

# APIS



## Apicultural Information and Issues

From IFAS/University of Florida  
Department of Entomology and Nematology

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## Taking Stock In 1997

AGAIN IT IS TIME to reflect on the passage of another year as expressed in the pages of *APIS*. This concludes Volume 15 and is the 179th edition to roll off the press. The *APIS* web site now includes all issues back to February 1984. Not only are many interlinked with others, but a topical index has now been added with 19 categories to browse. This will make articles more accessible and searching for relevant information easier. Relevant articles are listed chronologically from latest to earliest, providing a timeline for each topic. It is still possible to scan all indices, including three experimental ones that show several years side by side. A summary of usage statistics is also available.<sup>1</sup>

Other innovations continue this publication's metamorphosis into a fully integrated electronic document or E-zine.<sup>2</sup> Full Uniform Resource Locators (URL) are now included so that referenced links both within *APIS* and outside the newsletter can be accessed directly by most mail programs. They are included as footnotes in the paper edition. For 1997 issues, the full text along with graphics and formatting of the paper document as printed can be accessed using Adobe's Acrobat® reader. The electronic list (APIS-L) administered through listserv@lists.ufl.edu continues to expand and presently has over 600 subscribers.

**T**HIS YEAR BEGAN with a Christmas present to honey bees and beekeepers. Dr. Edward Knipping of the Agricultural Research Service (ARS) pledged to take \$100,000 from that agency's contingency fund and put it to use in honey bee mite research.<sup>3</sup> This was a most-needed shot in the arm, and something beekeepers may have lost sight of in the face of the tremendous challenges they are facing. Besides mites, other examples of inexorable change contrasted with, yet similar to those in Australia, were discussed in January.<sup>4</sup> The February issue reported on several concerns, including off-spec corn syrup, updating honey importation laws, and soliciting comments on formic acid research.<sup>5,6,7</sup> *Continued next page*

<sup>1</sup> <http://www.ifas.ufl.edu/~mts/apishtm/stats/stats97.htm>

<sup>2</sup> <http://www.ifas.ufl.edu/~mts/apishm/papers/emweb.htm>

<sup>3</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apfeb97.htm#1>

<sup>4</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apjan97.htm#2>

<sup>5</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apfeb97.htm#3>

<sup>6</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apfeb97.htm#2>

<sup>7</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apfeb97.htm#6>

## Taking Stock continued

I left for sabbatical in France in February, yet was still able to publish a full quota of *APIS* issues from “the Hexagon.” I was also able to report on my activities through a series of letters sent to the *APIS-L* list.<sup>8</sup> These were edited and reprinted in *The Speedy Bee*. My observations included professional beekeeping in southern France<sup>9</sup>, Varroa resistance to fluvalinate<sup>10</sup>, apiculture and the European Union<sup>11</sup>, organic honey concerns<sup>12</sup>, research on human consumption of pollen<sup>13</sup>, royal phero-

none trials in France<sup>14</sup>, acacia honey<sup>15</sup>, lavender honey<sup>16</sup>, urban beekeeping venues in Paris<sup>17</sup>, and use of transgenic plants<sup>18</sup>.

Other issues discussed in 1997 include Mediterranean fruit fly control methods<sup>19</sup>, Varroa tolerance in Mexican bees<sup>20</sup>, the potential of attractants in honey bee pollination<sup>21</sup>, brood pheromone<sup>22</sup>, pollen flow considerations<sup>23</sup>, queen storage<sup>24</sup>, consequences of long-term Terramycin® use<sup>25</sup>, Africanized honey bees in the west<sup>26</sup>, and propolis<sup>27</sup>.

Varroa got most of the press this year. Reports of beekeepers failing to followup on control methods<sup>28</sup> were followed by a meeting to try to determine the status of Apistan® as a control measure, given resistance found in other parts of the world<sup>29</sup>. Other methods of controlling Varroa were also addressed, including smoking bees<sup>30</sup> and applying essential oils (oils of essence)<sup>31</sup>. Finally, the effect of Varroa on the managed bee population’s genetic base was addressed in October<sup>32</sup>. ■

# 4-H Essay Contest

IT’S THAT TIME of year again. All 4-H’ers should be sharpening their pencils for next year’s beekeeping essay contest sponsored by the American Beekeeping Federation. Cash prizes go to the top three national winners and a book on beekeeping to all winners at the state level. The last Florida winner at the national level was in 1995.<sup>33</sup>

The subject of the 1998 essay will be to report on the beekeeping activities in your community and/or state. Discuss as many aspects of the beekeeping and honey industry as you can identify in your area. Do not overlook the less obvious portions of the industry such as pollination of crops, honey processing, manufacturers of bee supplies, beekeeping research facilities, etc.

Sources: Good leads for your research include your county extension agent, your local or state beekeepers association, your state’s department of agriculture, the Crop Reporting Service, and the beekeeping professor at your state’s agricultural college.

The scope of the research is an essential judging criterion, accounting for 40 percent of your score. The number of sources consulted, the authority of the sources, and the variety of the sources are all evaluated.

Personal interviews should be documented. Sources not cited in the endnotes should be listed in a “Resources” or “Bibliography” list.

## RULES:

1. Contest is open to active 4-H Club members only. In Florida, essays must be forwarded by official 4-H agents at local Cooperative Extension Offices to this office by **February 13, 1998** for judging at the state level. All essays become property of the American Beekeeping Federation and none will be returned.
2. Requirements (failure to meet any one disqualifies the essay automatically):
  - A. Typewritten, double spaced, on one side of the paper following standard manuscript format.
  - B. Length: 750 to 1,000 words long.
  - C. Write on the designated subject only.
  - D. All factual statements must be referenced with bibliographical-style endnotes.
  - E. A brief biographical sketch of the essayist including date of birth, gender, complete mailing address, and telephone number, must accompany the essay. (The word limit does not include the references or the essayist’s biographical sketch.)
3. Essays will be judged on scope of research (40 percent), accuracy (30 percent), creativity (10 percent), conciseness (10 percent) and logical development of the topic (10 percent).

Fuller information on this contest can be found on the Texas A&M Entomology home page.<sup>34</sup> ■

## Mosquito Control Efforts

CHANGES ARE AFFECTING mosquito control efforts in Florida. New mosquitos have been introduced, pesticides registered, and uses implemented. Examples of these at the last meeting of the Florida Department of Agriculture and Consumer Services (FDACS) include increasing use of helicopters in adulticiding operations, and honey bees ingesting larvacides while watering.

As a result of the council’s deliberations, a meeting will be scheduled in the near future to air concerns of beekeepers, officials in mosquito control and regulators. In order to ensure all relevant topics are covered, I would like to know concerns Florida beekeepers have about mosquito control. Please write, fax or e-mail the information and I will ensure it becomes part of the meeting’s agenda. ■

# Nosema Disease Revisited

A RECENT SEMINAR conducted by Dr. Drion Boucias here at the University of Florida focused on *Nosema apis*. Although many beekeepers know about this microsporidian, the organism's effects are often not taken seriously. *Nosema apis* is a parasite of honey bees' digestive system.<sup>35</sup> It can attack the cells of the gut lining leading to many problems. Dr. Boucias said, however, that the organism was potentially more devastating because it is required to activate many viruses. This appears to be the same kind of phenomenon thought to be associated with tracheal mites<sup>36</sup>, and when coupled with Varroa parasitism, with what is being called bee parasitic mite syndrome<sup>37</sup>.

REPORTED in the very first issue of this newsletter (Vol. 1, No. 1, February 1983) that the reason nosema is not often recognized as a real problem appears to be rooted in two myths: 1) It can be discounted because it doesn't kill colonies outright; and 2) It is too expensive to apply the one material known to effectively control the organism, fumagillin (Fumidil-B®, Nosem-X® are possible brand names encountered).

Research has shown:

1. *Nosema* is worldwide in distribution. In a 1975 U.S. survey, it was present in 66 percent of apiaries in 43 states.

2. Severely infested workers aged physiologically, showed atrophy of the brood food glands and prematurely stopped feeding brood. They quickly turned to foraging and robbing.

3. Longevity of infected caged bees was reduced from ten to 40 percent. Infected queens also had reduced life

spans and were quickly superseded.

4. Fifteen percent of eggs found in severely affected colonies failed to produce mature bees in early summer compared to an average of one percent for healthy colonies.

5. Although colonies don't die outright,

*Continued next page*

## Florida Bee Happenings

A SNOWBIRD BEEKEEPING MEETING will be held at Archbold Biological Station Saturday, February 14. It is sponsored by the New York State Beekeepers Association, but any interested beekeeper is encouraged to attend. The phone number is 941/465-2571.

Two short courses will be offered at the Clay County Cooperative Extension Service Exhibition Building, four miles west of Green Cove Springs at 2463 State Rd. 16W:

a. Saturday, February 7, Dr. Keith Delaplane, University of Georgia extension apiculturist, will be featured discussing blueberry pollination and mite control. Other speakers round out a full days activity (8:45 am to 5 pm). The cost is \$10 per person, which includes lunch. Preregistration is **required** by February 4, 1998.

b. Saturday, February 28, speakers will provide basic information for beginners at the same venue. Again, preregistration is **required** by February 24, 1998, and the cost is \$10.

Mail checks for one or both courses (\$10 for each one) to 4-H Youth Foundation/BEESC, P.O. Box 278, Green Cove Springs, FL 32043-0278.

DADANT & SONS, INC. is closing its bee supply warehouse in Hahira, GA and will be consolidating that operation with the one in Umatilla, FL into a new facility in High Springs, FL. Orders will no longer be taken in Georgia. Customers are asked to send them either to Umatilla, FL or the home office in Hamilton, IL. The new warehouse is due to open early next year. It will be located .2 miles north of Hwy. 441 on NW 188 St., which is two miles east of I-75 (Exit 78). For more information, contact Jerry Latner in Florida at ph 352/669-2622 or fax 352/669-3703. ■

<sup>8</sup> <http://www.ifas.ufl.edu/~mts/apishtm/letters/aixind.htm>

<sup>9</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apmar97.htm#1>

<sup>10</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apmar97.htm#3>

<sup>11</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apapr97.htm#2>

<sup>12</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apmay97.htm#3>

<sup>13</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apmay97.htm#4>

<sup>14</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apjun97.htm#2>

<sup>15</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apjun97.htm#4>

<sup>16</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apjul97.htm#2>

<sup>17</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apjul97.htm#6>

<sup>18</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apjul97.htm#5>

<sup>19</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apmay97.htm#1>

<sup>20</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apmay97.htm#2>

<sup>21</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apjun97.htm#1>

<sup>22</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apaug97.htm#2>

<sup>23</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apaug97.htm#4>

<sup>24</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apsep97.htm#2>

<sup>25</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apsep97.htm#3>

<sup>26</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apsep97.htm#4>

<sup>27</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apnov97.htm#3>

<sup>28</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apaug97.htm#1>

<sup>29</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apoct97.htm#1>

<sup>30</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apaug97.htm#3>

<sup>31</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apnov97.htm#4>

<sup>32</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis97/apoct97.htm#4>

<sup>33</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis95/apmay95.htm#FL>

<sup>34</sup> <http://entowww.tamu.edu/extension/youth/bee/b98rules.html>

<sup>35</sup> <http://hammock.ifas.ufl.edu/txt/fairs/1289>

<sup>36</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis94/apnov94.htm#4>

<sup>37</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis94/apdec94.htm#3>

<sup>38</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis96/apmay96.htm#2>

<sup>39</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis95/apdec95.htm#T3>

<sup>40</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis95/apdec95.htm#T4>

<sup>41</sup> <http://www.ifas.ufl.edu/~mts/apishtm/apis94/apjul94.htm#4>

## Nosema continued

a number of studies have shown that as infection increased honey production decreased.

**N**OSEMA APIS is vertically transmitted. This means that queens pass the organism on to their offspring through their eggs. This can lead to serious problems in queen and package bee production. In addition, the organism forms long-lasting, potentially virulent spores. Fortunately, most never germinate, but a small proportion do. The more spores present, therefore, the more that germinate to cause problems. Unfortunately, fumagillin is not effective against nosema spores. Thus, almost continuous feeding is required to keep active infestations to a minimum. Nosema is also a stress disease. Most beekeeping management is hard on bees. This is especially true in queen and package bee production, where colonies are opened frequently, queens are repeatedly handled (marked, clipped, etc.) and worker bees unceremoniously transferred from hives to screened cages. Feeding fumagillin to both queens and workers by producers in the holding facility and after arrival by recipient beekeepers is recommended by many bee inspectors.

Although nosema is usually considered more virulent in the Midwest with its harsh winters, Florida research by Professor Frank Robinson, long retired from the University, showed nosema

was widespread in the Panhandle and other parts of Florida. In 1973, a test on colonies managed at the University of Florida showed that colonies fed two gallons of fumagillin-treated syrup had a 22 percent increase in citrus and 66 percent increase in gallberry and palmetto honey production over those not fed. The same colonies posted a 31 to 48 percent gain over untreated colonies

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Getting back to basics means eliminating nosema first, then dealing with other beekeeping problems.

- Glen Stanley

”

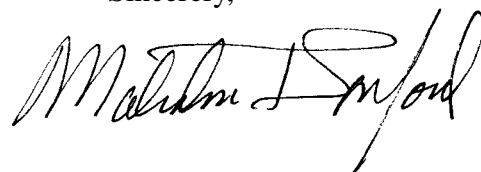
the following year without repeating the treatment. Research in the 1980s by Dr. Alan Bolten, who is now associated with the zoology faculty at this university, showed similar increases in production.

With the arrival of bee mites, long-standing beekeeping problems have often taken a back seat to these recent challenges. This appears to be true for American foulbrood.<sup>38</sup> And it is also the case for nosema, according to Dr. Andrew Matheson, former director of the

International Bee Research Association. He tried to analyze why beekeepers have eagerly taken to using vegetable oil patties for tracheal mites, but eschew feeding fumagillin for nosema (*BEE BIZ* Vol. 1, No. 1 pp. 6-7, August 1995).<sup>39</sup> This is true even though the latter technology has a much more robust history of verifiable research than the former.<sup>40</sup>

Getting back to basics, according to Glen Stanley, retired Iowa apiary inspector, means eliminating nosema first and then dealing with other problems encountered in beekeeping.<sup>41</sup> Fumagillin feeding is as directed on the product's label. It should be fed in syrup; dusting and/or incorporating the material into patties has not been effective. If the dosage is reduced, so is the product's effectiveness. The total cost of feeding may approach four pounds of honey per colony. However, if a 30 percent honey production increase results on a seventy pound average crop, the beekeeper can expect twenty-one more pounds to extract. As I said in 1983, given the incidence of nosema in Florida and nationwide and correlation of outbreaks with high stress (frequent inspections, long distance moves), can the beekeeper afford not to feed? ■

Sincerely,



*APIS*, a monthly newsletter, is celebrating its 15th year of service to beekeepers. For subscription or other information, please write, phone, fax or e-mail.

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