



B-PLUS

BEEKEEPING REPORT FROM MICHIGAN STATE UNIVERSITY

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RESEARCH REPORT FROM THE MSU APIARY

I have decided to include a research report from time-to-time so as to bring you up to date on the progress? in our studies. I think that this is important since it is through your individual donations and support from the Michigan Beekeepers Association that we are able to continue most of this research. Program support for operating expenses from the Agriculture Experiment Station and the Cooperative Extension Service have been zero for more than four years.

The colonies of bees came through the mild (global warming?) winter in very good shape. The bees had been given two different winter treatments. About half were wrapped using the system of the Canadians, except that only two colonies were pushed together and inclosed in a fiberglass insulated wrap. The other half were given a Langstroth developed, wedge-bar opening under the inner cover. Basically, there were no differences between the two treatments that could be measured.

This year's winter loss was dramatically different from 1989-1990. Last year we lost almost two thirds of the colonies. This year we had only four colonies that did not make it through, and after I completed the inspection yesterday (4/18/90) we actually were back to over 100 percent. I had to divide six colonies or they would have swarmed by the first of May. An explanation of the better wintering could be that the package bees that we purchased last spring to replace the loss were nearly tracheal mite free. Yet we had colonies that survived last winter with mites that were still strong this spring as well.

I still have not figured out the tracheal mite. Maybe that is no different from the rest of you. A year ago one of the colonies that survived the winter was headed by a daughter queen from the Lonesome Hive. It had a tracheal mite level of about 80% at that time. It still has the same queen this year, and yet the tracheal mite levels have dropped from 33 to 45% in the two samples that we have examined this winter. At the inspection yesterday (4/18/91) I had to divide the colony since it had 5 hive bodies (3/4 depth supers) full of bees. They were starrng queen cells!

We have not treated the University colonies for tracheal mites. For the most part I have thought that universities and the U.S.D.A. should be the places that research on resistance to mites should be undertaken. It is hard to study resistance if you treat with chemicals.

In contrast to the statement that we don't treat our colonies for control of tracheal mites, we have been trying to understand the most effective means of using menthol to control the tracheal mites. We have been testing menthol with a cage of bees in a closed chamber. Air with menthol is then circulated through the vessel. For much of the fall and early winter we had trouble killing mites with menthol. We were testing the menthol at room temperatures. We then decided to put the chambers with the bees at a higher temperature (30° C. = 86° F.) At that temperature we were able to kill mites. With that data in hand we are now trying to develop a dosage curve, and then take the testing into a colony setting. The preliminary data looks like we need to treat bees when it is warm. Of course it is probably 30-35° within a hive during the summer, but maybe with cool nights and other problems we do not get the continuous warm temperatures needed. Beekeepers may have had additional trouble by trying to treat too late in the fall and thus the temperatures were certainly not high enough to effectively vaporize the menthol.

We will be moving colonies to the Trevor Nichols Research Center near Fennville, Michigan next week to be used in two pollination studies. The first experiment will be testing Bee-Scent^(R) for attracting bees to pollinate pears and apples. Bee-Scent is a mixture of some of the chemicals that are found in the Nasonov gland. This is the scent gland found on the tip of the abdomen. Foraging bees sometimes open up this gland to aid other bees to find sources of food and water. There have been some experiments that have indicated that this material may induce bees to come to these flowers. Some crops are not very attractive to bees and thus the inducement provided by the pheromone may aid pollination of these crops.

The second experiment will test for the loss? of wild (feral) colonies of bees. We have some indications that the wild bee colonies have been damaged by the presence of the tracheal mites. We also know that these wild colonies have been providing much of the pollination in fruit orchards. If these foragers are not present then the growers will need to rent more bees.

This study is being supported in part by the Michigan State Horticulture Society.

George Ayers was able to secure some scion wood from the Ontario basswood study site late this winter. It seems that the study site is about to be turned into a gravel pit. (It doesn't seem to me that a gravel pit is a good trade for trees and a honey plant study. Maybe we don't believe that ozone loss and CO₂ buildup are real.) He now has grafted the scion wood onto several rootstocks and he will plant these into a study site here at MSU. Sometime in the 21st century we may have some good results. Hopefully, you beekeepers can keep continuity in the beekeeping programs here at MSU that will allow such long-term research to have results. George also plans on putting in some more demonstration plots of good honey plants near the apiary. Whenever you are nearby you can stop and see what is happening at these plots. The MSU apiary had one of its best honey years in a long time in 1990. Was this because of the 1 acre of anise hyssop that we have planted nearby? This year may help us determine how much such plantings help.

TALES FROM THE LONESOME HIVE

How long can the magic last? I suspect that one of the reasons that I started writing about the LH is that it was such a nice colony. That was almost three years ago. Since then the colony has gone through two replacements of queens, so we are not really talking about unchanged conditions. Though maybe that speaks to the real influence of a queen on the genetics of a colony. If anything the colony has become better over the last two years! It may not be the perfect colony, but I would be willing to put it into competition with any colony anywhere.

Last night was the first chance to look at the hive since my trip to Taiwan. This was the first real inspection since all I did before I left was to see that it was still active, and that it had enough food by lifting the back of the hive. It was late (7:30) when I started the inspection after a mostly rainy day as it seems that other chores had to be attended first. The colony was wintered over in two deep hive bodies plus two shallows. The reason for so much equipment was that I just didn't need all of the honey that I had taken off last year. (Remember that I extracted 300 pounds...I have that much in jars so it is not an estimate.) It was probably well that I had left as much room as I had since the colony was full of bees and brood.

One of the problems that I have relative to just having the one hive is that of maintaining just one colony. This is not very different than a lot of beekeepers that just want one colony for their backyard. The problem comes when you have a strong colony early in the season and do not want to increase the number of colonies. It takes some creative beekeeping not to have the bees "out on a limb". There are quite a few techniques for keeping the bees busy and not preparing queen cells for swarming. The trouble with such swarm prevention methods as the Demaree system is that you have to do a fair amount of manipulation, and be replace some of the comb with foundation. (Drawing out the comb keeps the young bee population with a job to do so they are not so inclined to swarm.) I don't like to do that much comb removal and manipulation. So a reasonable alternative is to make the colony two-queen. If you remember I tried to do that last year and was not very successful. I am trying it again this year. I split the colony with a screen and an upper entrance and plan on the bees raising their own queen. Most true two-queen systems would introduce a mated queen at this time. However, I have two reasons not to do this. The first is that I want to keep the genetics of the hive. Secondly, I don't really need that much honey either.

A final comment about the LH. I did all of the switching of combs and bodies and did not get a single sting and I finished just before it was dark. Not bad!

EXTENDER PATTIES RECEIVE LABEL REGISTRATION

Through the persistent efforts of Jack Thomas of Mann Lake Supply in Minnesota the Terramycin[®] antibiotic extender patties have a label. This effort certainly deserves a great big **Thank You** from all of the beekeepers. Maybe the MBA should make him the Beekeeper of the Year.

To give you a little history. Antibiotic extender patties were first described by Bill Wilson in 1970. The idea was to "extend" the life of Terramycin as it had a relatively short life in liquids, such as syrup. Since 1970 there have been many studies regarding the efficacy of these patties. I even used them in a study on the rate of clean up of American foulbrood. The most important research was that by Martha Gilliam on the possible contamination of honey by the patties. The result was that she could not find Terramycin in the honey even if the patties were left on the colonies throughout the honey flow.

I pursued the idea registration of the extender patties some years ago with Dr. Shimanuki (Beltsville-U.S.D.A.) and he struck out with the bureaucracy. It seems that some thought it was registered and others said no. Jack Thomas was not going to be stopped. It was just a matter of getting to the right offices.

Part of the push on extender patties was that it seems there was evidence that those colonies that had these patties were not having as much trouble with tracheal mites. (see B-Plus, No. 20) It seems that beekeepers were using these even if it was not a labeled use. Now they are legal!

The extender patties can be made up anytime and kept in a cool place (refrigerator is best). We make the patties into about 4-inch circles between sheets of wax paper. The patties are put into the center of the brood nest -between the two brood chambers. We do this at the earliest inspection if possible. It is early in the season when the strong colonies searching for some food find the colonies that have died over the winter. Some of these colonies died because of the fact that they had disease. The formula we use to make the patties is as follows:

7 lbs. granulated sugar
3 lbs. Crisco (vegetable shortening) (one can)
6.4 oz. Pkg. of TM-25 Terramycin

Mix the Terramycin and sugar together and then add the Crisco. Use a scoop to put the mixture onto the wax paper. I usually end up using my hand to make the final mixing. This amount will make about 40 patties. You can reduce the amount if you only have a few colonies. For example, 18 oz. sugar, 8 oz. Crisco, and 1 oz. of Terramycin will make about 5-6 patties.

Watch the color of the patty. If the yellow color (TM-25) turns orange or reddish the patty probably has lost its effectiveness. You could also use TM-50D but you would have to use half the amount of Terramycin. TM-50 does not have the nice color change that will indicate a loss of effectiveness.

NATIONAL HONEY BOARD VOTE THIS SUMMER

The 5-year automatic re-assessment of the NHB comes up for a vote this year. To be fair to the assessment it should be remembered that the first two years of this program was mainly getting the program started. First, we had to elect the Board members from the districts and then they had to organize themselves. Staff was then hired and contracts made for the various promotions. Probably the NHB has had about two years to two and a half years of actual program. I feel that the advertising programs have been very imaginative and successful. The surplus honey is truly gone and prices have been going up. It may take a little while longer before the programs begin to really have an effect on honey consumption.

A separate part of the vote this time is whether the refund provision should be continued. This part of the vote has probably generated the most discussion. (A refund on the dollars withheld can be requested. The only restriction is that the percentage requested by importers of honey can not exceed the percentage requested by beekeepers.) Some want to retain the "freedom" to ask for a refund. Others point out that the amount of money lost to the program, because of refunds, has been increasing each year. Your vote is important. Eligibility to vote will be determined on your past payments to the Honey Promotion, Research and Consumer Information Order.