EGG INDUSTRY CENTER AIDS RESEARCH ON AVIAN INFLUENZA VIRUS

When the magnitude of last year's avian influenza outbreak became apparent, so did the critical need for research. Egg Industry Center donors and partners rose to the occasion by making significant contributions to the center's endowment. Egg Farmers of Canada, United Egg Association Allied and the American Egg Board each gave generously to support AIV research and help prevent another catastrophe.

THE ROLE OF FEED, LITTER BEETLES, WATER AND RODENTS IN AVIAN INFLUENZA VIRUS TRANSMISSION

***Joseph Giambrone and Ken Macklin**, professors of poultry science at Auburn University*

"The control of Avian Influenza Virus is extremely difficult because the virus can rapidly spread worldwide through migrating wild ducks and geese. Once established in a poultry population, it can mutate into various subtypes," said Joseph Giambrone, professor in poultry science at Auburn University. "The idea is for the industry to do everything it can to improve biosecurity and keep anything that can transmit AIV from getting into the house."

The Auburn University research team, led by Giambrone and Ken Macklin, also a professor in poultry science at Auburn University, are working on a project that aims to discover ways – in addition to wild water fowl – in which AIV can be transmitted into and among poultry farms. Over the course of 12 months, the researchers are examining four possible culprits: feed, darkling beetles, biofilm lining in poultry house water lines and rodents, to be done in three phases.

The first phase of the study was completed in summer 2016. It examined whether feed and darkling beetles, insects commonly found in poultry houses around the world, can result in virus transmission. The results showed that beetles, but not feed, can become infected and harbor AIV for a prolonged period of time. Therefore, insect control is important to minimizing the spread of AIV.

Propagation of a beetle colony used to evaluate AIV feed contamination.

Phase two investigated the role of biofilm in watering systems as a way of harboring the virus. Biofilm is a slimy, sticky substance produced by bacteria and commonly found in drinking water systems of commercial poultry houses. The study showed the virus was stable in the drinkers, but could be easily flushed out.

The final phase of the study will explore whether AIV-infected mice can spread the virus to other mice and how long the virus lasts in their fecal material.

When discussing the potential impact of this research, Giambrone said the study will "provide recommendations to farmers about what they need to do to reduce the spread of the virus."

He continued by saying, "**Our research will provide an economic advantage to the entire U.S. poultry industry.** Their initial small dollar research budget to investigate these critical issues has the potential to save millions of dollars in lost production from future AIV outbreaks."