Q&A: What you need to know about avian flu

June 10 2024, by Chuck Gill

As an outbreak of highly pathogenic avian influenza in dairy cows continues to evolve, an extension veterinarian in Penn State's College of Agricultural Sciences answers some common questions about the how the virus spreads, the implications for food safety and human health, and how dairy producers can protect their herds, Credit: Steve Williams, College of Agricultural Sciences

Multiple states since March 2024 have reported dairy herds displaying symptoms caused by highly pathogenic avian influenza, or HPAI.

The H5N1 strain found in the cows is the same virus that, since 2022, has caused outbreaks in poultry across the country, leading to the loss of almost 97 million birds—mostly chickens and turkeys—including more than 4.7 million in Pennsylvania.

Although there is little mortality associated with the disease in cattle, affected cows often exhibit a drop in feed intake and milk production, thickened abnormal milk and abnormal manure, among other symptoms.

These outbreaks have raised questions about how the virus spreads, how producers can protect their animals, the risk of infection in people, the safety of milk and meat supplies, and other issues.

Penn State News spoke with extension veterinarian Ernest Hovingh, clinical professor of veterinary and biomedical sciences in the College of Agricultural Sciences and director of the college's Animal Diagnostic Laboratory, to answer these and other questions related to the H5N1 outbreak in dairy cattle.

How did dairy cows become infected with avian flu?

Hovingh: Wild birds—especially waterfowl—which are natural carriers of avian influenza are believed to be the original source of infections in cattle. It appears that many, if not all, of the infections since an initial "spillover event" to cattle have been associated with the movement of cattle from an affected herd to another herd.

How the virus is spreading is not yet completely understood, but there's evidence of cow-to-cow transfer. Some of that might be via fomites—objects or materials that can be contaminated with a

pathogen—such as contaminated milk from a cow coming in contact with another cow, since milk from infected cows tends to have high levels of virus.

If avian flu virus can be present in cow milk, is the milk we buy at the store safe to drink?

Hovingh: Milk from cows that are known to be sick is diverted from the milk supply, in accordance with Food and Drug Administration regulations. But even if viral or bacterial pathogens are present in raw milk, the milk sold for processing or retail sale in interstate commerce must be pasteurized by law, and pasteurization was developed to inactivate any harmful organisms.

The FDA also has announced that, although HPAI virus fragments have been found in some pasteurized milk samples, the pasteurization process inactivates the virus so it is not a risk to consumers.

What about beef, poultry meat and eggs? Are those safe to consume?

Hovingh: To verify the safety of the meat supply in the wake of the current avian flu outbreak, the U.S. Department of Agriculture has conducted three beef safety studies related to avian influenza in meat from dairy cattle. These studies suggested that beef purchased at retail outlets that is cooked to recommended temperatures is safe to eat.

Penn State Extension food safety experts have said that consumers who follow proper food handling and cooking practices as highlighted on the Centers for Disease Control and Prevention website can minimize the risk of foodborne pathogens, including HPAI.

Can avian flu infect people?

Hovingh: Despite HPAI showing up recently in livestock and other mammals, federal authorities said that they have found no evidence that the virus has evolved to make it more transmissible to humans and between people. And while three cases of human infection appear to have occurred in farm workers who were in direct contact with infected cattle, they said they believe that the current risk to the public remains low. Regardless, experts recommend that people working with dairy cows on infected farms take precautions.

If you have a herd that tests positive, since there is a good bit of virus in the milk, the CDC recommends eye protection, masks and gloves, among other protections for those in direct contact with cattle. Having personal protective equipment on hand can assure a farm is prepared should they suspect the disease.

How can dairy farmers keep their herds safe from HPAI?

Hovingh: Penn State Extension offers biosecurity recommendations to help protect cattle and other animals from HPAI, such as avoiding bringing new animals onto the farm, especially lactating animals; limiting visitors to those essential to the farm; thoroughly cleaning and disinfecting equipment if moved between premises; and developing a biosecurity plan, including premovement testing for any animals that must be brought onto the farm.

Should this virus show up in dairy cattle in the commonwealth, the Pennsylvania Department of Agriculture will require an HPAI-positive herd to have an approved biosecurity plan in place. Since the disease affects cows differently than it does poultry, animals would not be

euthanized to control HPAI in dairy cattle.

How else is Penn State involved in addressing the current HPAI outbreak?

Hovingh: The Animal Diagnostic Lab at Penn State, one of three facilities in the Pennsylvania Animal Diagnostic Laboratory System, is equipped to test milk and nasal swabs from cows that are suspected of being infected with the virus. In response to a federal order that requires testing of lactating cows before they can move across state lines, the lab already is testing such milk samples. The Pennsylvania Department of Agriculture also has placed testing requirements on the movement of dairy cattle into Pennsylvania.

To identify pathogens and monitor their spread—including those that cause zoonotic illnesses that may jump to people—the lab also routinely conducts testing for HPAI and other diseases affecting poultry, livestock and other animals. These include serology tests, or blood-based tests that look for antibodies to a pathogen and indicate a prior infection, and PCR tests, or molecular tests that look for active infections.

Penn State Extension is partnering with the Center for Dairy Excellence to provide Everyday Biosecurity Kits to dairy farms at no cost. The kits include a compilation of printed biosecurity resources from across the industry.

Where can I find more information?

Hovingh: Penn State Extension offers webinars, workshops, fact sheets and other resources to provide dairy and poultry producers with the latest information and recommendations.

The USDA also provides information on avian flu in birds and livestock, and additional information—including how to report suspected cases of avian influenza in poultry or livestock—can be found on the Pennsylvania Department of Agriculture website.

Provided by Pennsylvania State University

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