

An explanation of wild birds' role in avian flu outbreak

April 27 2015, by David Pitt

Wild birds are believed to be behind the first major widespread outbreak of bird flu in the United States. The H5N2 virus has cost Midwestern turkey and chicken producers almost 13 million birds since early March, including several new cases announced in Iowa on Monday. Here are some questions and answers about how wild birds remain healthy even when carrying and spreading the virus.

HOW DID THE VIRUS ARRIVE STATESIDE?

Disease experts believe a portion of it came from European and Asian strains of bird flu that readily cause illness and death in birds and mixed with a North American strain that was less likely to cause severe illness as birds from different regions crossed migratory paths.

The U.S. Department of Agriculture and the U.S. Geological Survey have reported three versions of bird flu in 57 cases confirmed since December, starting first with domestic backyard flocks, wild captive birds and wild aquatic birds in California, Idaho, Oregon and Washington. Additional cases surfaced in January and February on the West Coast, and by March, cases emerged in the Midwest.

WHICH WILD BIRDS CARRY THE VIRUS?

Bird flu has been found in more than 100 species of wild birds, but most are low pathogenic viruses—present, but don't sicken or kill it. The virus can be left behind in wild birds' feces, on feathers and on the bodies of

dead birds. Birds confirmed to have carried the virus currently spreading infection in the United States include ducks, Canada geese and predatory birds.

HOW DOES THE VIRUS GET INTO COMMERCIAL BARNS?

USDA Chief Veterinary Officer Dr. John Clifford has said it's not entirely clear how the virus gets into commercial barns, which are mostly enclosed, but there are likely several ways. In some cases, the virus may enter on clothing or shoes of workers, although commercial operations have strict biosecurity guidelines for changing clothes and disinfecting items. Clifford also speculates wind could be carrying the virus in on dirt particles or feathers through barn ventilation openings. Officials are exploring all possibilities in an effort to identify and eliminate identified pathways, Clifford said.

IS IT THE FIRST SUCH OUTBREAK IN THE U.S.?

It's the first widespread one that's affected millions of commercially raised chickens and turkeys, but there have been sporadic cases of low pathogenic versions before. In 2004, an outbreak of H5N2 was found in a flock of 7,000 chickens in Texas, marking the first outbreak of a high pathogenic strain in 20 years, the U.S. Centers for Disease Control and Prevention said.

WHAT DO THE NUMBERS AND LETTERS MEAN WHEN IDENTIFYING VIRUS STRAINS?

The numbers specify proteins on the flu virus surface. One set has a long scientific name starting with an H numbering 1-16 and the other has a long name starting with an N and number 1-9. The protein mixture determines whether the virus can attach only to bird cells, infect other animals or attach to human cells. In all, there are 144 ways the proteins

can mix to create different versions of the bird flu, ranging from H1N1 to H16N9.

COULD BIRD FLU SICKEN AMERICANS?

There have been no confirmed cases of illness in humans associated with the current H5N2 bird flu virus, leading scientists to believe it cannot easily attach to human cells. There is an increased chance of human infection, the CDC says, because bird flu viruses have been known to mutate into versions that can jump to humans.

WHAT CAN I DO TO AVOID THE BIRD FLU?

The CDC recommends observing wild birds only from a distance and avoiding contact with surfaces that appear to be contaminated with bird feces. Also, avoid contact with domestic poultry that appear ill or have died and properly handle and cook poultry products.

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