey crops in their states as well. In addition to stories of starving hives, I'm getting more reports of Small Hive Beetles (SHB) in locations where they were previously unreported. I expect that this is partly beetles seeking new territory (SHBs are capable of flying long distances to new locations), but perhaps also because many infestations in Kentucky are very light (just a few beetles seen in a hive) and it takes a while before numbers increase enough to be detected. Also, an increase in feral colonies in Kentucky may be contributing to the spread of the SHB. I found beetles in my hives for the first time this year. Read further for more information regarding both of these problems.

Cold weather feeding tips

We've started experiencing cold weather, which will discourage bees from breaking their cluster and consuming sugar syrup in feeders, but hopefully we'll see some warmer weather in November and can still do some late feeding. In fact, we often have brief periods of warm weather (above 50°F) throughout the winter in Kentucky when we can do emergency feeding with sugar syrup.

There are a couple of considerations to keep in mind when feeding bees during cooler weather. The first is to feed THICK syrup. "Thick" syrup is two parts granulated sugar to one part water. If feeding high-fructose corn syrup, feed it undiluted. Thinner syrup must be dehydrated by the bees, which is difficult or impossible for the bees to accomplish in cooler weather. Also, I always recommend feeding inside rather than outside the hive, but this is especially important in cool or cold weather. Outside feeding is done with sugar syrup in an open container or by using an entrance type feeder. At any time of year, using the entrance or open feeding methods can result in feeding bees from hives that do not need to be fed. You may even be feeding your neighbors' bees or bees from feral hives. In cold weather, inside feeders have the added advantage that bees will go to them more readily than to feeders outside the hive.

There are several varieties of top feeders sold by beekeeping suppliers, all of which work well. However, purchased top feeders are not inexpensive. A common "cheap beekeeper's" method of top feeding is to remove the outer cover and place an empty (no frames) deep hive body or two empty shallow supers on top of the inner cover. Pail feeders (pails with holes in the top) or jars (any size) with small holes in the lids can be placed over the inner cover. Bees will go through the hole in the inner cover to the syrup. Raise the feeders or jars slightly with a couple of small pieces of wood (about 1/4" high) or with small twigs so the bees can get at the holes on the bottom of the feeders. You can also use entrance feeders (even several at a time) in this manner. Then place the outer cover on top of the empty hive body. Canning jars, plastic tubs, and purchased pail type feeders can all be used in this way. I've known people to purchase new empty paint cans and use them as feeders. Beekeepers even use quail watering devices in this manner – similar to automatic chicken waterers, but smaller.

Jed Davis, secretary of the Blue Grass Beekeepers Association, advocates an "even cheaper beekeeper's" method. Jed uses zip-lock bags (I would suggest gallon bags) filled with syrup and placed directly on the top bars of the hive's top brood box. A razor slit in the bag will allow bees access to the

syrup, and the syrup will not leak out. Then just remove the inner cover and use an empty shallow box between the top brood box and the lid, and you have a very cheap inside feeder. You can go to the Web site of Texas beekeeper John Caldeira (*John's Beekeeping Notebook*) for a photo and more information on plastic bag feeding: <http://outdoorplace.org/beekeeping/feeding.htm>. John also has other photos and beekeeping information at his nice beekeeping Web site.

I personally prefer division board feeders, which replace a frame in the brood box. With these feeders there are no jars to fill, which is why I like them! They are also relatively inexpensive, \$3-\$4 each. Many beekeepers complain about drowned bees in these feeders. (Which often makes these feeders even cheaper for me, since some of my beekeeper friends throw them away, and I retrieve them from their trash!) But I minimize the number of drowned bees by placing small pieces of wood as floats in the feeders – I lose very few bees this way. And by placing the feeders in the bottom brood box, I can fill them in by just moving the top brood box over slightly – just enough to expose the end of the feeder - and quickly filling them from a 5-gallon bucket. They hold a gallon of syrup, and I can fill several feeders in just a few minutes. I install these feeders in the fall and remove them in the spring.

If you need further information on feeding, do not hesitate to contact me.

“Emergency” winter feeding of bees with fondant (sugar candy)

In the December 2005 edition of the BUZZ! I wrote an article about making and feeding with fondant candy, which is a cold weather alternative to feeding with syrup. I've had several inquiries already this fall about fondant candy, so I'm reprinting that article below.

I consider most feeding of bees, with the exception of feeding nucs or conducting what's called “stimulate” feeding in the early spring, as emergency feeding. (Stimulate feeding is slowly feeding a thin sugar syrup mixture to bees to artificially stimulate the queen to begin egg laying early in the spring.) We're better off in any season if our bees are able to collect enough nectar to meet their needs without feeding. But a lot of years Mother Nature just doesn't cooperate. Either the nectar is not available for them to gather, or we have a hive that is weak for some reason and doesn't have the bees to bring in sufficient nectar. In that case it is necessary for the beekeeper to feed the hive. Without a doubt, feeding during the cold winter months falls into the category of emergency feeding because of the difficulty of getting bees to collect the food when it's offered, and of providing food in a form that they can utilize. The common methods of feeding syrup to the hive can be difficult (though not impossible) in the winter. To avoid the difficulties, beekeepers will sometimes make fondant, or sugar candy, for cold weather feeding. Fondant is made much like fudge or cooked candy. Here are a couple of recipes. Others can be found in beekeeping books or on the Internet.

A small-batch fondant recipe: Mix 2 cups granulated sugar, 1.5 cups of water, 2 tablespoons corn syrup, and 1/8 teaspoon cream of tartar. Stir until sugar dissolves and continue to heat without stirring until the mixture reaches 238 degrees F. (Use a candy thermometer.) If you use bottled corn syrup from the grocery store, make sure it is “light” corn syrup, not “dark”. Dark corn syrup has molasses in it, which should not be fed to bees. Pour the mixture onto a cool surface and let it sit until cool enough to touch. Then beat the candy until it is thick and pour it into a thin container or mold, like a cookie sheet lined with wax paper, to harden. The candy can be broken up and placed over the inner cover. Alternatively, an empty honey super can be placed on top of the brood chamber and the candy placed on stick supports on the top of the brood bars. Some beekeepers will make a special small fondant feeder similar to an inner cover, but deeper (1 inch or more). The candy can be poured into this feeder and placed over the brood box upside down. Another recipe for larger batches calls for 15 pounds sugar, 3 pounds corn syrup, 4 cups water, and 1/2 teaspoon cream of tartar. Make the candy in the same manner as the small-batch recipe. Cooking and beating are the keys.

Another substitute for making fondant is to purchase baker's fondant from a bakery or a grocery store that bakes and sells iced cakes. The white sugar icing that is used on commercially baked cakes is nearly the same thing as fondant and can be used in the same way. Bakers purchase this white icing in buckets,

and you may be able to persuade a local baker or grocer's deli to sell you a bucket. But make sure it's white – not flavored.

Another emergency winter feeding method often used by beekeepers is to place dry granulated sugar on the inner cover. Sometimes the bees will take it, and sometimes they will not. Sometimes they'll decide the sugar is foreign matter and will carry it out of the hive. This is definitely emergency feeding, but some beekeepers have told me that they have saved hives from what they thought was certain winter starvation by offering them dry granulated sugar.

Bees in “the news” – the honeybee genome project

In an article in THE BUZZ! a couple of years ago I mentioned the announcement of the honeybee genome project. This project sought to identify all the genes in honeybee DNA and determine the sequences of the chemical base pairs that make up the DNA. The honeybee genome project was a follow-up to the human genome project, which identified the genetic makeup of human DNA. Honeybees were the first insect genome to be sequenced. Honeybees were chosen due to their complex social behavior and their importance as the “premier pollinator” on earth.

Recently, while driving into my office, I listened to a report from National Public Radio about how researchers are using the results of this research to study the relationship of honeybee behavior to its genetic code. Some of this research looks at how genes that affect honeybee behavior are tuned “off” or “on.” One researcher is looking at the difference in activity of certain genes in nurse bees as compared to foragers. As beekeepers know, the behavior of nurse bees and forager bees is very different. Another researcher is studying the movement of honeybees from Africa to Europe. Honeybees, like humans, are believed to have originated in Africa. There are significant genetic differences between honeybees from Eastern Europe and those from Western Europe. This difference indicates separate migrations from Africa to Europe by the ancestors of the modern honeybee.

If you find this subject as interesting as I do, you can go to <http://www.npr.org/templates/story/story.php?storyId=6386598> and listen to this report. Some other links to research related to the honeybee genome project can be found at the following sites:

<http://www.genome.gov/11008252>

<http://sciencenow.sciencemag.org/cgi/content/full/2006/1025/1>

<http://www.entomology.cornell.edu/BeePhylogeny/index.html>

<http://www.chron.com/disp/story.mpl/tech/news/4288584.html>

The healing power of honey!

Another Web-based article related to beekeeping was forwarded to me by a Mt. Sterling beekeeper. This article was from the Web site of Wired Magazine, which is a technology-related magazine and not the place where I would expect to see articles related to beekeeping or honey. But there it was. This article talks about the ability of direct applications of honey to aid in the healing of wounds in human flesh. I have in the past heard similar testimonies from beekeepers, especially reports of honey being used to help heal bedsores. You can read this article at http://www.wired.com/news/technology/medtech/0,71925-0.html?tw=wn_index_24

Small Hive Beetle seen in more Kentucky counties in 2006

The Small Hive Beetle (SHB) is a destructive pest of honeybee colonies and is native to Africa. Adult beetles do little damage in a hive; in fact, large numbers of adult beetles are sometimes present in hives with no damage to be observed. However, SHB larvae, especially when present in large numbers, will consume honey and pollen and will cause severe damage to beeswax comb – especially fresh comb. In severe infestations, honey may be released from the comb and become fermented, and the bees may abandon the hive. While SHBs have been present in Kentucky at least since 2002, cases of severe damage from SHB larvae is not common and usually happen only if the colony has already become weakened for reasons other than the presence of SHB (for instance, varroa mites or queenlessness).

The Small Hive Beetle was identified for the first time in Kentucky in the fall of 2002 east of Paducah and in Georgetown. Until this year, observation of the SHB has mostly been in western Kentucky counties near Paducah and counties near Georgetown. This year SHB identification has been made in other parts of central and western Kentucky, including (but not restricted to) counties in the Bowling Green, Hopkinsville, Elizabethtown, and London areas.

Some important facts to keep in mind concerning SHB in Kentucky: Most of the time SHB numbers in a hive in Kentucky are very low, and the presence of the beetles may easily be missed. That means it is possible that the beetles are present in virtually any area of Kentucky (though eastern Kentucky is one region where we are not yet seeing beetles). While the adult SHB will survive in Kentucky through the winter in a hive's cluster, you will not see larvae during the winter, and the control methods that are used for SHB (CheckMitePlus and SHB traps) will not work during the winter.

During the next couple of months I will be preparing a new handout on the SHB in Kentucky. When it is completed, I'll make it available on my Web page, via e-mail, as a handout at this winter's beekeeping schools, and at future beekeeping meetings. At the 2007 Bluegrass Beekeeping School and the South Central Kentucky Beekeeping School (more on these schools elsewhere in this newsletter), classes will be taught on the biology and control of the SHB.

2007 winter beekeeping schools in Kentucky

Plans are underway for at least four beekeeping schools in Kentucky during the winter and early spring in 2007. Beekeeping schools will be held in Bowling Green, Frankfort, Henderson, and near Mayfield. Below is preliminary information about the schools. Watch future issues of THE BUZZ! and the State Apiarist's Web site for more information.

The Allen County Beekeepers Association will host its third annual Central Kentucky Beekeeping School on Saturday, Feb. 3, 2007, at the L.D. Brown Agricultural Center, Western Kentucky University Farm, in Bowling Green, Ky. This one-day school will have four levels for beekeepers with varying experience: Introduction to Beekeeping, Beginner, Intermediate and Advanced.

For more information, including class schedule, see the Allen County Beekeepers Association's Web site at www.allenkybees.com or contact Steve Meador, ACBKA President, 4110 Capital Hill Rd., Fountain Run, KY 42133-8533, phone (270) 434-4064, e-mail honeyfarm@scrtc.com, or Martin Hickey, Beekeeping School Coordinator, 1664 Blue Level Road, Bowling Green, KY 42101, phone (270) 846-1702, e-mail Queenannsrevenge2002@Yahoo.Com.

The fourth annual Bluegrass Beekeeping School will be held Feb. 10, 2007, on the campus of Kentucky State University in Frankfort, Ky. The class schedule consists of a beginner's class track as well as classes of interest to more experienced beekeepers and is still being planned. A pre-registration form will be available at my Web site within a couple of weeks, along with a tentative list of classes and speakers. Dr. Tom Webster from Kentucky State University will conduct the beginner track of classes (four beginner classes – one during each breakout session) for new beekeepers.

Once again, a vendor's trade show will be a part of this year's school. This will give beekeepers an opportunity to view, order and purchase beekeeping equipment while at the beekeeping school as well as to get to know some of the various suppliers and their equipment. A list of vendors who will be participating will be listed at the State Apiarist's Web site as the vendors respond.

For the most current Bluegrass Beekeeping School information, more detailed information about the classes and names of session presenters, and advance registration forms, check the Kentucky State Apiarist's Web site or contact Phil Craft (contact information at the bottom of this newsletter).

On March 3, 2007, the second annual Henderson beekeeping school will be held at the Family Life Center on U.S. 60 in Corydon, Ky. This year's school will offer three separate tracks of four classes each, including classes for new (and beginning) beekeepers as well as classes for those more experienced.

The third track will be for the spouses (and non-beekeepers). A small trade show of beekeeping supply vendors with a variety of supplies and equipment is also planned for the Henderson school. A pre-registration form will be ready within a few weeks and accessible at the State Apiarist's Web site along with a tentative list of classes or contact Paul Stone at 6005 Hatchett Mill Rd, Spottsville, KY 42458, phone 270-826-2767, e-mail bpstoneky@bellsouth.net (using bee school on subject line).

Kent Williams, President of the Lake Barkley Beekeepers Association, will host a beekeeping school at his home in Wingo (near Mayfield in Graves County) from March 7 (Wednesday) through March 10 (Saturday). This four-day school will cover all aspects of getting started as a beekeeper, and on the final day of the school a hive of bees will be awarded to one of the "NEW" beekeeper participants. This school will run from 9 a.m.–about 4 p.m. each day. Attendance every day of the school is not required. For more information, watch the State Apiarist's Web site or contact Kent Williams at 580 SR 385 N, Wingo, KY 42088- 8703, phone (270) 382-2348, e-mail kvwilliams@wk.net.

To have THE BUZZ! sent directly to you!

If someone has forwarded you this issue of THE BUZZ! and you would like to have THE BUZZ! sent directly to you via e-mail, send me an e-mail at phil.craft@ky.gov and ask to be added to my list. I organize my e-mail list by name, so make sure you sign your e-mail with first and last name. Also, if you are a Kentucky beekeeper, I'd appreciate knowing a little about you and your beekeeping activities – address, how many hives, years of beekeeping experience, and if you belong to a local beekeeping group or to the Kentucky State Beekeeping Association. I would also like your mailing address. This information helps me better serve the beekeepers of Kentucky by knowing where beekeepers are located and allows me to let you in on regional beekeeping activities or to drop you a note if I discover your e-mail address stops working. This e-mail newsletter is not restricted to Kentucky residents. Many subscribers are from our surrounding states, especially Tennessee and Indiana. If you're from out of state, I need only your full name and home state; any other information is optional.

Keep those smokers lit and your bee veils on!

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