



## **OFFLU zoom call for avian influenza global situation update summary**

**8th November 2021**

### **China**

A total of 8 outbreaks since September 2020 of which seven were H5N8 (clade 2.3.4.4b) and one H5N6 (clade 2.3.4.4h). A total of 49,834 swab samples and feces were collected from poultry and wild birds between September 2020 and July 2021 from live poultry markets and farms and slaughterhouses. Through active surveillance 970 different strains of AI were isolated including H5 (164) and H7 (4) subtypes. H5N6 viruses were detected mainly in ducks in live poultry markets and H5N8 viruses were detected in different species of wild birds and also in few ducks, geese in live poultry markets. The control strategy include compulsory vaccination for H5 or H7 and optional immunization for H9N2. Challenge studies indicated that routinely vaccinated chickens and ducks could be completely protected against H5N8 virus challenge. There are plans to update the vaccines. Stamping out policy followed in H5/H7 infected farms. Other info to refer: <http://engine.scichina.com/doi/10.1007/s11427-021-2025-y>; <http://weekly.chinacdc.cn/en/article/doi/10.46234/ccdcw2021.187>

### **Europe and Italy**

2020 – 2021 HPAI detections in Europe was very severe. Virus persistence noticed both in cold and summer seasons in both poultry and wild birds. In the current season, since week 40, 8 countries including Germany, Netherlands, Denmark, Sweden, Estonia, Finland, Poland and Italy reported 87 positive events mainly H5N1 (81) and H5N8 (4). Genetic diversity analyses indicated multiple introductions of viruses and these are related to viruses identified in Russia. Wild bird species involved. Eurasian wigeons are at the top in terms of detection. Seem to be seeing a pattern of virus moving up from Africa to Russia then coming to Europe. Viruses infecting previously are still circulating.

In Italy, H5N1 outbreaks in Turkey farms in densely poultry populated areas. Lots of outbreaks noticed. Most of these outbreaks are H5N1 but different viruses. Healthy wild birds infected with no clinical sign. Even in poultry farms and in broilers were not presenting clinical signs but were positive.

### **UK**

HPAI incursions noticed. H5N1 in three captive birds, small number of poultry (turkeys) and 27 detections in wild birds. Predominantly Anseriforms spilling over into local swan populations. West of Ireland in a peregrine falcon. Distinguishable from Russian viruses but look like north European ones. Some genotype diversity noticed. These look like a recurrence of virus which came last winter. New introductions which came from wild birds are only slightly drifted. Huge diversity in H5N1.

### **Germany**

Highest number of detections in Europe mainly in wild birds. H5N1 virus stable genetically over the summer months and just recently since mid of October increase in variability with more genotypes and more reassortment.

### **Netherlands**

Currently there are 7 outbreaks in poultry holdings. Haven't detected anything yet in healthy wild birds in active surveillance programs but many coming in now and will see different data in next

coming weeks. Increase in bird deaths and increasing numbers of swans and geese found dead in water regions of the Netherlands.

H5N1 sequences from the Netherlands more closely related to Russian viruses than to H5N1 from the Netherlands. Still sequencing in progress and so early to link to the most dominant route of introduction.

### **India**

Outbreaks of HPAI from last week of December 2020 continued until March 2021. Ten Indian states reported HPAI outbreaks in poultry and wild birds. The H5N1 wild bird (Bar-headed goose) virus and the H5N8 chicken and crow viruses belonged to clade 2.3.4.4b, whereas, the HPAI H5N1 chicken virus belong to clade 2.3.2.1a that is genetically similar to those H5N1 viruses circulating in South Asia.

### **Japan**

Last outbreak was March 2021. Fortunately, no H5 detections during the intensive and passive surveillance in Japan.

### **Korea**

H5N1 virus detected in the end of October from mandarin duck which was captured healthy. Long branch lengths in this virus with uncertainty about ancestry. Some similarities HA closer to those seen in Russia. Some segments look much closer to European strains and others look more diverse suggesting reassortment.

### **Australia**

There is a wild bird surveillance program which mostly detecting endemic low pathogenic all H types detected except H14 and H15. Only one of particular interest is over July and August over last year reports of H7 in poultry in Victoria. This is essentially high pathogenic variant of endemic low pathogenic H7 which is seen circulating in wild birds.

### **Kazakhstan**

H5N1 HPAI detected in poultry.

### **Egypt**

H5N8 virus reported in 45 positive cases from the beginning of January 2021 throughout the country in back yard poultry and commercial farms. Live bird markets species affected: chickens, ducks, turkeys, goose, mixed species in live poultry markets. Genetic characterization belong to 2344b. There is no marked change between viruses from this season to last season and they are quite similar but from 2019 there was mutations over the HA gene. Virus is similar to those detected in Europe and Asia for internal genes.

For H5N1, there is no record till now from 2017 till now in Egypt. For H5N2, recently sequenced 2 positive cases from live bird market. The sequences were similar to 2344b like H5N8 and NA was similar to H9N2 and similar to previous viruses isolated from Egypt isolated in 2019 and seems to be national reassortment virus. For H9N2, G1 lineage recorded from mixed species in live poultry markets.

### **Togo**

One case of H5N1 reported.

### **Nigeria**

HPAI waves started in Jan 2021. Started in central part of the country and spread to other regions. Both H5N1 and H5N8 detected although the H5N1 seems to have spread more rapidly. Before that a single detection of H5N6 in a duck in a live bird market. The current outbreaks have been mainly in commercial poultry farms, few waterfowls and also in live bird markets. There was detection of H5N1 and H5N8 in exotic birds which are wildlife that people keep in their houses. All were 2344b which were sequenced at reference lab in Padova. Low pathogenic H9N2 is circulating silently.

## **South Africa**

H5N1. These are related to viruses found through the north of Africa.

## **Botswana**

Detected its first HPAI.

## **Ghana**

Canada has an ongoing OIE twinning project with Ghana. Ghana at the moment is experiencing an outbreak of HPAI due to Gs/Gd lineage H5N8 and H5N1 viruses belonging to 2.3.4.4B clade. Canada is supporting the lab in doing confirmatory testing on samples collected from the outbreak. The outbreak started in the Accra region on July 8, 2021 and now has spread to the rest of the country. Recently one nasal swab collected from a backyard pig was positive for H5N1 (2.3.4.4B) and full genome sequence of the virus showed that it was not different from the poultry viruses circulating in the farm. We have also conducted surveillance work on AI and NDV in domestic poultry and live bird markets throughout the country in 2020/21 in collaboration with university of Accra and Accra Veterinary Services. There seems to be wider spread of G1 lineage H9N2 viruses throughout the country.

## **USA:**

There have been no detections of goose/Guangdong lineage H5 viruses; additional funding provided this year for wild bird surveillance. The majority of viruses characterized from wild birds and all from poultry are of North American lineage and all are of low pathogenicity. Recent events in poultry: H7N3 LPAI from quail in California, H5N2 LPAI in ducks in California, H5N3 LPAI in turkeys in Minnesota. Unrelated H6N1 viruses have been detected in turkeys in Minnesota and from live bird market surveillance in northeastern U.S. and Florida. Increased control efforts are in place to eradicate an H2N2 virus of low virulence (North American lineage) from northeastern live bird markets.

## **Brazil:**

Active surveillance in backyard poultry which are around wild bird sites. Active surveillance in poultry and wild birds: large number of negatives but some detections. Results for serology only. Detecting antibodies for different subtypes H1, H4, H5, H6, H9, H12, H13, H14. No detections of any RNA.

Few countries are doing active surveillance in wild birds: Colombia, Chile and Argentina. In Argentina, antibodies for H3 and H6 found. In Chile, antibodies for H7 were detected. In molecular activity, there are no detections of any RNA nor detecting virus from these populations.

Passive surveillance: Results for different countries: Suspicious cases are being investigated. Serological results: some detections of antibodies for flu A. H13 in backyard poultry. Don't have detections of RNA nor virus big mystery.

## **Colombia and Chile:**

Active surveillance. Serology positive for H7 in Chile. No RNA detections.

## **Argentina**

Active surveillance. Serology positive for H3 and H6. No RNA detections.

## **Canada:**

No incident of HPAI in domestic poultry for 2020-2021. Currently doing active surveillance of AI in waterfowl in different flyways in collaboration with Environment and Climate Change Canada. Detecting some H5 and H7 viruses (North American lineage). The active surveillance work will also continue in 2022).

## **Russia:**

17 regions dominantly affected by HPAI H5N1.

Few cases of H5N5 in wild birds with mass mortality. So expect spread of HPAI to Europe.

