

Summary of the Highly Pathogenic Avian Influenza Outbreak For the Secretary's Advisory Committee on Animal Health

Since mid-December 2014, there have been several ongoing highly pathogenic avian influenza (HPAI) H5 incidents along the Pacific, Central and Mississippi Flyways. Cases in wild birds, captive wild birds, backyard poultry or commercial poultry have been reported in Arkansas, California, Iowa, Idaho, Kansas, Minnesota, Missouri, Montana, North Dakota, Nevada, Oregon, Utah, South Dakota, Washington, Wisconsin and Wyoming. The HPAI strains detected recently in these flyways are H5N2, H5N8 and a novel H5N1.

To date, more than 3 million birds have been culled as a result of the confirmed presence of these HPAI strains. For perspective, in past serious outbreaks, in the 2002-2003 Exotic Newcastle Disease (END) outbreak, 4,493,814 poultry were culled; and in 2002, the low pathogenic H7N2 avian influenza outbreak in Virginia, 4 million poultry were culled.

USDA is coordinating closely with its State partners and other Federal agencies on avian influenza surveillance, reporting, and control efforts. Approximately 80 APHIS personnel are working virtually on these incidents. Additionally, 140 people have been deployed as part of emergency response teams. There are many more additional APHIS and State field personnel who are responding to the incidents within their affected states and/or conducting outreach and education activities throughout the country.

As part of the existing USDA avian influenza response plans, Federal and State partners as well as industry are responding quickly and decisively to these outbreaks by following these five basic steps:

1. **Quarantine** – restricting movement of poultry and poultry-moving equipment into and out of the control area;
2. **Eradicate** – humanely euthanizing the affected flock(s);
3. **Monitor region** – testing wild and domestic birds in a broad area around the quarantine area;
4. **Disinfect** – kills the virus in the affected flock locations; and
5. **Test** – confirming that the poultry farm is AI virus-free.

USDA has informed OIE and international trading partners of these findings. USDA is working with trading partners to minimize trade impacts on poultry and poultry products as much as possible.

With several different viruses circulating in wild birds, it is not unexpected that a new mixed-origin virus was identified. Viruses continually mutate and form new combinations with genetic material from similar viruses. It's not unexpected, nor is it cause for alarm. It is, however, a main reason why it is necessary to continue USDA surveillance efforts for avian influenza in migratory birds.

Because commercial flocks experienced increased mortality, samples were submitted for testing. Birds from the affected flocks did not enter the food chain.

The USDA Agricultural Research Service Southeast Poultry Research Lab (SEPRL) scientists obtained samples from early cases and quickly initiated infectivity, transmissibility, and pathogenicity studies in wild ducks, Japanese quail, turkey, and chicken. Based upon these studies, SEPRL now understands that turkeys are slightly more susceptible than chickens to infection, but Japanese quail are the most susceptible to infection by these viruses. Based upon their studies on Mallard ducks, SEPRL now understands just how easily the HPAI H5 virus can infect and spread in the major wild duck species. These viruses can infect mallards without causing illness or death and the virus can grow and be shed in respiratory and fecal secretions for over 14 day, making this species a possible means to spread the virus in the wild undetected.

SEPRL developed a specific diagnostic test (RRT-PCR) test that directly detects the new hemagglutinin gene of the viruses (in less than 3 hours) that came from Asia and a rapid N8 test. This test was transferred to the APHIS National Veterinary Services Laboratories and is being used by them. SEPRL also is working on developing a vaccine.

CDC considers the risk to people from these HPAI H5 infections in wild birds, backyard flocks, and commercial poultry, to be low. No human infections with these viruses have been detected at this time.

The United States has the strongest AI surveillance program in the world, one in which USDA actively looks for the disease as well as provides compensation to affected producers to encourage reporting. Surveillance for avian influenza is ongoing in commercial poultry operations, the live bird marketing system, backyard flocks and in migratory wild bird populations.