

"THE BUZZ!"

September 2008

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

Have you checked your hives for food stores recently?

Kentucky is officially now in a drought situation - Eastern Kentucky is in a severe drought status, Central Kentucky is in moderate drought, and Western Kentucky is in mild drought. This lack of rain has, without doubt, slowed or prevented a fall nectar flow here in Kentucky (and possibly in the surrounding states, for those readers from outside Kentucky). These conditions seem to be getting worse quickly. I'm receiving numerous calls from beekeepers about hives with virtually no honey stores in the hive. Have you checked your hives for stored honey lately? If you have not, I urge you to do so SOON. Read on!

Preparation for winter

Just as the squirrels are collecting nuts, and bears are putting on fat, our bees have been collecting honey to get them through the winter. Our job as beekeepers is to help them be as ready as possible.

We have three areas of concern for our bees as we look down the road toward winter. Are there enough bees in the hive and is the queen present? Are there sufficient food stores? And are our bees healthy?

Are there enough bees in the hive and is the queen present?

Our honeybees do not hibernate in winter. They gather in a large cluster, eat stored honey, and stay warm by virtue of the mass of this cluster of heat-producing bees. Large clusters are more successful at survival than smaller clusters, and keep in mind that not all of the bees in a hive will survive until spring. Only the bees that emerge late in the year will survive until spring, so a honeybee colony needs a minimum number of bees as they go into winter to cluster successfully. Notice how many bees are in your hives. Does each hive have at least a deep box full of bees? A deep box full of bees means about 30,000 bees in a colony. If it's not quite full, and you have bees in a second hive body, they are probably OK as well. Most of the time, if we have a healthy hive with multiple hives bodies, we'll easily have 30,000 bees in it. Why 30,000 bees? A hive with less than about 30,000 bees may not make it through the winter. This is due to the natural die-off we get during the winter and to the need for enough bees to form a cluster to maintain sufficiently high temperatures in the hive. If a hive doesn't have enough bees in it, combining it with another hive is probably the best action to take. If you need information on how to combine two hives, let me know.

All hives, regardless of hive strength, must have a queen as they go into winter. To verify the queen's presence, we don't need to see the queen. Seeing eggs and/or larvae in the hive is sufficient evidence of her presence. However, the failure to see eggs or larvae in the current drought situation does not necessarily mean that she is not present. Due to the absence of a nectar flow, the queen may have ceased laying eggs; this is a normal response to these conditions. If you are not seeing eggs or larvae, a careful search for the queen may be required. Or if you are just starting to feed the hive, you can look at the hive again a week or so after the start of feeding. If the hive has a queen, you likely will see the results of the resumption of egg laying at that time.

If you do determine that you have a queenless hive, you will most likely need to combine the queenless hive with another hive due to the unavailability of queens at this time of year.

Are there sufficient food stores in the hive?

With the continuing lack of rain in Kentucky, we've not been seeing much of a nectar flow in the last couple of months, so we all need to check our hives for honey stores. If you don't see several frames of honey and signs of nectar being brought, you likely need to feed this fall. You can also do a quick heft test. Lift up on the hive from the rear; if the hive lifts easily, it is low on stored honey and needs feeding. But nothing beats actually looking in the hive for full frames of stored honey.

In addition to checking for stored honey, we can look in the comb cells for uncapped nectar – a sign that fresh nectar is being brought into the hive. With the dry conditions we've been experiencing lately, we may look in vain. Another sign to watch for is just activity or lack of activity in and out of the hive. No, or little, activity means that not much nectar is being brought in. Blooming does not necessarily mean nectar flow. Dry weather can result in blooms and pollen, but no nectar.

And are our bees healthy?

Honeybees that are weakened by disease or pests (and they may not even show visible signs of being sick) will not live as long as healthy, disease- and parasite-free bees. This is especially of concern in the fall when we need our bees to live until brood production takes off again in the spring. Premature death of honeybees weakened by disease or parasites may result in a reduced cluster size in the colony later in the winter and possibly in the loss of the colony. I often get reports from beekeepers about late winter or early spring losses of what appeared in fall to be strong, healthy colonies. Taking the bees into winter as healthy as possible is of the utmost importance.

The greatest threat to our bees today is still varroa mites. Control of this parasite is basic to having healthy bees – especially healthy fall bees, which we need to live until spring. While we have several non-chemical strategies for reducing varroa populations in our hives, such as screen bottom boards, varroa-resistant queens, etc., if varroa numbers are high, chemical controls may be necessary. Increased varroa mite numbers will also contribute to the susceptibility of our bees to a variety of diseases, which healthy, varroa-free bees might resist.

We have five different chemical control products labeled for use in controlling varroa mites in Kentucky. Which product we choose depends on several considerations, including: effectiveness (how well does it kill varroa mites), safety (both for humans and bees), ease of application (and this may be affected by how many hives you have and whether they are at home or in an outlying beeyard), and cost (which may be more of an issue if you have a large number of hives).

We can classify these chemical controls into two categories: varroa strips (Apistan and CheckMitePlus) and the newer fumigants (Apiguard, Api Life Var, and Miteaway II).

The varroa strips are plastic strips that contain a pesticide. These strips are placed by the beekeeper into the hive between the frames. The bees, and thus the mites, come into contact with the chemicals on the strips, and the mites are killed. While both Apistan and CheckMitePlus are sometimes still effective, we have been using these products for many years, and varroa mites have developed varying degrees (sometimes a great degree) of resistance to these products. In addition, there is great concern about negative effects of these chemicals on the health of our bees, especially regarding queen and drone fertility, and long-term sub-lethal effects.

A newer class of varroa control chemicals kills mites by dissipating as a gas into the hive and killing the mites as a result of fumigation. These products – Apiguard, Api Life Var, and Miteaway II – can also be very effective, and varroa mite resistance is not an issue with these products. In addition, these are fewer toxic chemicals, and most are derived from natural materials (like the herb thyme) and are thought to be very safe for honeybees. However, being fumigants, temperature requirements are constraints to their use. All three products have different temperature ranges at which they are effective. If it is too cold, the chemicals will not vaporize, too hot and they dissipate into a gas too quickly and will drive the bees from the hive. However, in Kentucky, fall temperatures are often ideal for using these newer varroa control products.

In addition to temperature requirements, these products also vary in cost, ease of use, and number of applications required. I have an information sheet I have distributed to many beekeepers with more details on all of these products. I can e-mail or mail you a copy; just ask. And if you have any additional questions on any of these issues, contact me.

Nosema disease

Another risk to the health of our honeybees is nosema disease. Nosema is a fairly common disease of a honeybee's food tract and, more precisely, of its ventriculus, which functions as its stomach. It is caused by a microorganism that is ingested by the honeybee and readily spread throughout the hive. An increased incidence of the disease is often seen during winter when honeybees are confined in the hive for extended periods of time. Nosema is often thought of as a somewhat minor problem, resulting in weak colonies in the spring (though also contributing to winter losses and superseding of queens). However, the recent discovery in the United States of a new, perhaps more destructive strain of nosema, nosema ceranae, has resulted in a heightened concern among honeybee researchers. One of the difficulties with nosema is the problem of diagnosis. Laboratory testing of a sample of bees is required in order to determine whether or not a hive is infected. For this reason, many beekeepers have chosen to routinely treat for the disease without first testing. Nosema has been controlled for many years by the use of the antibiotic fumigillin, which is fed to honeybees in the fall and/or spring mixed in sugar syrup. While I normally discourage "preventative" treatments, especially with antibiotics, the heightened concern about nosema ceranae has inclined me to support routine treatment, even without testing. So unless your hives have been given a clean bill of health after testing of a bee sample, I suggest the addition of fumigillin in the first two gallons of sugar syrup fed to each hive in the fall.

Fumigillin can be purchased from any beekeeping supply company and comes in powder form. To mix fumigillin into the syrup, add 1 teaspoon of fumigillin to 1 gallon of sugar syrup. The powder mixes better in a smaller quantity of warm (not hot) water or syrup. So mix 1 teaspoon of the powder antibiotic into about ½ cup of warm water or syrup, then add this solution into a gallon of syrup. Increase quantities when mixing up larger volumes of medicated syrup. Do not put into hot syrup; let the syrup cool before adding antibiotic. Feed 2 gallons of medicated syrup per hive. For more information, see this nice handout, <http://maarec.cas.psu.edu/pdfs/CHEMICA1.PDF>, from the Mid-Atlantic Apicultural & Research Extension Consortium Web page concerning the use of fumigillin.

Fall Swarms

A consequence of the current lack of a nectar flow may be an increase in fall swarming. The books all say that late summer or fall swarming is unusual, and normally I do not get many reports of swarming in Kentucky after the first of July. This year is an exception. I have gotten a number of calls about swarms, mostly from non-beekeepers with clusters of bees in their yards. Several years ago, during another period of increased fall swarming, a beekeeper friend, Larry Blandford, commented that he thought that most of those fall swarms were not really swarms. He thought that they were bees absconding from hives that were starving during a poor fall nectar flow. I thought at the time that Larry was right and am even more convinced of it today. That same fall I had an observation hive that was doing very poorly and had dwindled to perhaps a pint of bees. One afternoon my wife reported seeing a very small swarm on a bush in front of our house. I then checked my observation hive, and the bees were gone - every single bee. My wife had seen the remnant of the bees from my observation hive. Richard Taylor, a longtime contributor to Bee Culture magazine, described in an old column a type of "starvation swarm" that is the result of a dearth of nectar and pollen. I think this fall we are seeing many of Richard Taylor's "starvation swarms" in Kentucky.

Upcoming beekeeping events in Kentucky!

Kentucky State Beekeepers Association 2008 Fall Meeting

October 4 (Saturday) the Fall Kentucky State Beekeepers Association Meeting will be held at the Christian County Extension Office in Hopkinsville. Special guest speaker will be Dr. Clarence Collison, Mississippi State University professor of entomology.

Registration is free for KSBA members, but there will be a \$10 fee per family (which will automatically make the family KSBA members for one year) for non-members. Lunch will be available for a small fee. See the Fall KSBA Bee Line or the KSBA Web page (<http://www.ksbabeekkeeping.org>) for more information.

2009 Bluegrass Beekeeping School

The annual Bluegrass Beekeeping School will take place on Saturday, March 14, 2009 at Kentucky State University in Frankfort. This location is the same as in the past two years. Once again Dr. Tom Webster will coordinate the beginner beekeepers track of classes. More information, including the name of the special guest speaker, will be available soon at the Kentucky State Apiarist's Web page (<http://www.kyagr.com/statevet/bees/>).

And hopefully it will NOT snow on March 14th!

Keep those smokers lit and your bee veils on!

Phil Craft, State Apiarist

Kentucky Department of Agriculture
100 Fair Oaks, Suite 252
Frankfort, KY 40601

E-mail Phil.Craft@ky.gov

Office phone: (502) 564-3956 (Call first during office hours)

Cell phone: (502) 330-0797 (Call cell phone if I'm out of the office or outside of office hours)

FAX number: (502) 564-7852

State Apiarist's Web page: <http://www.kyagr.com/statevet/bees>

Kentucky State Beekeepers Association Web page: <http://www.ksbabeekeeping.org>