B-PLUS
BEEKEEPING REPORT FROM MICHIGAN STATE UNIVERSITY
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No. 23 Fall-Winter, 1991 Roger Hoopingarner, Editor

Amitraz (Miticur®) Strips Given Section 18 (Emergency) Registration

After what seems like a long wait, the Environmental Protection Agency (EPA) granted Michigan an emergency registration for the treatment of tracheal mites with amitraz. The period of this registration is from 10-3-91 until 5-30-92. The registration is for Michigan only. The label does **NOT** require a pesticide applicator's license, so any beekeeper should be able to purchase the strips and apply them to their colonies. By the time you read this B-Plus the Miticur(R) strips should be available at bee supply dealers, at a cost of $2.50/3-strip pack.

The treatment statement on the label is for three strips to be put into the brood chamber of a colony for a period of 6 weeks. As I indicated in my earlier letter, the exemption registration and delivery of the strips has come very late for treatment this year (1991). However, Nor-Am Chemical Company has indicated that the strips could be put into the colony yet this fall and left until next spring. I do not think there is much data on whether the strips would, or would not, control the mites during this period. For the most part, the bees pick up the chemical as they move across the strip when they are active. Amitraz has a relatively low vapor pressure and does not work as a gas. The great difference in size and weight of the mite as compared to a bee is one of the reasons the chemical is able to kill the mites and not harm the bees. The broodless period during the late fall and early winter is a good time to control varroa mites since they are not escaping the chemical by being in the brood cells. It could also be a good time to knock down the population of tracheal mites, as well, since they would not be able to move to new young bees.

A basic restriction on the use of the amitraz strips is that they are only to be applied when there are no honey supers on the colony. There is one additional restriction in the case of this emergency registration; the exemption expires on May 30, 1992. It is possible that a U. S. general use registration will be in place at the end of May. In most cases beekeepers would be removing the strips at that time since they would be putting on the honey supers. There is a small tolerance (0.2 ppm) allowed in honey, though if the strips are used properly there should be zero found in the extracted honey. There is also a tolerance of 0.8 ppm of amitraz in beeswax.

The cost of the Miticur® strips is a bit higher than most beekeepers would like. The good thing about amitraz is that it controls both the tracheal mite and the varroa mite, thus the total cost to control mites will be less.

FALL DIE-OFF (ABSCONDING?) OF BEES

In what could be an important new twist with the mites is that many colonies of bees have come up missing their bees this past September and October. Some beekeepers have lost whole apiaries (40 out of 40 colonies) to this phenomenon. Most of the colonies had all of the honey still in the supers (for somewhat of a blessing), and some still had brood left when the bees absconded. It has been a little difficult to do a post mortem on these colonies since there were no bees left. In some cases there were bees in other colonies in the apiary and these bees had both mites. In other cases we found dead varroa on the bottom boards when the beekeeper did not realize that he had these mites. So the common thread within these apiaries seems to be the presence of both mites at the same time. The absconding behavior may have been triggered by the varroa and the tracheal mites the actual cause of the bees leaving the hive. In the past couple of winters, tracheal mites seem to have been the major cause for the fact that there were no bees left in the hive. The shifting of this behavior to an earlier (dearth?) time could be the result of the varroa mites. With the two mites active at the same time, we may be experiencing a new problem. Beekeepers in Europe basically do not have tracheal mites, so they only have to be concerned with the varroa problem. The tracheal mites are present in Europe, but in such low numbers as to not be important. We may have to be especially careful to fully control the varroa mites as long as we have high populations of the tracheal mite present in the colonies.

I CAN'T HAVE VARROA ALREADY? !!

In a related story to the problem given above, one beekeeper didn't think that the varroa mites would be in his apiary so soon. He had good reason to think that his apiary would escape for a long time. He had not purchased either queens or package bees in over 5 years. The apiary is in the middle of about 50 acres of his own land. Bingo, the bees had lots of mites. This example makes the research findings of Walter Boylan-Pett look very prophetic, and that is that honey bees can drift a long distance. Maybe there are certain conditions that cause bees to drift more - such as moving for pollination. It could also be the case that a bee that is parasitized by a varroa mite will drift more. Maybe it is that the colony is dying and thus the bees are trying to find a better, more vigorous colony. In any event, long range drifting seems to be a factor in the movement of mites from one apiary to another.

There may some things that you could do to lessen the drifting problem. It might help if your hives were painted different colors, or were in non-standard patterns. The real solution is to keep testing, or examining, your colonies for mites. Recognize the problem early before the colony starts to decline. There are at least two ways to monitor your bees for the presence of varroa mites. First, keep looking at drone pupae for the mites. The easiest way is to always look at the drone pupae that may be exposed when you separate the two brood chambers. Many colonies will put extra cells in this space. If there are not any pupae exposed then you will have to remove some from their cells. One way to do this is to use a capping scratcher. Slide this into the top of a group of drone cells and pull the pupae out of the cells. The female varroa mites are dark brown against the white of the pupa. You can also use a pesticide, such as an Apistan(R) or Miticur(R) strip, to survey the mite population. To know if you have any mites you need to have
a sticky board on the bottom, or some white-paper monitoring boards. The dead mites will be found on the boards.

You can make your own sticky, or white-paper monitoring boards. Cut a piece of thin plywood paneling, or Masonite(R), slightly smaller than the inside measurement of the hive (approx. 14½ x 19 in.). Put a ¼ in. rim around 3 sides of the board, leaving the front open. Cover the board with 8-mesh hardware cloth by stapling it to the rim. The sticky boards are made by spraying Tangle-Trap(R) onto some thin board or sheet-metal. The tangle-trap aerosol may be purchased from an orchard supply, or from The Tanglefoot Co., Grand Rapids, MI 49504. The sticky boards are then inserted under the hardware cloth to catch the fallen mites. There will be lots of other debris on the boards, but the mites are dark brown ovals about 1/16 in. across and slightly less from front to back. If you have any doubt use a 10X hand lens to look at the board. White paper may be used to substitute for the sticky boards, but they are just a little harder to examine.

MENTHOL REGISTRATION MAY END JANUARY, 1992

Currently the EPA plans to cancel all registrations of menthol on January 2, 1992. The American Honey Producers, and other parties that have menthol registrations, can petition for a continuation of the use. However, this petition costs money and many of the manufacturers do not think they can recover their money. If menthol's use for the control of tracheal mites is rescinded, then the U.S. general label for amitraz will either have to be approved, or some other material take its place.

Menthol has not been very effective in controlling mites in Michigan. Basically the reason is that we often have too cool a temperature during the treatment periods. Our research shows that the temperature must be about 85^{o} F. before the mites are killed. This temperature must be maintained for some time as well. Thus if it cools off during the night to low temperatures the colony may not be able to maintain the 85^{o} near the packet of menthol crystals. In fact, the bees often move their cluster away from the menthol which would only increase the problem of temperature control.

A NEEDED CONTRIBUTION AND A TAX ADVANTAGE!

Again I am asking you for a possible contribution to the beekeeping program here at Michigan State University. Usually I have sent you a special letter asking for your help. However, by sending this request via this newsletter I am saving money that can best be used for more research.

As I have said before, the beekeeping program has come on hard times via state funding. We are sometimes able to secure special grants to do specific studies, but the basic core support has not been available for several years. Most of the work we have been able to do lately has been made possible by beekeeper contributions. For that support we are most appreciative!

No contribution is too small, and many donations do add up to keeping us going throughout the year. The State of Michigan does make the giving a little less painful by granting a break on your Michigan taxes. An individual can give up to $200 and take $100 (50%) directly off of the tax - not just a deduction, but a reduction of the tax. In addition you can use the full amount, if you

itemize your deductions, on the Federal Tax. Thus the gift of $200 would cost you about $40. Married persons, that file a joint tax form, can deduct up to $200 (50% of $400) from their Michigan Tax.

Make out your cheque to Michigan State University, and indicate on the cheque that it is for **Beekeeping Research**. Send the cheque to me, Dr. Roger Hoopingarner, Department of Entomology, MSU, East Lansing, MI 48824-1115.