



# B-PLUS

BEEKEEPING REPORT FROM MICHIGAN STATE UNIVERSITY

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## LETTERS TO THE EDITOR

It would seem to me that some of you would have a comment that you would like to make about beekeeping in general, or even about something I have written. If that is the case, please write me a letter to the editor. I will reserve the right to "edit" any such letter so as to keep it within a certain length or relevant content. There must be some of you out there that are itching to present your view on abeekeeping topic.

## THE OTHER HALF OF BEEKEEPING

Beekeepers usually spend a lot of effort in managing their bees. That is good! However, it is also becoming more and more clear that if we are going to be successful in this enterprise we need to consider where the bees are getting their nectar. As Dr. George Ayers has said, we need to manage the "other half" of beekeeping. That is, we need to be more concerned with the nectar resources.

In many respects it is a problem that is mostly outside a beekeeper's influence. But in many ways you can help by encouraging plants along roadsides, planting small patches of high yielding nectar plants, and by negotiating with a farmer to delay mowing a field of alfalfa until after a period of time. In an article that George and I wrote a year ago we showed that alfalfa could produce about 100 lbs. of honey per colony. Maybe it is time we considered paying the farmer not to cut until the bees had a chance to collect the nectar.

If my own experience is any indication, most beekeepers do not know much about plants. Most of the time we don't even know where the bees are foraging. How can we expect to locate good bee yards without knowing the truly important honey plants? George is in the process of re-writing the chapter on honey plants for a revision of "The Hive and the Honey Bee". His experience is that most beekeepers can't be sure of their top 10 honey plants.

## WINTERING PROBLEMS SURFACE

This past year turned out to be much worse than previously expected. This was probably because of the effect of tracheal mites in some apiaries. Yes, tracheal mites were implicated in causing winter losses of more than 30% in some apiaries. At this time it is not known to what extent they were solely responsible, but in most apiaries that had high mortality, mites were also found. The typical pattern that has emerged is that when the beekeepers examined the colonies in late February or March the colonies were dead with lots of honey left in the hive. I suspect that the colonies died in early winter, or at least before the colony started rearing brood. Thus not much honey had been consumed.

We know that the tracheal mite causes the bees to have shortened lives. What we may not know is to what extent this parasite interacts with such diseases as nosema. Some of the beekeepers noticed a large amount of fecal spotting of the hives that had died. Whether this was due to nosema or was caused by the mites is not known.

If you have concern whether your colonies have the tracheal mite, *Acarapis woodi*, you can have your local bee inspector take samples, or you can send them a sample. Normally, this is a composite sample. That is, a whole apiary is treated as a single sample. With what we know about drifting, this seems to be a reasonable way to test for mites.

If you know that you have mites then the alternatives are to treat with menthol, or start selecting your colonies for resistance. For many beekeepers neither alternative is very acceptable. However, if we have to add a chemical to bees then menthol is as good as we could expect. Many kinds of honey contain natural menthol so it is not the same kind of contaminant as Terramycin or a pesticide would be.

Selecting for resistance may also not be possible for many beekeepers. It is important for all beekeepers to keep looking for colonies that survive in apiaries that are known to have mites and have not been treated. Also to be aware of feral colonies in your area. If they persist in areas of infestation, these feral colonies may have resistance. I also think that the U.S.D.A. will soon import the tracheal mite resistant stock found Europe where the mite has been for 60 years. They also are looking for varroa mite resistance in Eastern Europe, where the varroa have been found for 15 years. I have not been a real advocate of importation since I feel that we probably have all of the genes necessary for resistance in this country. However, there is also no need to re-invent the wheel. If tracheal mite resistance is available in England and Europe then we should import it, at least under controlled conditions. Help may be on the way for our mite problems, but it may be a couple of years away.

## TALES FROM THE LONESOME HIVE

I managed a couple of late winter looks at the colony even though there never was enough snow to ski by the hive. It then was time to put on a pollen supplement patty. It was a little late when this was applied (the first week of March) though the spring was a little cold too. They cleaned up the patty very well and when I gave them the first examination they were full of bees. They had been wintered in two deep brood chambers plus a 6 5/8 in. shallow super. At that first inspection they had bees on all of the frames so I did reverse the brood chambers. And since I figured that I might have some swarming problems with the colony I added another shallow super. It was a good thing that I added the super since we experienced one of the strongest dandelion and yellow rocket flows in some time and I filled the shallow with honey. It is not often we can produce 25-30 pounds of honey at this time of year. I may extract it as I don't have any of this kind of honey, and the dandelion honey is known to granulate very rapidly anyway. This way I will have it out of the comb.

The Lonesome Hive has become a very watched colony. I decided to graft some queen cells from it for the University Apiary. At the same time I also divided it to raise a new queen. If the division is OK I will then put the old queen in a nuc so that she will live a while longer. In a strong colony she will probably be replaced before the year is out, but in a nuc might live for a year or more.

## HONEY HARVESTING AND MOISTURE CONTROL

There are various methods of removing honey from the hive. These range from the simple bee escape to high powered blowers. Under most Michigan conditions any method can cause some trouble in harvesting, and in some cases will also cause problems with adding moisture to the honey.

First, let me make some comments about the hygroscopic property of honey (the ability of honey to absorb water). At room temperature, honey will take up moisture when the relative humidity (RH) is above 58%. Conversely, honey will give up moisture when the RH is below this amount. The honey bee colony maintains a RH between 50-60% within the hive. Honey will come to a good moisture equilibrium at the temperature and humidity found in a normal colony. This value is approximately 17% water.

Now let us show you how problems can develop. You only have a small number of colonies and decide to remove the honey using a bee escape in the inner cover hole. By experience you also know that it takes a couple of days for all of the bees to be removed. Thus, all the time that the escape is on the honey is not under temperature or humidity control. Even if you extract the honey immediately upon removal it may have a moisture content that is too high. To partially correct this problem use a screen-type escape board to remove the honey.

Most beekeepers try to remove honey relatively rapidly since they do not wish to return to the apiary. This has led to the development of fume boards that use repellent chemicals such as Bee Go or benzaldehyde to drive the bees from the supers. Since fume boards work best when the temperature and sunlight cooperate, we have seen the advent of bee blowers that simply blow the bees off the frames. Blowers will work in almost any kind of weather, even cool rainy weather with high humidity! The honey is then collected and maybe even stored in the honey house under less than ideal conditions. The new water equilibrium of the honey could be high enough to push it over the allowed limit of 18.5%.

How can a beekeeper correct, or prevent, the problem of high moisture in the honey. The easiest answer is the use of a warming room. When the air is heated in a warming room the RH is lowered. Depending upon the outside RH and temperature the room may have to be heated 10 to 15 degrees above the rest of the honey house. With the use of dehumidifiers the process can be enhanced and the drying process shortened. The warming room has an additional benefit. For each 10 degrees of temperature increase the viscosity (stiffness) of the honey will be reduced by about three times. Some beekeepers are taking advantage of this method to remove honey prior to the bees putting on the capping of the cell. They complete the natural drying process in a warming, drying room, and bypass the problem of removing the cappings with knives or uncappers. The effective use of this system demands that the beekeeper has the use of a refractometer to check the moisture content of the honey during the warming and drying process.

The small beekeeper can take advantage of the warming and drying by stacking the supers over a frame that contains a small light bulb. The heat from the bulb is allowed to circulate up through the stack, and with a dehumidifier in the room the water content of the honey is reduced. The frame the supers are placed upon must allow for the free passage of air.

## **NATIONAL HONEY BOARD AND HONEY SALES**

Many of us have seen some of the very nice advertisements that the National Honey Board has placed in various national magazines. The question that many beekeepers may ask is how effective are the ads? One answer to that question was given to me earlier this year. A Michigan beekeeper-honey packer showed me some statistics of his honey sales from 1988 and 1989. He had compared the sales in stores where he had honey. The figures were for January and February of each year. If he compared the same stores in each year the honey sales were up 284 percent! And some beekeepers are asking for a refund of their money. They are probably getting the most for their advertising dollar.