

APIS



Apicultural Information and Issues

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Varroa Certification Changes in Florida

THE APIARY SECTION of the Division of Plant Industry wrote to all registered beekeepers in Florida on January 6, 1998, the following:

"As a result of recent discoveries of Varroa mites that are resistant to Apistan® treatments, we will no longer require proof of treatment for certification. Current requirements are:

1. An average of two mites or less on a posttreatment survey of 5 percent of the colonies in a yard (with a minimum of 10 hives per yard where applicable) using the standard ether roll of approximately 200 bees.

Past research has indicated a doubling of Varroa mites every six weeks under Florida conditions, therefore listed below are levels that will provide equitable certification in cases where we are unable to survey immediately after treatment.

1. A tolerance of four mites in a six weeks posttreatment.
2. A tolerance of eight mites in a 12 weeks posttreatment.

Apistan® is still effective in most Florida operations and is still the recommended treatment. However, a posttreatment survey should be done to confirm its efficacy.

Efforts are underway to obtain an alternative treatment. The Florida Department of Agriculture and Consumer Services – Division of Plant Industry is requesting \$100,000 in our budget for mite research. This would be given as grants to qualified researchers. Your support of this effort with your local legislative representative would be appreciated.

If you have any questions, call the Gainesville office at (352) 372-3505 ext. 114; Tom Dowda, northern regional supervisor, at (904) 454-3786; or Richard Dunaway, southern regional supervisor, at (941) 291-5218."

By issuing this letter, Florida honey bee regulators have effectively shifted the decision about what to control mites with to the beekeeper. Before, proof of Apistan® treatment was sufficient to be certified for movement in Florida. Given that some beekeepers are not seeing their mites being adequately controlled,

Continued next page

Varroa continued

inspectors have moved to the next logical step, determining the level of treatment effectiveness.

Again, it must be emphasized that the one registered legal product, Apistan®, is still effective in the vast majority of Florida apiaries. However, its use must be more carefully monitored to confirm its ability to kill mites as discussed in the August 1997 *APIS*¹. This mirrors experience in France where resistance of Varroa to Apistan® was been confirmed in the south, but has yet to be seen in most of the rest of the country, March 1997 *APIS*². Based on the Italian experience, the Beltsville Bee Laboratory is developing a test to help beekeepers determine Apistan®'s effectiveness level. Details will be made available as soon as possible on this technology. In the meantime, beekeepers should act to conserve the product's effectiveness as long as possible as outlined in the February 1995 *APIS*³.

Given the lack of alternative legal treatment and incipient signs of mite tolerance or resistance to fluvalinate-based Apistan®, it is now clear that more materials need to be labeled for this use. The initiative by the Division of Plant Industry to obtain funding for mite research urgently needs beekeeper support. In addition to this, there continue to be efforts both at the Beltsville and Weslaco USDA research laboratories to identify alternative treatments. ■

Mosquito Control Meeting

A MEETING concerning Florida mosquito control efforts and how they affect beekeepers will be held at the Division of Plant Industry, 1911 SW 34 St., Gainesville, FL, on February 24, 1998, beginning at 9 A.M. It was scheduled as an initiative from the Honey Bee Technical Council, which advises Agricultural Commissioner Bob Crawford on matters of importance to beekeepers. For more details, interested persons are asked to contact Ms. Cathy DeWeese, Apiary Section, Division of Plant Industry, ph (352) 372-3505 ext. 114. I have received little response to my request about problems with mosquito control that was published in the December 1997 *APIS*⁷. If you have concerns and cannot be at the meeting, please communicate them to Ms. DeWeese or me.

As it stands now, this will also be a Technical Council meeting, which will address the current state of Varroa mite control in Florida. ■

Warm Winter Woes: Supplementary Feeding of Bees

THIS IS SHAPING UP to be a warmer-than-normal winter, although as I write this, a huge storm is approaching from the west. One sign is early blooming of plants like citrus in some parts of the state. Another is premature flight activity and earlier preparations for colony buildup. This can be disastrous for some colonies. Should they begin to rear brood too early, and food sources are not available, colonies can quickly starve to death. It is imperative that under these conditions beekeepers carefully monitor colony food consumption and be ready to supplement feed if necessary. Although carbohydrate (sugar syrup) is essential for survival, protein might be as well.

MANY BEEKEEPERS continue to ignore the protein side of the coin when feeding bees. The technology is not as well worked out as it is for sugar. Results can vary and may not be immediately apparent. There is a lot of evidence from other livestock production that skimping in providing adequate nutrition is a major cause for a host of problems from low weight to weak immune systems. An analysis of this, along with recipes for pollen substitutes/supplements, was published in the February 1992 *APIS*⁴. That article also referred to the July 1990 *APIS*

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Many beekeepers continue to ignore the protein side of the coin when feeding bees.

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report on Mr. Andy Nachbaur's written observations concerning SAD and BAD bees in California⁵. Much of Mr. Nachbaur's concerns come from poor nutrition provided by inferior protein sources. I also published other reflections on protein management as practiced in Australia in the July 1990 *APIS*⁶. That article concluded with a question asked by Dr. Larry Connor in *The Speedy Bee* (June 1990): "Is intensive protein feeding part of proper management against mites?" That this is good strategy comes from current work at Simon Fraser University in British Columbia, Canada. Preliminary studies there show that colonies given adequate pollen resources were less affected by mites than those that were pollen deprived. ■

Rearing Quality Queens Short Course

IN RECENT YEARS, the Ontario Beekeepers' Association has provided significant funding to develop technologies in breeding tracheal-mite-resistant honey bees. In order to facilitate technical transfer of this knowledge, the Association is sponsoring a special queen rearing workshop to be held in Guelph, Ontario, March 25 and 26, 1998. Speakers from both Canada and the United States are on the agenda. For more information, contact Pat Westlake, Bayfield Ontario, N0M 1G0, tel. 519/565-2622, fax 519/565-5452. ■

¹ <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apaug97.htm#1>
² <http://www.ifas.ufl.edu/~mts/apishtm/apmar97.htm#3>
³ <http://www.ifas.ufl.edu/~mts/apishtm/apis95/apfeb95.htm#FL>
⁴ <http://www.ifas.ufl.edu/~mts/apishtm /apis92/apfeb92.htm#2>
⁵ <http://www.ifas.ufl.edu/~mts/apishtm/apis90/apjul90.htm#3>
⁶ <http://www.ifas.ufl.edu/~mts/apishtm/apis90/apjul90.htm#4>
⁷ <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apdec97.htm#2>
⁸ <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apsep97.htm#2>
⁹ <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apoct9.htm#4>
¹⁰ <http://www.ifas.ufl.edu/~mts/apishtm/apis92/apapr92.htm#4>
¹¹ <http://www.ifas.ufl.edu/~mts/apishtm/apis96/apaug96.htm#1>

Queen ‘Problems’ for Producers and Consumers?

THERE SEEMED to be a lot more problems with queens in apiaries in 1997, particularly on the east coast. These were reported to Kim Flottum, editor of *Bee Culture*. His investigation into the matter resulted in a special symposium on the subject at this year’s American Beekeeping Federation convention in Colorado Springs, CO. Dr. Eric Mussen, extension beekeeping specialist in apiculture at the University of California, Davis, attempted to define the “problem.” He asked three questions:

1. Are the problems new?
2. Are the problems worse than usual?
3. Is there a verifiable special problem?

The answers to these, according to Dr. Mussen, appears to be no. There are historical records of high queen losses; a 50 percent turnover in California commercial bees is common. Dr. Mussen also quoted as high as 55 percent loss in two months, reported by Washington State bee inspector Jim Bach. After gathering some facts on the reported losses, Dr. Mussen said he found little evidence of new problems. Most of the complaints centered around traditional causes associated with requeening and retaining replacement queens, including handling during processing and shipping, and subsequent introducing into recipient colonies.

In a brainstorming session, participants at the symposium were able to develop a long list of possible problems that could have resulted in the reported observations. Generally they related to climate, malnutrition, unhealthy environments, and diseases and pests. Specific ones concerning queen acceptance and retention were those that caused stress during production, including queen handling, lack of drones and banking. The latter issue was discussed in some detail in the September 1997 *APIS*⁸. Producers pointed out, however, that the condition of recipient colonies was also extremely important. If old queens were not removed adequately (two in a colony may be more common than supposed), introduction techniques were substandard, and/or recipient colonies were under a lot of stress (disease, mites), the chances of them retaining introduced queens was minimal.

It is impossible to give justice to the full symposium here. It took half a day and a subsequent evening, and included much give-and-take between producers and users. In that respect, however, it provided a

different and unique format to the convention. Several persons remarked that this was one of the best and most interesting sessions at this or any meeting in recent years. Its success may stimulate other organizers to rethink their programming philosophy.

Although there may have been repetition of well-known caveats concerning queen production and subsequent introduction, there were “nuggets” of information that came forth during the sessions. Dr. Marla Spivak quoted the late Dr. C.L. Farrar: “Poorly reared queens of productive stock will be inferior to well reared queens of less productive stock.” She also said that nosema control was most important in mating nuclei. One reason is that sperm will migrate faster into the queen’s spermatheca the less stress there is on a nucleus. This means that there should be no nosema, tracheal or *Varroa* mites, a tall order in these times. Finally, Dr. Spivak concluded that drone production must be emphasized more, especially now that *Varroa* mites prefer males and the lack of feral colonies appears to be narrowing the potential genetic base as discussed in the October 1997 *APIS*⁹. She closed with an exhortation to producers to always rear more drones that you think necessary.

A COMMENT FROM Dr. Roger Hoopingamer, now retired from Michigan State University, got some attention. Many of the symptoms of the problems being described, he said, were reminiscent of those found by investigators looking at the effects of sublethal doses of fluvalinate on colonies. Long-term exposure to fluvalinate treatment has been associated with a reduction in honey yield as discussed in the April 1992 *APIS*¹⁰.

The fact that this pesticide was also bioaccumulating in the wax, Dr. Hoopingamer said, means that there continues to be more and more of the material in the bee’s environment. Other effects of this phenomenon were described in the August 1996 *APIS*¹¹.

Dr. Jeff Pettis at the USDA Beltsville Bee Laboratory said that a problem with current queen production is that producers are constantly asked to get the product out earlier. This can result in shortcuts and stress. Acceleration of expectations may also bleed over into the bee yard, accord-

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ing to Danny Weaver of Navasota, TX, who asked users not to “over manage” colonies by pushing them too hard. This was supplemented by Pat Heitkam of Orland, CA, who said more observations, more management and more movement could equal more perceived problems. More easygoing beekeepers, he concluded, let the bees solve some of the problems themselves. The fact that there may be a lot more colony movement going on than in the past came from David Hackenberg, the Federation’s incoming president, who calculated his bees were rented 17 to 21 times for pollination last season!

Another thread of conversation had to do with innovations in queen production. There is little information about what effects there might be from using plastic cups and cages (different sizes) or battery boxes. In particular, queen cages were described as smaller and, therefore, not able to hold the quantity of candy more traditional ones could. Finally, there was the great unknown called the U.S. Postal Service, which also is continually changing its guidelines and procedures, sometimes without informing either producer or customer. A presentation by USPS officials at the convention indicated that as much as a 200 percent increase in charges might be applied to shipments in the coming season.

Most participants agreed there is a lack of basic information on a great many issues associated with modern queen rearing, shipping and introduction technique. Thus, as Dr. Mussen concluded, although the problems do not appear new, many methods, employed by queen producer and user alike, are. Meanwhile, scientific research in many of these areas languishes as funds are directed to more pressing issues such as mite control. ■

More on Transgenic Plants

UNFORTUNATELY, I misrepresented the remarks of Mr. Chris Alen in the January 1998 *APIS*¹². I apparently read too much into his letter when I suggested the focus of it was transgenic plants. Here is what he sent by electronic mail to help clear up the situation: "My comments were not reflective of a genetic cause to the problem of population decline or queen failure, rather I referred to the 20 million plus bees working limited resources, having minimum pollen and nectar resources and because of this stressful environment, problems are presented that wouldn't otherwise in a natural foraging environment. More of an occupational hazard."

Mr. Kerry Clarke, apiculture specialist, Ministry of Agriculture, Fisheries and Food, British Columbia, Canada also sent me some observations:

1. Bee colonies in hybrid canola pollination are used at rather high density (two or more per acre), with the objective of maximizing pollination rather than optimizing bee colony performance. A pollination fee is supposed to make the practice attractive to a beekeeper.
2. Only in the production of hybrid seed (for planting) is insect pollination required. For most canola seed production (hybrid, transgenic or neither, for oil) bees are of debatable value, although the large fields are a good source of nectar and pollen for the short period they are in bloom.
3. Transgenic canola varieties are generally modified to include herbicide resistance rather than insecticidal properties. [Editor's note: Releases over the last 10 years indicate only a slightly higher incidence of herbicide-resistant plants released¹³.

In Montreal at the Canadian Honey Council and Canadian Association of Professional Apiculturists meeting, I learned that much of the transgenic issue may be played out on the larger world food marketing stage. Apparently some European food buyers have decided they will not purchase any genetically altered material. This will send a bigger signal to producers than one associated with any risk to honey bees.

The field of genetically modified plants is moving fast, however, and the results of

this technology cannot and should not be ignored either by growers or beekeepers. In the latest edition of the American Entomological Society's newsletter (February 1998) almost half the positions advertised are for persons with molecular biology experience, and one is specifically searching for a transgenic insect scientist.

Most-frequent transgenic crops released in the field over the last decade include soybean (329), cotton (237), and rape or canola (81)¹⁴. ■

¹² <http://www.ifas.ufl.edu/~mts/apishtm/apis98/apjan98.htm#3>

¹³ <http://www.aphis.usda.gov/bbep/bp/images/nov975.gif>

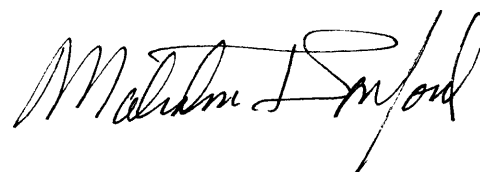
¹⁴ <http://www.aphis.usda.gov/bbep/bp/images/nov975.gif>

Southeastern Forest Management Practice: Effects on Beekeeping

A SITUATION is brewing in southeastern forest management that may affect many beekeepers. That's the message Mr. Bob Rowell, president of the Southeast Georgia Beekeepers Association, brought to this year's American Beekeeping Federation in Colorado Springs, CO. In the next few years, he said, on some four million acres of forestland, preemergent herbicide will be used to completely eliminate understory vegetation as pine trees are planted after clear-cutting. Although this will reduce competition for nutrients that growing trees depend on, it will also be responsible for ridding forests of valuable understory plants that are major nectar and wildlife food producers, according to Mr. Rowell.

Beyond direct impacts on beekeepers, this will also put great pressure on bear and other wildlife populations. This change in forestry practice will also affect other potential forest users. Interested persons are asked to contact Mr. Rowell, Buffalo Creek Honey Farms, Nahunta, GA, ph. 912-462-5068. ■

Sincerely,



APIS, a monthly newsletter, is celebrating its 16th year of service to beekeepers. For subscription or other information, please write, phone, fax or e-mail.

Malcolm T. Sanford
P.O. Box 110620, Building 970
University of Florida
Gainesville, FL 32611-0620

Phone: (352) 392-1801, Ext. 143
Fax: (352) 392-0190
Internet: MTS@GNV.IFAS.UFL.EDU

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