

Beekeepers in Pittsburgh

On Friday, July 5, 2019, PA Department of Agriculture (PDA) Apiary Inspectors Bonnie Hall and Ken Hoover inspected the bee yards of a Pittsburgh beekeeper who suspected a problem in his bee colonies. Bonnie and Ken found six colonies that showed signs of American Foulbrood.

They followed inspection procedures for suspect AFB cases by running various field tests and taking samples of the affected brood. Both the visual and rope tests were positive in all samples. The Holst milk test also came back positive. The inspectors took samples of the brood which will be sent to the Bee Research Lab in Beltsville, Maryland for testing. Samples will be tested to confirm whether the disease is AFB or European Foulbrood, and to see whether the disease is resistant or susceptible to antibiotics. Final test results have not come back yet, but based on the field tests and the serious threat the disease poses to bee colonies, we are treating these bee yards as positive AFB sites.

The beekeeper was offered the option of waiting for confirmed positive test results before taking definite treatment action, but he decided to destroy the sick hives immediately. He killed the bees, dug a hole, burned, and buried the affected equipment and dead bees. PDA commends this beekeeper for his proactive, conscientious actions to help prevent the spread of this contagious bee disease by promptly contacting his regional PDA Apiary Inspector and destroying the sick hives.

American Foulbrood (AFB) is an infectious brood disease caused by a spore-forming bacterium, *Paenibacillus larvae*. The infection begins when nurse bees feed larvae food contaminated with spores. The spores germinate into the active vegetative form of the bacteria in the larval intestines, rapidly spreading and infecting all larval tissue. The larvae die, usually after the cell is capped. This creates unfavorable conditions for the vegetative form of the bacteria. The bacteria then form millions of infective spores in the larval remains. The dried remains of AFB infected larvae are called scale and they become “glued” to the cell.

Adult bees can carry the disease-causing bacteria, but they do not appear to be affected by the disease. AFB can be spread several ways including moving frames (“empty” or with brood, nectar, honey, or pollen) or equipment from an infected colony to a healthy colony, allowing bees to clean up frames after extracting honey from infected hives, using hive tools or other gear in an infected hive and then in a healthy hive, robber and drifting bees, swarms, and re-using infected equipment. Please note that American Foulbrood does not affect humans and the honey is safe for human consumption, but the extractor and equipment must be thoroughly cleaned and disinfected.

The vegetative form of the bacteria can be killed with antibiotics, but the spores found in scale are extremely difficult to kill. These spores can remain viable and “come back to life” for at least 80 years. Extreme weather conditions (heat, cold, desiccation, etc.), antibiotics, and most chemical disinfectants will **not** kill these spores. Fire will kill the spores. Killing

the sick bees and burning the equipment is often the recommended method and the best solution to treat an AFB problem in a bee yard. (Be aware of burn regulations in area.)

Irradiating equipment will also kill the spores. Mark Antunes and the Montgomery County Beekeepers have been taking equipment to be irradiated at Sterigenics, a facility in Salem, New Jersey annually. Contact Mark for additional at honeyhillfarm@verizon.net

PDA Apiary Inspectors will be inspecting all registered bee yards within a 2 ½ mile radius of the bee yards where AFB was found. When possible and as needed, Bonnie Hall will be assisted by Apiary Inspectors Kent Kaster and Ken Hoover from the two neighboring regions. Our goal is to inspect each registered bee yard and educate each beekeeper about AFB. We realize that there are many beekeepers in the area who are not registered. We would encourage these beekeepers to contact Karen Roccasecca (kroccasecc@pa.gov - State Apiarist in Harrisburg). We do not want the honey bees of unregistered beekeepers to unknowingly spread AFB to other bees. The PA Bee Law requires anyone who manages honey bees to register them with the PA Department of Agriculture. The form is easy to complete and there is a \$10 fee for a license which is valid for up to two years. If you register now, your Apiary License is valid until December 31, 2020. Registration forms and additional information on American Foulbrood and how to help prevent the spread will be available at www.agriculture.pa.gov.

American Foulbrood outbreaks are a serious matter, but I am confident that with the help, awareness, and cooperation of beekeepers, the PA State Beekeepers' Association, local beekeeping organizations, the Apiary Advisory Board, and Penn State working with the PDA Apiary Inspectors and PDA, we can stop the spread of AFB. This is an opportunity to refine and improve on our plans to all work together when serious beekeeping problems occur.

Thank you for your help, assistance and cooperation.

Sincerely,

Karen Roccasecca and the PDA Apiary Inspection Team

July 15, 2019