USDA FACT SHEET

United States Department of Agriculture • Office of Communications • 1400 Independence Avenue, SW
Washington, DC 20250-1300 • Voice: (202) 720-4623 • Email: oc.news@usda.gov • Web: http://www.usda.gov

Contact:
USDA Office of Communications (202) 720-4623

FACT SHEET: USDA STUDIES ON 2009 NOVEL H1N1 INFLUENZA AND TURKEYS
November 30, 2009

Background
Historically, turkeys are known to become infected with swine influenza virus. To assess if birds could be infected and how they could be infected with the 2009 pandemic H1N1 influenza virus, scientists at the USDA Agricultural Research Service's (ARS) Southeast Poultry Research Laboratory (SEPRL) in Athens, Ga., conducted two studies.

Turkey breeding flocks infected with swine influenza virus undergo a significant drop in egg production and typically do not show respiratory signs of illness.

The first study was conducted in May-June 2009, and also included domestic ducks, laying chickens and Japanese quail. The second study, conducted in October-November 2009, was solely with turkeys.

Turkey is Safe to Eat
The findings from these studies concluded that the 2009 novel H1N1 virus does not infect the meat of the turkeys. You cannot get this virus from eating poultry or poultry products.

Chile and Canada outbreaks
After subsequent outbreaks of 2009 novel H1N1 influenza in breeder turkey flocks in Chile and Canada, the ARS scientists at SEPRL conducted additional testing using a sample from a human case of 2009 pandemic H1N1 influenza from Chile. Initial research conducted by SEPRL scientists indicates that the virus is more easily transmitted to poultry through intrauterine inoculation than respiratory exposure.

Initial Findings from USDA poultry studies
May-June 2009 study
(11 laying hens, 11 Japanese quail, 11 ducks and 20 turkeys)

In this study, the ARS scientists inoculated the birds in the nasal cavity with 2009 novel human H1N1 virus. The isolate from a human case in Mexico was used because at the time, that was the only strain available to them.

Three days after inoculation, they euthanized some of the birds and examined them for evidence of infection. None of the birds showed any signs of clinical disease. The scientists also took fecal and throat swabs of the birds in this study to see whether any of them were shedding any

virus. The only birds from which they were able to recover low levels of virus were the Japanese quail. Also during that study, the scientists euthanized several birds to look for the presence of the virus in tissues. They did not find any virus in the birds' meat or blood. At the end of the study, antibodies to influenza virus, indicating infection were only found in the quail.

October-November 2009 study
(16 older turkeys that already were producing eggs)

Some of the older birds were inoculated with the Chilean human pandemic H1N1virus through the nasal cavity; some were inoculated rectally; and the virus was directly injected into the uterus of four of the older laying turkeys, because of the historical impact of swine influenza on turkey egg production. Oral and rectal swabs of the birds in the second study were taken prior to infection, and at 2, 4, 7 and 15 days after the birds were infected.

Although final study results are not available yet, the scientists have noted a decline in egg production in the older birds. The most dramatic reduction was seen in the turkeys which received an intrauterine injection of the virus; those birds stopped laying eggs 5 days after inoculation. Egg production declines were intermediate in birds inoculated rectally; even less impact was seen in the turkeys that had been inoculated through the nasal cavity. While the turkeys' ability to produce eggs dropped in rectally and intrauterine inoculated groups, they did not exhibit respiratory signs of illness.

Turkeys Are Vaccinated Against Swine Influenza
In the United States, breeding turkeys are vaccinated against swine influenza because of the known impact of swine influenza on turkey egg production. Meat turkey flocks can become infected, and their immune system can produce antibodies against swine influenza virus, but the birds usually show no signs of disease or mild respiratory disease. In older breeding turkeys, the only obvious sign of disease is the drop in egg production. However, a decline in egg production can be quite costly for producers, so it has become standard industry practice to vaccinate breeding turkeys against swine influenza virus.