B-PLUS
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THE WAR AGAINST MITES CONTINUES

At the recent meeting of the American Honey Producers Association there were a couple of talks that gave some hope for the future in the control of varroa mites.

The first was a talk given by Dr. Roger Morse of Cornell University. He discussed the finding of at least one hive in Florida that seems to be resistant to varroa mites because of a well developed grooming behavior. This colony appeared in an apiary that had lost all the other colonies within the apiary - some 33 or 34 hives. All the others had died because of varroa mites. The one had survived. Why? Well, it seems that the mites end up on the bottom with dents in their exoskeleton from bites by the worker bees. This is similar to the behavior of the workers of *Apis cerana*, the hive bee of southeast Asia, that is resistant to the mites. Cerana bees groom each other by biting the mites and removing them from the other workers.

Queens have been raised from this colony in Florida, and the progeny in the new colonies are being tested for resistance via the grooming behavior. If the trait can be transmitted, a major hurdle has be crossed. Grooming behavior alone will not confer all of the resistance that *A. cerana* has because in these Asian bees the varroa mites feed mostly on drones. Dr. John Harbo has been making some progress in selecting strains of bees that have a shorter post capping time. If we can incorporate both grooming behavior and a reduced pupal period we will have basically conquered this mite.

Dr. Wm. Wilson presented results on using formic acid to control both mites. The control is very effective, and the cost is much less than with other chemicals. The more important fact is that we will have another means of control. Mites usually become resistant to chemicals very rapidly, so having some alternatives is important. The data on formic acid have been submitted to the IR-4 program to begin the pesticide registration process. Hopefully in a little while this method will be available. Formic acid is **very caustic to use, to beekeepers and equipment, and it will kill bees if applied improperly.**

RESEARCH REVISITED

(A new look at some old writing)

Over the years many research articles have been written on bees and beekeeping. Some of them were regarded as very important when they were written, and some were overlooked because they did not seem important at the time. Others were published in journals that beekeepers would not normally read. For all of these reasons I decided to start a feature that would highlight some of the old, previously published articles, that I thought would give some insight into current problems.

With Michigan's current high winter loss of bees due to the effects of tracheal and varroa mites, I want to cover some of the old research on package bees as we are currently buying more package bees.

The first publication is "Observations on the Performance of Package Bee Colonies in Michigan", by R. H. Kelty; (Special Bull. 344, 1948, Mich. Agr. Expt. Sta.). Russ Kelty did this study during the years 1938-1940 when the most important honey crop was the clovers, particularly white clover. He used 2-, 3-, 4-, 5-, and 6-pound packages established as early as April 10th and as late as June 17th. In all such studies it is hard to make perfect comparisons because you can't put all of the colonies in the same apiary. All of the queens in the may not have been equal, etc. However, the point that is most clear from the circular is that early installation is better than later, and size was not critical if they were established early. The table below, from the 1939 data, should help show that relationship. The (R) after the size indicates that the queen was caged, a (L) that the queen was loose in the package, and (NL) means that a new queen was tossed into the package just before shipping. All caged queens were covered with warm syrup and released at hiving time.

Size	Date	Lbs. Honey/Col.
2 lb. R	4/17	100.0
3 lb. R	4/17	100.8
3 lb. L	4/17	109.0
3 lb. NL	4/17	85.1
4 lb. R	4/17	115.5
5 lb. R	4/17	118.8
3 lb. R	5/20	51.6
3 lb. L	5/25	62.8
5 lb. R	6/1	38.3

If the major honey flow in your area were to start later than the June 20-25 range given for the apiaries in this study, then you could start the packages later. We have always felt that if you were starting the packages on foundation then the 3 lb. package was better than a 2 lb. In the study all the packages were established on drawn comb so that effect would not be seen.

The second article was by C. L. Farrar in the Journal of Economic Entomology in 1947 entitled, " Nosema Losses in Package Bees as Related to Queen Supersedure and Honey Yields." In this paper, Dr. Farrar clearly shows the effect of nosema infection on the premature queen supersedure in package bees. Package colonies have enough difficulties without the problem of a nosema infected queen that dies. While the bees can raise a new queen, she will not begin laying for about 3 weeks, and this absolutely destroys any hope that the package colony will be productive, or maybe even survive until the next year. Feeding the antibiotic fumagillin (Fumidil B(R)) certainly helps control the disease and reduces the loss from premature supersedure. The recommendation to use Fumidil B(R) on colonies has always been made, but it is especially strong for the use on package bees. The primary reason is to reduce premature supersedure, but it will also help the colony produce more honey by providing longer living bees.

TALES FROM THE LONESOME HIVE

Not much to report during this off season. This is the time of anticipation and plans for the coming year. I have some major changes in production planned for 1992 for the LH. The last two years have been bumper years and I have not been keeping up with my distribution of honey through sales or gifts. This year I have plans to switch to production of comb honey in the cassette Half-Comb. These marvelously bee-packaged boxes are the invention of John Hogg of Galesburg, Michigan. I don't know of another honey package that is so eye appealing, and make such great gifts. These cassettes make the selling of beekeeping and honey so much easier. The production of comb honey has always been best by using various manipulations involving more than one colony. I don't want to do that. The challenge should be interesting.

Miticur® STRIPS PACKAGE SIZE

Nor-Am Chemical Company apparently did not anticipate Michigan's Section 18 emergency registration, and only have 100 colony (300 strip) packages for sale. Some larger beekeepers and some dealers are breaking up these packages into smaller units. Other beekeepers are combining their needs and splitting the order. However you purchase the strips, make sure you receive a copy of the label.