

Penn State Entomologists Study Mite-Infesting Bee Colonies

UNIVERSITY PARK (Centre Co.) — Pennsylvania's honey bees are under attack -- not from killer bees, but from a parasite that is wreaking havoc in the state's honey bee industry, according to two Penn State researchers.

"In a survey of Pennsylvania beekeepers and honey bee colonies, we found widespread evidence of tracheal mite infestation," says Dr. Edwin G. Rajotte, assistant professor of entomology.

First discovered in the United States in 1984, the tracheal mite has "spread like wildfire," says Maryann Tomasko, instructor of entomology and project associate. The microscopic parasite has caused some beekeepers losses of 50 percent or more of their honey bee colonies in a single winter. Normal losses following winter run about 10 percent, she adds.

The mite is a threat to honey production and pollination of crops nationwide, because it debilitates and eventually kills the bees it infests. The value of the crops pollinated by honey bees exceeds \$20 billion nationally. In 1985, the value of increased yield and quality achieved through pollination by honey bees alone amounted to nearly \$9.3 billion.

In Pennsylvania, there are approximately 8,000 registered beekeepers and about 75,000 honey bee colonies, Tomasko notes. The industry produced \$1.4 million worth of honey in 1988, and it also provided pollination services for a wide variety of fruits and crops in Pennsylvania and elsewhere. Approximately 6,000 Pennsylvania honey bee colonies are used for pollination purposes and honey production outside the state, she adds.

Honey bees are critical to Pennsylvania's apple industry in particular, Rajotte said. Pennsylvania ranks fifth nationally in apple production.

To ensure the survival of the state's honey bee industry, the researchers are completing a survey of tracheal mite infestation funded by a \$46,000 grant from the Pennsylvania Department of Agriculture and continuing their research with an additional \$50,000 grant from PDA.

The new project runs through Dec. 30, 1990, and involves developing an efficient method for

determining the infection rate and an effective treatment delivery system. The information will be incorporated into a computerized expert system called "Bee Aware" to assist beekeepers.

The tracheal mite is a tiny, insect-like creature similar to a spider. It enters the breathing tubes, or trachea, through holes along the sides of the honey bee's body which are used for breathing. It attaches itself to the wall of the breathing tubes and takes nutrients from the bee's blood, Rajotte explained.

"The mites debilitate bees and, because bees live together in colonies, spread easily through the colony. They are present in the colony year round, but are most devastating in winter, when no new bees are being produced," he said.

Current methods for detecting the presence of mites are time-consuming, involving the dissection of many bees and a lengthy laboratory procedure. Since the mites spread rapidly, quick diag-

nosis is essential to save a colony, Tomasko says.

The only treatment available is menthol. When menthol crystals are placed in a colony, they vaporize creating a gas that acts as a fumigant. The gas kills the mites, although exactly how the fumigant works is not known. Timing of the menthol treatment also is crucial, since applying it at the wrong

time can be ineffective or taint the honey.

"Menthol is a short-term answer to a long-term problem," Tomasko says.

Rajotte adds, "When our research is complete, we will have a very specialized system that offers advice on discovering mites, sizing up the rate of infestation and managing the pest."

Until this method is developed, beekeepers who want to identify the presence of tracheal mites in their colonies should send bees to: James Steinhauer, Chief Apiary Inspector, Pennsylvania Department of Agriculture, 2301 N. Cameron St., Harrisburg, PA 17110-9408, or to USDA Beneficial Insects Lab, BARC-East, Beltsville, MD 20705.

Hay, Straw Directory Available

ALLENTOWN (Lehigh Co.) — A new directory of southeastern Pennsylvania forage producers is now available free from the Lehigh County Extension Office for those in the market for all types of hay and straw.

The *Southeastern Pennsylvania Forage Directory* contains 69 farmers in Lehigh, Northampton, Berks, Bucks, and Montgomery counties who are selling from 1989 yields. The booklet lists the name, address, phone, and the forage offered. The producers have described in detail the type of hay,

its quality, the amount for sale, and whether it's tested for nutrients or able to be delivered. Totaling all entries, the amount of hay listed exceeds 8,300 tons and straw over 1,250 tons.

who needs several hundred tons of hay or straw will also find many sources of exactly what they want. Nurserymen and mushroom producers will see listings for mulch hay," he explained.

"Buyers will find what they're after quickly with this directory," said Jeff Patton, Extension Agent-Marketing. "If they have a few or many horses to feed this winter, they'll see farmers with quality grass hay who sell in all amounts. The dairy or beef cattle farmer

The forage directory is available free from the extension offices of the five southeastern Pennsylvania counties covered. The Lehigh Extension Office is at 4184 Dorney Park Road, Allentown, PA 18104 or call (215) 391-9840.

Thanks and Congratulations to

JOHNSON'S CORNER MARKET

Medford, NJ

On Their New Two-Story Farm Market Facility



- Post Frame Construction
- Shingle Roof
- Reverse Board & Batten Siding

• 1,950 Sq. Ft. Sales Area

• 750 Sq. Ft. Exterior Display Area

• 2,000 Sq. Ft. 2nd Floor Storage Area



BUILT BY



AGRI-INC. The Construction Professionals

R.D. 4, Ephrata, PA 17522 • (717) 354-4271

Serving The Agricultural Industry For Over 20 Years

Let Our Experience
Work For You
For All Your
Farm Building Needs,
Large Or Small

DMU DROP NEW CENTER quic-cush'n bumper hitch



- A NEW WORKING BUMPER WITH STYLE AND CLASS!
- Saves time...one trip to hook up! No running back and forth...swinging, extendable towbar for widest hookup range!
 - Takes "jerk" out of towing... cushion springs minimize surge...saves your back!
 - Reduces stress on complete drivetrain with 4" spring cushion fore and aft!
 - No parts to break or wear out...all steel with removable 6 ga. face... no poly parts!
 - Versatility...mounts on full size 2WD or 4WD pickups to pull grain wagons, horse trailers, etc.

regular model quic-cush'ne
Standard and heavy-duty units for 2-wheel and 4-wheel drive full size pickup trucks and heavy-duty "stubby" units for straight trucks.

For further information see your dealer or call or write:
DMU INC. • RT. 105 E. • BOX 85 • GOODFIELD, IL 61742
PH. 309/985-2233

100 Stever Drive
Carlisle, PA 17013
Phone (717) 246-6788



111 Cedar Street
P.O. Box 928
Batavia, N.Y. 14020
Phone (716) 343-6411