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## **HONEY BEE DIE-OFF ALARMS BEEKEEPERS, CROP GROWERS AND RESEARCHERS**

UNIVERSITY PARK, Pa. -- An alarming die-off of honey bees has beekeepers fighting for commercial survival and crop growers wondering whether bees will be available to pollinate their crops this spring and summer.

Researchers are scrambling to find answers to what's causing an affliction recently named Colony Collapse Disorder, which has decimated commercial beekeeping operations in Pennsylvania and across the country.

"During the last three months of 2006, we began to receive reports from commercial beekeepers of an alarming number of honey bee colonies dying in the eastern United States," says Maryann Frazier, apiculture extension associate in Penn State's College of Agricultural Sciences. "Since the beginning of the year, beekeepers from all over the country have been reporting unprecedented losses.

"This has become a highly significant yet poorly understood problem that threatens the pollination industry and the production of commercial honey in the United States," she says. "Because the number of managed honey bee colonies is less than half of what it was 25 years ago, states such as Pennsylvania can ill afford these heavy losses."

A working group of university faculty researchers, state regulatory officials, cooperative extension educators and industry representatives is working to identify the cause or causes of Colony Collapse Disorder and to develop management strategies and recommendations for beekeepers. Participating organizations include Penn State, the U.S. Department of Agriculture, the agriculture departments in Pennsylvania and Florida, and Bee Alert Technology Inc., a technology transfer company affiliated with the University of Montana.

"Preliminary work has identified several likely factors that could be causing or contributing to CCD," says Dennis vanEngelsdorp, acting state apiarist with the Pennsylvania Department of Agriculture. "Among them are mites and associated diseases, some unknown pathogenic disease and pesticide contamination or poisoning."

Initial studies of dying colonies revealed a large number of disease organisms present, with no one disease being identified as the culprit, vanEngelsdorp explains. Ongoing case studies and surveys of beekeepers experiencing CCD have found a few common management factors, but no common environmental agents or chemicals have been identified.

The beekeeping industry has been quick to respond to the crisis. The National Honey Board has pledged \$13,000 of emergency funding to the CCD working group. Other organizations, such as the Florida State Beekeepers Association, are working with their membership to commit additional funds.

This latest loss of colonies could seriously affect the production of several important crops that rely on pollination services provided by commercial beekeepers.

"For instance, the state's \$45 million apple crop -- the fourth largest in the country -- is completely dependent on insects for pollination, and 90 percent of that pollination comes from honey bees," Frazier says. "So the value of honey bee pollination to apples is about \$40 million."

In total, honey bee pollination contributes about \$55 million to the value of crops in the state. Besides apples, crops that depend at least in part on honey bee pollination include peaches, soybeans, pears, pumpkins, cucumbers, cherries, raspberries, blackberries and strawberries.

Frazier says to cope with a potential shortage of pollination services, growers should plan well ahead. "If growers have an existing contract or relationship with a beekeeper, they should contact that beekeeper as soon as possible to ascertain if the colonies they are counting on will be available," she advises. "If growers do not have an existing arrangement with a beekeeper but are counting on the availability of honey bees in spring, they should not delay but make contact with a beekeeper and arrange for pollination services now."

"However, beekeepers overwintering in the north many not know the status of their colonies until they are able to make early spring inspections," she adds. "This should occur in late February or early March but is dependent on weather conditions. Regardless, there is little doubt that honey bees are going to be in short supply this spring and possibly into the summer."

A detailed, up-to-date report on Colony Collapse Disorder can be found on the Mid-Atlantic Apiculture Research and Extension Consortium Web site at <http://maarec.org>.

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