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# Avian Influenza

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# AVIAN INFLUENZA



**D**isaster struck poultry farms in Lancaster County in the middle of October. Suddenly farmers were losing up to 70 percent of their flocks, and egg production dropped to zero. All summer long Lancaster County poultry farmers had coped with outbreaks of avian influenza, but their birds had lived and continued to produce eggs, though at a reduced rate.

"In April we identified an avian influenza virus, H5N2, from chickens on poultry farms in a 25-square-mile area of Lancaster County," said Dr. Robert J. Eckroade, head of the Cooperative Poultry Diagnostic Laboratory at New Bolton Center. "The disease was mild, though its economic impact was great on the farmers, as profit margins in the poultry industry are small and even just a little drop in productivity is significant."

Drs. Eckroade and Silverman and the staff at the laboratory have monitored avian influenza since they first identified the virus. In mid-October the disease suddenly changed. It became deadly. "The mortality rate jumped to 70 percent and egg production declined to zero," Dr. Eckroade explained. "We were and are still dealing with the H5N2 virus, though a more pathogenic form." He stated that flu viruses often become more virulent as they cycle through a population of birds. This is nothing unusual.

By the middle of November the laboratory had examined serum samples from close to 500 farms and had identified the disease in 79 cases, twenty-one of these were of the more dangerous strain. This does not constitute the total number of cases as much testing is now done by federal officials. The USDA has declared the outbreak of avian influenza an "extraordinary disease problem" and has launched a program to try to eradicate the disease. Federal and state officials have placed the affected area under quarantine and poultry, poultry products and equipment can only be moved by permit. A

program of depopulating affected flocks has begun and farmers will be reimbursed for the destroyed chickens only. These are the animals with the virulent strain of avian influenza, they will be killed and disposed of by burial. Dr. Eckroade estimates that three million chickens will be killed between now and January 1984.

When avian influenza first appeared in April, Dr. Eckroade and his colleagues, in cooperation with the Lancaster County Poultry Association, developed a protocol to prevent the spread of the disease. They recommended that chicken houses be declared off limits to everyone but the personnel working there. They asked that personnel wear protective clothing when entering the houses and that this clothing be changed prior to entering another chicken house. Despite these and many other precautions the disease continued to spread at a rate of about five farms per month until mid-October.

It appears now, according to Dr. Eckroade, that avian influenza may have been spread not by people but by flies. Flies collected in infected

chicken houses were found to have flu virus. "These flies can travel between 0.8 and 1.8 miles without any difficulty," he said. "That's the distance between many of these farms. Also, earlier Larvadex, a larvicide which is added to chicken feed to control flies, was removed from the market and the fly population increased dramatically." Many farmers reported that avian influenza usually started in the middle of the chicken house, and spread from there, suggesting that the virus was not "walked" into the chicken house. Today chickens are housed in large buildings which are ventilated and which provide a controlled environment for up to 80,000 birds living there. The air is moved with huge fans which bring in fresh air. It is very possible that the flies are sucked in and then dropped through this air shaft. Anyone traveling between farms knows how many flies can be in the vehicle when one leaves. So it may well be that the suspected movement of the virus by people was really due to transport of flies from farm to farm in some cases.

Federal investigators have begun to monitor the migrating water fowl passing through southeastern Pennsylvania on their way south. "The milder form of avian influenza probably arrived here with these birds," said Dr. Eckroade. "They carry the virus but are not affected by it." Now the great worry is that the more virulent strain may be carried by migrating birds to other areas of the country. It is extremely important that dead birds with the disease are disposed of in such a manner that other animals are not exposed to the virus. Currently dead birds are moved in closed trucks and are promptly buried.

Avian influenza last appeared in Pennsylvania in 1924/25 when Dr. Evan L. Stubbs (V11) identified a lethal strain which killed entire flocks. Since that time there have only been a few outbreaks in other states.

The Cooperative Poultry Diagnostic Laboratory at New Bolton Center is partially funded through an annual grant from the Pennsylvania Department of Agriculture's Bureau of Animal Industry. Competitive grants from the U.S. Department of Agriculture and the Pennsylvania Department of Agriculture help to fund poultry research. It is one of four such laboratories in the state.

In the middle of November personnel at the laboratory were working at a fever pitch, analyzing about 1,000 serum samples weekly in an effort to monitor the outbreaks of the two forms of avian influenza. It can only be hoped that the measures instituted by the state and federal governments will halt the spread of the disease to other parts of the state and the country. These measures and the disease have a severe impact on the poultry industry. "Poultry farming in Pennsylvania is a family business," said Dr. Eckroade. "There will be many farmers who will be out of business because the reimbursement will not begin to cover all the expenses. In addition, no funds are available to cover the losses incurred before the federal program was started." Dr. Eckroade also pointed out that there is an additional impact because consumers are afraid to eat chickens or eggs. They fear that the virus may affect them. "That's nonsense," he said. "People are not infected by this flu virus. Poultry farms infected with the highly pathogenic form of the virus are quarantined and no eggs or birds leave the farm except to be buried." *Helma Weeks*

**Note: As of Dec. 8, 1983, the number of chickens destroyed reached 5.9 million. The ban on the use of Larvadex was lifted for Pennsylvania.**

