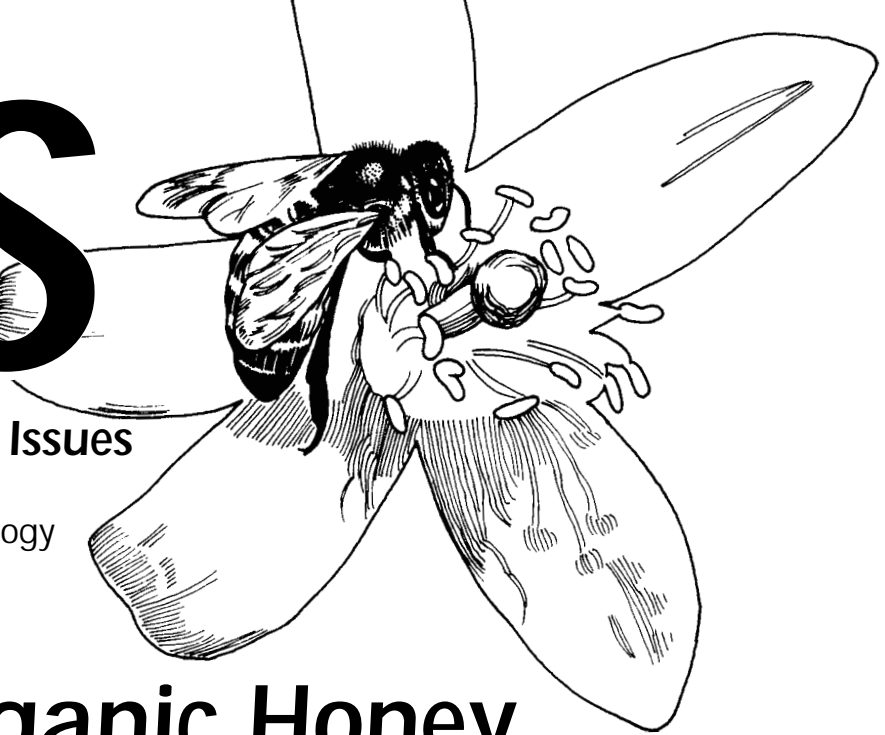


# APIS



## Apicultural Information and Issues

From IFAS/University of Florida  
Department of Entomology and Nematology

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## Organic Honey What are the Possibilities?

THE PROPOSED REGULATIONS governing the USDA's National Organic Program were published in the December 16, 1997, *Federal Register*. The document is 113 pages long. It can be purchased for \$8 from the Federal Register (202/690-4632), downloaded in Adobe Acrobat® format<sup>1</sup> and viewed on the National Organic Program World Wide Web home page<sup>2</sup>. The document is composed of the following:

Subpart A — Definitions

Subpart B — Organic Crop and Livestock Production and Handling Requirements

Organic Crop Production Requirements

Organic Livestock Production Requirements

Organic Handling Requirements

The Use of Active Synthetic Substances, Nonsynthetic Substances,

Nonagricultural (Nonorganic) Substances and Nonorganically

Produced Ingredients in Organic Farming and Handling Operations,

Including the National List of Allowed and Prohibited Substances

The National List of Allowed and Prohibited Substances

Crop Production Substances

Livestock Production Substances

Processed Products Substances

Subpart C — Labels, Labeling, and Market Information

Subpart D — Certification

Subpart E — Accreditation of Certifying Agents

Subpart F — Additional Regulatory Functions

State Programs

Fees

Compliance Review and Other Testing

Appeals

Equivalency of Imported Organic Products

The proposals are causing controversy as might be expected. The provisions appear to be such that it will be impossible to certify honey as "organic" under most circumstances. Comments on the Bee-L Internet discussion list have called the rule everything from unrealistic to downright manipulative, *Continued next page*

<sup>1</sup><http://http://www.ams.usda.gov/nop/rule/complete.pdf>

<sup>2</sup><http://www.ams.usda.gov/nop/rule/20513.htm>

## Organic Honey continued

simply a way to tax unsuspecting beekeepers through fees for services not needed. One wag said, "... the thing looks like a real tar baby. Lawyers will have a lot of fun with this one and I doubt anyone will eat any better on account of it."

Another point of view is that although the rules may be uncompromising, at least they will apply to all, foreign producers who import honey included. The result would be removal of many products now labeled as "organic" from the market place. In essence this would mean a leveling of the playing field. The issues involved are extremely complex and not easy to quickly summarize; additional information not published in the Federal Register concerning the reason for the proposed rule and some of the expected costs and benefits to producers and consumers can be seen at <http://www.ams.usda.gov/nop/rule/ria.htm>.

*Consumer Reports* magazine has recently published an online report concerning organic produce. The results show that some has pesticide residue, but much less than that found in conventionally grown nonorganic fruits and vegetables. The report states it is almost impossible for consumers to tell the difference between these two types of produce based on quality, taste or nutritional differences<sup>4</sup>. For other information on organic honey, read about *miel biologique* in Europe (May 1997 *APIS*)<sup>5</sup>, and the organic certification program in Florida (May 1991 and February 1996 *APIS*)<sup>6,7</sup>.

One intriguing subject in the proposed rule deals with wild crop harvesting. A case might be made that some honey produced from feral plants might fall under the following provisions:

§205.11 Wild crop harvesting.

(a) Any land from which a wild crop intended to be sold, labeled or repre-

sented as organic is harvested shall have had no prohibited substance, as delineated in the categories of substances prohibited for use in organic farming and handling set forth in §205.21, applied to it for a period of three years immediately preceding the harvest of the wild crop and at any time thereafter.

(b) A wild crop shall be harvested in a manner that assures that such harvesting or gathering will not be destructive to the environment and will sustain the growth and production of the wild crop.

Comments on the proposed rule must be received by March 16, 1998. They should be mailed to Eileen S. Stommes, Deputy Administrator, Agricultural Marketing Service, USDA, Room 4007-S, Ag Stop 0275, PO Box 96456, Washington DC 20090-6456, faxed to 202/690-4632, or submitted online through the National Organic Program Web Page. ■

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## The Future of Extension Apiculture

DR. RAYMOND NABORS has published a provocative dissertation titled *Apiculture Extension Education Needs in the United States*, University of Missouri-Columbia, MO, December 1997. The basis of this publication is a Delphi study that asked questions of 25 extension beekeeping specialists around the nation. The perception of a general decline in the number of beekeepers and recognition by growers that fewer honey bee colonies are available for pollination stimulated this investigation. The reduction in the number of beekeepers appears to be the result of a number of factors, according to Dr. Nabors, including deletion of government programs (price support and loan), introduction of parasitic mites, and increased honey importation, which lowered prices paid for that commodity. Beyond the reduction in numbers of managed colonies, Varroa mites also contributed to a perceived drastic decline in the feral population. All this has contributed, Dr. Nabors concluded, to less pollination of crops in Missouri and elsewhere. [Editor's note: For more about this pollination crisis see the March 1996 *APIS*<sup>8</sup>.]

A suggested remedy to ease the shortage of honey bees for pollination is to encourage more beekeeping by growers and others. Dr. Nabors concluded that growers managing their own bees has not generally been a viable strategy because it is such a specialized activity. His hypothesis for encouraging more beekeeping is to provide improved educational opportunities for potential apiculturists. He suggests that the Cooperative Extension Service is the most logical organization for this task. The purpose of his study, therefore, was to try to determine what extension programs might ensure that apiculture remain a viable agricultural industry. [Editor's note: For more on extension's mission see the June 1996 *APIS*<sup>9</sup>.]

Specific questions included:

1. Is there a consensus regarding the major problems affecting beekeeping?
2. What changes are needed in apiculture and beekeeping education?
3. What should government do to ensure a viable beekeeping industry?
4. How can educational institutions help?

“

This state of affairs could indicate a national pollination problem in the making.

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As part of his dissertation, Dr. Nabors produced a generalized profile of present-day apicultural specialists employed by the Cooperative Extension Service. Of 25 respondents, only three assigned 90 percent of their time to beekeeping education. Seven devoted 80 to 90 percent of their activity outside of apiculture; the average spent on beekeeping education was 17 percent. These beekeeping specialists had an average of 13.5 years of experience, ranging from 40 to fewer than two years. Seven were between the ages of 36 and 45 and 11 between the ages of 46 and 55. Five were over 56 years old. Although there was

an average of four assistants serving in apiculture extension programs, sixteen received no help at all.

This demographic profile of extension specialists also mirrors, to a degree, that of commercial beekeepers. Dr. Nabors cited articles by M. Slotterbach on the future of beekeeping (*American Bee Journal*, Vol. 130, 1990, nos. 9–10, pp. 594–596, 643–647), which concluded that the average commercial beekeeper was 51.8 years old, ranging from 48 to 52. The vast majority of beekeepers were found to be small-scale with an average of only 10 colonies and most began beekeeping later in life, about age 40. Because most beekeepers appear to live near urban centers, Dr. Nabors suggests this could be responsible for a shortage of bees for pollination in rural areas.

Respondents to Dr. Nabors' study agreed that the most critical problem facing the beekeeping industry is mite infestation. However, there was also consensus that controlling mites should be part of a comprehensive effort to manage diseases and pests, and that breeding for resistance, improving management techniques and implementing chemical control should all be included. [Editor's note: See the February 1993 *APIS* for a discussion of a possible comprehensive management plan<sup>10</sup>.] The respondents also concurred that more and better beekeepers were needed, and that it was necessary to make a profit to sustain the activity. With reference to pollination, respondents said an industry was already in place and that reliance on alternative pollinators could not be expected to replace commercial pollination using the honey bee.

Most respondents believed that it was the responsibility of University Cooperative Extension to educate beekeepers, growers and others in the importance and mechanics of keeping bees. Three separate programs might be necessary, according to Dr. Nabors: training beekeepers, educating growers and informing the general public. There was also a regional component to proposed educational programs. Training not only in honey production, but also in queen and package bee production, was seen as more important in certain areas, as was commercial pollination. [Editor's note: The lat-

ter is a completely different enterprise because it has a service rather than a production focus as discussed in the November 1993 *APIS*<sup>11</sup>.]

**D**R. NABORS also addressed specific educational methods in his dissertation. Respondents agreed that face-to-face communication was best, but that the written word was also powerful. Most thought use of electronic technology was overrated in the minds of administrators and the public. This parallels current discussions about this issue on university campuses. The respondents viewed electronic methods as additions to traditional one-on-one communication and distribution of publications.

Beyond education, respondents agreed that most specialists should also have some research responsibility. There was little agreement, however, on how research and educational efforts should be coordinated. Most did not agree that a national coordinator was needed in Washington, although one at the regional level was thought to be important. In general, the results indicated that communication among experts in apiculture could be improved. Dr. Nabors did state that one organization, the American Association of Professional Apiculturists (AAPA), was a possible group to address the situation<sup>12</sup>.

Finally, there was agreement that funding for research and extension efforts could not be fully supported by the beekeeping industry and that public money was necessary. Most thought the public would continue to support these efforts if adequately informed about their importance. There was less confidence, however, that the current level of support could be maintained. [Editor's note:

Self-funding in research, but not extension, is being addressed through new initiatives like adding this function to the mandate of the National Honey Board. A Canadian model bee research program was also discussed in the February 1997 *APIS*<sup>13</sup>. The French program at Aix-en-Provence has both an extension and research component as reported in the March 1997 *APIS*<sup>14</sup>.]

An outcome of Dr. Nabors' study was the perception that developing economic data on and teaching the business aspects of beekeeping had received too little attention. His recommendation was that some extension workers should specialize in these topics. [Editor's note: Dr. Roger Hoopingarner, now retired from Michigan State University, and I published a chapter on this subject for the first time in the 1992 *The Hive and the Honey Bee*, published by Hamilton, IL: Dadant and Sons, Inc. pp. 723–755. Two spread-sheet-based programs available to beekeepers also represent a beginning in addressing this situation. One from the American Association of Professional Apiculturists was produced by Cornell University<sup>15</sup> and the other was published by the USDA Tucson Bee Research Laboratory<sup>16</sup>.]

In summary, Dr. Nabors said that current extension programs are of good quality, but insufficient in quantity. There is, for example, on the average less than one beekeeping specialist for each state. As the mean age is 50, retirements will be inevitable from the current specialist ranks, perhaps resulting in a further decline in current resources dedicated to this activity. This state of affairs, he concluded, along with declining numbers of beekeepers and honey bee colonies could indicate a national pollination problem in the making. ■

<sup>4</sup><http://www.consumerreports.org/Special/News/Reports/9712n001.htm>

<sup>5</sup><http://www.ifas.ufl.edu/~mts/apishtm/apis97/apmay97.htm#3>

<sup>6</sup><http://www.ifas.ufl.edu/~mts/apishtm/apis91/apmay91.htm#6>

<sup>7</sup><http://www.ifas.ufl.edu/~mts/apishtm/apis96/apfeb96.htm#1>

<sup>8</sup><http://www.ifas.ufl.edu/~mts/apishtm/apis96/apmar96.htm#1>

<sup>9</sup><http://www.ifas.ufl.edu/~mts/apishtm/apis96/apjun96.htm#1>

<sup>10</sup><http://www.ifas.ufl.edu/~mts/apishtm/apis93/apfeb93.htm#1>

<sup>11</sup><http://www.ifas.ufl.edu/~mts/apishtm/apis93/apnov93.htm#5>

<sup>12</sup><http://www.ianr.unl.edu/ianr/entomol/aapa/aapadir.htm>

<sup>13</sup><http://www.ifas.ufl.edu/~mts/apishtm/apis97/apfeb97.htm#4>

<sup>14</sup><http://www.ifas.ufl.edu/~mts/apishtm/apis97/apmar97.htm#1>

<sup>15</sup><http://ianrwww.unl.edu/ianr/entomol/beekepg/aapapubs.htm#Item4>

<sup>16</sup><http://gears.tucson.ars.ag.gov/soft/bke/index.html>

# More on Transgenic Plants and Beneficial Insects

I RECENTLY RECEIVED a letter from Mr. Chris Allen, president and general manager of Hat Honey Farm, Medicine Hat, Alberta, Canada. He said that hybrid transgenic canola pollination now uses 25,000 to 30,000 hives in his region and is expected to grow in the future. He concluded that the technology used to produce these genetically modified plants is amazing, but also troubling because of little-known potential long-term effects on honey bees as pollinating vectors. Mr. Allen believes some of the problems seen in canola pollinating colonies, which include population decline and queen supersedure, may be the result of genetic modification of the plants. He asked if there are some unresolved issues that beekeepers and others should look at concerning this technology.

Transgenic plants are those that have had genetic material inserted into them to provide built-in protection against diseases and pests. I reported this use in transgenic oilseed rape from France in the April 1997 *APIS*<sup>17</sup>. In the July 1997 *APIS*, I relayed more developments and resulting concerns about this technology. At that time I concluded, "Premature use of the technology in a worse case scenario would be to develop transgenic plants to which insect pests become resistant that at the same time discourage pollination by beneficial insects."<sup>18</sup>

Now I have received news that beneficial insects might in fact be affected by this technology. This comes from an article by Dr. Claire Gilbert, who writes the *Blazing Tattles* newsletter, titled "Ladybug, quickly fly away home!"<sup>19</sup> Transgenic potatoes in Scotland, bred to discourage aphid feeding, did not com-

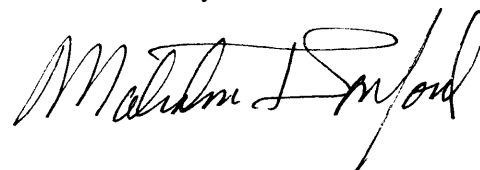
“  
Beekeepers should  
carefully monitor bees  
foraging on or  
pollinating genetically  
modified plants.”

pletely eliminate all the aphids. Ladybug beetles were used to clean up the remaining population. Unfortunately, the beetles that ate those aphids, which had been feeding on the transgenic potatoes, were also affected. This information, according to Dr. Gilbert, was reported in A.N.E. Birch, et. al., "Interactions between plant resistance genes, pest aphid populations and beneficial aphid predators," *Scottish Crop Research Institute (SCRI) Annual Report 1996-*

1997, esp. pp. 70-72. SCRI is located at Invergowrie, Dundee DD2 5DA. Telephone: national (01382) 562731, international +44 1382 562731, Fax: national (01382) 562426, international +44 1382 562426.

It is too early to tell where all this will lead. History has shown that in the race to produce superior crop varieties, many resources go into determining the agricultural inputs necessary to get the plant out of the ground. Often, however, one of the most difficult to study, pollination requirements, gets short shrift. Mr. Joe Robinson, a bee inspector in West Florida, contends that there is no difference between cotton nectar production when comparing genetically altered to normal or control plants. His opinion that most of the discrepancies reported can be traced to underlying soil type appears to provide some reason to be optimistic in this area. Until more information becomes available, however, beekeepers should continue to carefully monitor their bees foraging on or pollinating genetically modified plants. ■

Sincerely,



<sup>17</sup><http://www.ifas.ufl.edu/~mts/apishtm/apis97/apapr97.htm#4>

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

<sup>19</sup><http://www.concentric.net/~blazingt/info/index.htm>

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