Situation report period covered: 2 December 2022 to 5 January 2023

This report provides an update of the high pathogenicity avian influenza (HPAI) situation, according to the information submitted through the World Animal Health Information System of the World Organisation for Animal Health (WAHIS) between 2 December 2022 to 5 January 2023.

Seasonal trend

Using data reported to the World Organisation for Animal Health (WOAH) between 2005 and 2019 by 76 affected countries and territories for 18,620 outbreaks in poultry, we carried out a Seasonal and Trend decomposition using Loess (STL) analysis to determine the seasonal pattern of the disease (detailed methodology presented in Awada et al., 2018[1]). Based on the data reported to WOAH, spread is lowest in September, begins to rise in October, and peaks in February. Figure 1 shows the global seasonal pattern of HPAI in poultry and the red rectangle indicates where we currently are in the cycle based on the period covered in "recent updates" below.

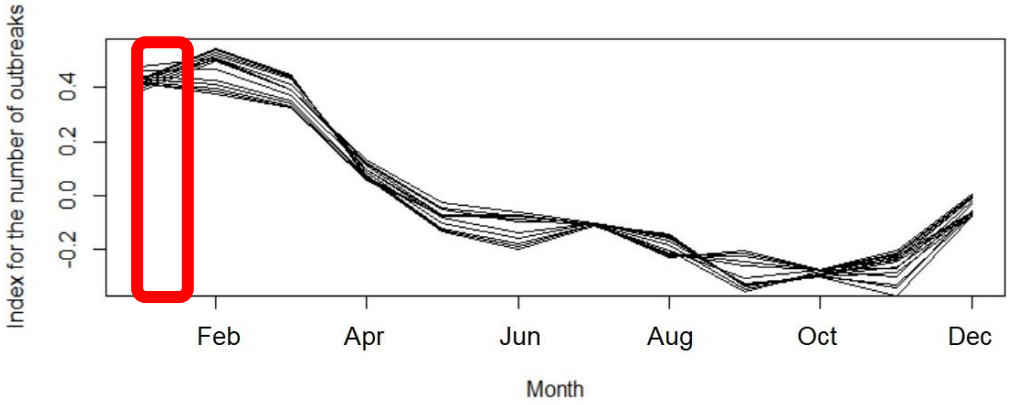

Figure 1. Seasonal trend in global HPAI incidence in poultry

Recent updates (02/12/2022 – 05/01/2023)

To describe the current disease situation of HPAI in poultry and in non-poultry birds, this section covers: (a) a list of new events[2] which started during the 5-week period (reported through immediate notifications); (b) information on events that started before the 5-week period but were still ongoing during that period; (c) the geographic distribution of new outbreaks[3] that started during the 5-week period and d) events which started before the 5-week period but were reported during the 5-week period. The different subtypes of HPAI circulating during the 5-week period are also listed below. This information is based on the immediate notifications and follow-up reports received by WOAH.

HPAI in poultry

New events by world region (reported through immediate notifications)

Africa

H5N1

2 recurrences started in Niger:

- In Tahoua on 14 December 2022
- In Tillabéry on 18 December 2022

Europe

Subtype H5N1

A recurrence started in Germany (Thüringen) on 2 December 2022

Four recurrences started in Poland

[1] Awada L, Tizzani P, Noh SM, Ducrot C, Ntsama F, Caceres P, Mapitse N and Chalvet-Monfray K, 2018. Global dynamics of highly pathogenic avian influenza outbreaks in poultry between 2005 and 2016—focus on distance and rate of spread. Transboundary and Emerging Diseases, 65, 2006–2016. https://doi.org/10.1111/tbed.12986

[2] As defined in Article 1.1.2. of the WOAH Terrestrial Animal Health Code, an "event" means a single outbreak or a group of epidemiologically related outbreaks of a given listed disease or emerging disease that is the subject of a notification. An event is specific to a pathogenic agent and strain, when appropriate, and includes all related outbreaks reported from the time of the initial notification through to the final report. Reports of an event include susceptible species, the number and geographical distribution of affected animals and epidemiological units.

[3] As defined in the glossary of the WOAH Terrestrial Animal Health Code, an "outbreak" means the occurrence of one or more cases in an epidemiological unit.

- In Opolskie on 5 December 2022
- In Kujawsko-Pomorskie and Warmińsko-Mazurskie on 14 December 2022
- In Łódzkie, Lubelskie and Mazowieckie on 15 December 2022
- In Wielkopolskie on 19 December 2022

A recurrence started in Spain (Castilla y León) on 14 December 2022
A recurrence started in Hungary (Hajdú-Bihar) on 18 December 2022
A recurrence started in Denmark (Veterinary Inspection Unit South) on 21 December 2022
A recurrence started in United Kingdom (Isle of Man) on 24 December 2022

Americas, Asia, and Oceania

No new events reported

On-going events for which there were new reported outbreaks, by world region (reported through follow-up reports):

Americas

Subtype H5N1

Canada (Clade: 2.3.4.4b - Lineage: Reassortment Eurasian and North American), Ecuador, Mexico (Clade: 2.3.4.4b - Lineage: Reassortment Eurasian and North American), United States of America

Asia

Subtype H5N1

Israel (Clade 2.3.4.4b; Lineage: Fully Eurasian), Japan, Korea (Rep. of) (Clade: 2.3.4.4b - Lineage: Reassortment Eurasian and North American)

Europe

Subtype H5N1

Belgium, Czech Republic, France, Germany, Hungary, United Kingdom

Africa, and Oceania

No new outbreaks reported in the on-going events, or no on-going events

New outbreaks and associated subtypes

During the period covered by this report, a total of 288 new outbreaks in poultry were reported by 17 countries (Belgium, Canada, Czech Republic, Denmark, Ecuador, France, Germany, Hungary, Israel, Japan, Korea (Rep. of), Mexico, Niger, Poland, Spain, United Kingdom and United States of America). Details are presented in Figures 2 and 3.

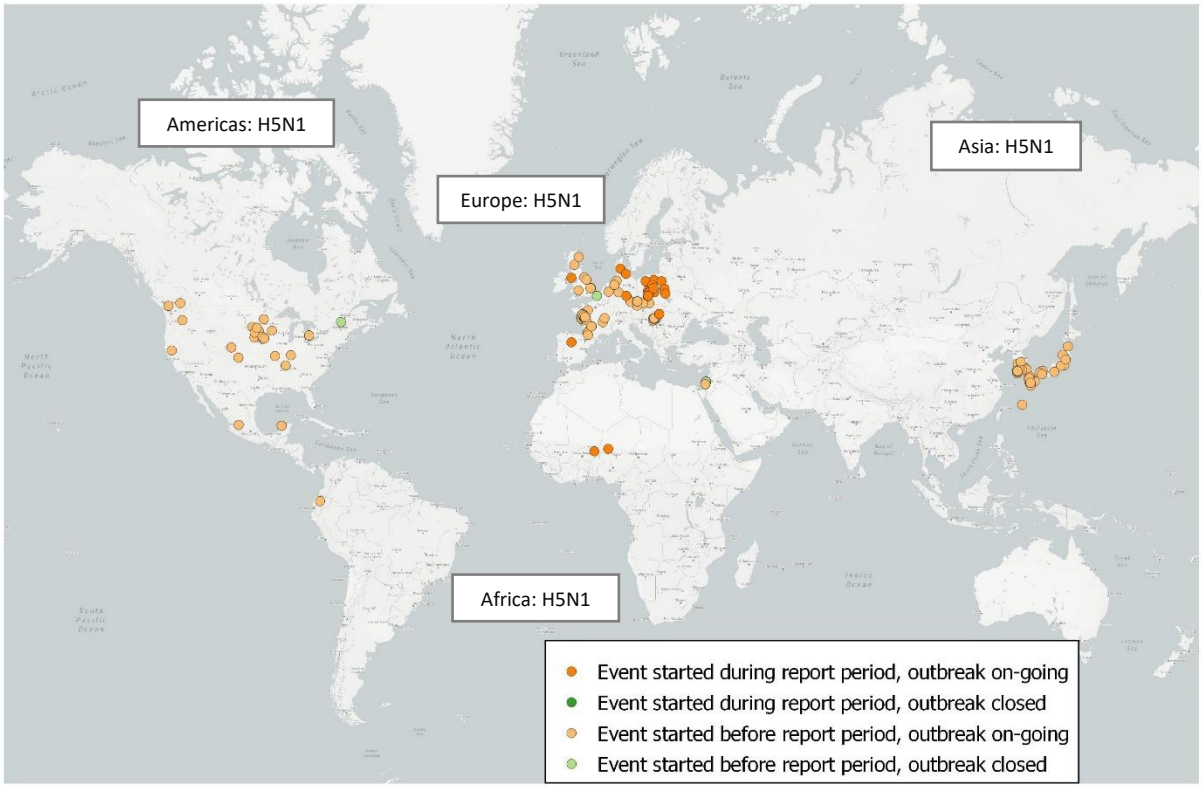

Figure 2. Distribution of HPAI new outbreaks in poultry, and corresponding subtypes

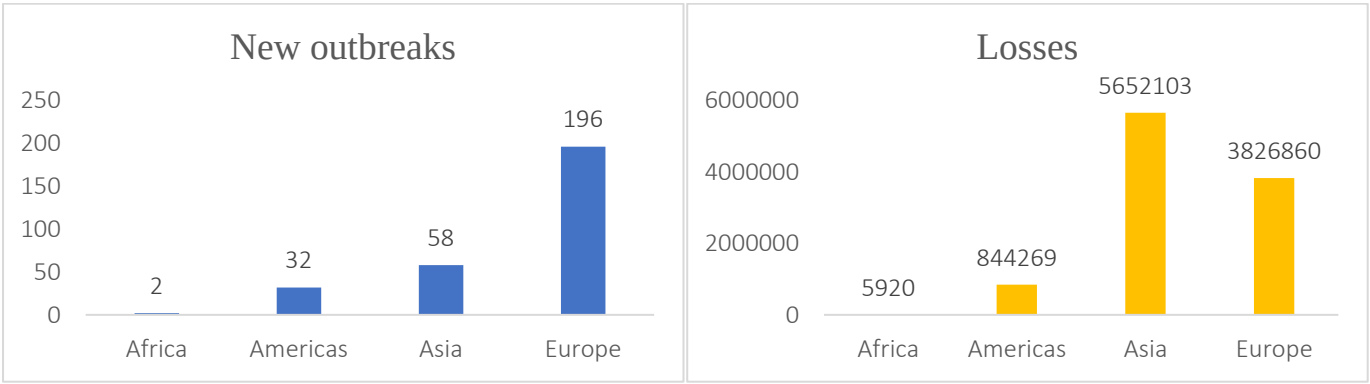

Figure 3. Number of new outbreaks and associated losses by geographical region (losses include animals dead and killed and disposed of within outbreaks – they do not include culling around outbreaks)

Events which started before the 5-week period but were reported during the 5-week period (reported through immediate notifications)

Americas

Subtype H5N1

The detection of a new strain (Clade: 2.3.4.4b - Lineage: Reassortment Eurasian and North American) was reported in Mexico (Chiapas, Chihuahua, Jalisco, México, Nuevo León, Sonora, Yucatán) with a start date on 26 October 2022.

The first occurrence of HPAI in poultry started in Peru (Lambayeque) on 10 November 2022.

Asia

Subtype H5N1

A recurrence (Clade 2.3.4.4b; Lineage: Fully Eurasian) started in Chinese Taipei (Chinese Taipei) on 16 November 2022.

Europe

Subtype H5N1

A recurrence started in Czech Republic (Jihočeský) on 1 December 2022.

A recurrence started in Germany (Sachsen) on 1 December 2022.
Africa, and Oceania
No events reported

HPAI in non-poultry

New events by world region (reported through immediate notifications)

Americas
Subtype H5N1
The first occurrence in the area of Arica y Parinacota in Chile started on 5 December 2022.
The first occurrence in Panama (Panamanian Exclusive Economic Zone) started on 14 December 2022 (Clade 2.3.4.4b - Lineage: Fully Eurasian).
The first occurrence in Honduras (Atlántida) started on 18 December 2022 (Clade 2.3.4.4b - Lineage: Fully Eurasian).
Asia
Subtype pending
A recurrence started in Kazakhstan (Mangghystau) on 20 December 2022.
Subtype H5N1
A recurrence of HPAI subtype H5N1 started in Hong Kong (Yuen Long) on 5 December 2022.
Europe
Subtype H5
The detection of a new strain (H5) was reported in Norway (Troms Og Finnmark) with a start date on 14 December 2022.
Subtype H5N1
An occurrence of HPAI (Clade: 2.3.4.4b - Lineage: Reassortment Eurasian and North American) in an unusual host (cat) was reported in France (Nouvelle-Aquitaine) with a start date on 20 December 2022.
Africa, and Oceania
No new events reported

On-going events for which there were new reported outbreaks, by world region (reported through follow-up reports):

Americas
Subtype H5N1
Colombia (Clade: 2.3.4.4b - Lineage: Reassortment Eurasian and North American), United States of America
Asia
Subtype H5N1
Israel (Clade 2.3.4.4b - Lineage: Fully Eurasian), Japan
Europe
Subtype H5N1
Austria (Clade 2.3.4.4b - Lineage: Fully Eurasian), Belgium, Denmark (Clade 2.3.4.4b - Lineage: Fully Eurasian), France, Hungary, Ireland, Italy, Netherlands, Poland, Romania, Slovenia (Clade 2.3.4.4b - Lineage: Fully Eurasian), Sweden, Switzerland, United Kingdom
Africa, and Oceania
No new outbreaks reported in the on-going events, or no on-going events.

New outbreaks

During the period covered by this report, a total of 139 outbreaks in non-poultry were reported by 24 countries and territories (Austria, Belgium, Chile, Colombia, Denmark, France, Honduras, Hong Kong, Hungary, Ireland, Israel, Italy, Japan, Kazakhstan, Netherlands, Norway, Panama, Poland, Romania, Slovenia, Sweden, Switzerland, United Kingdom, United States of America). Details are presented in Figures 4 and 5.

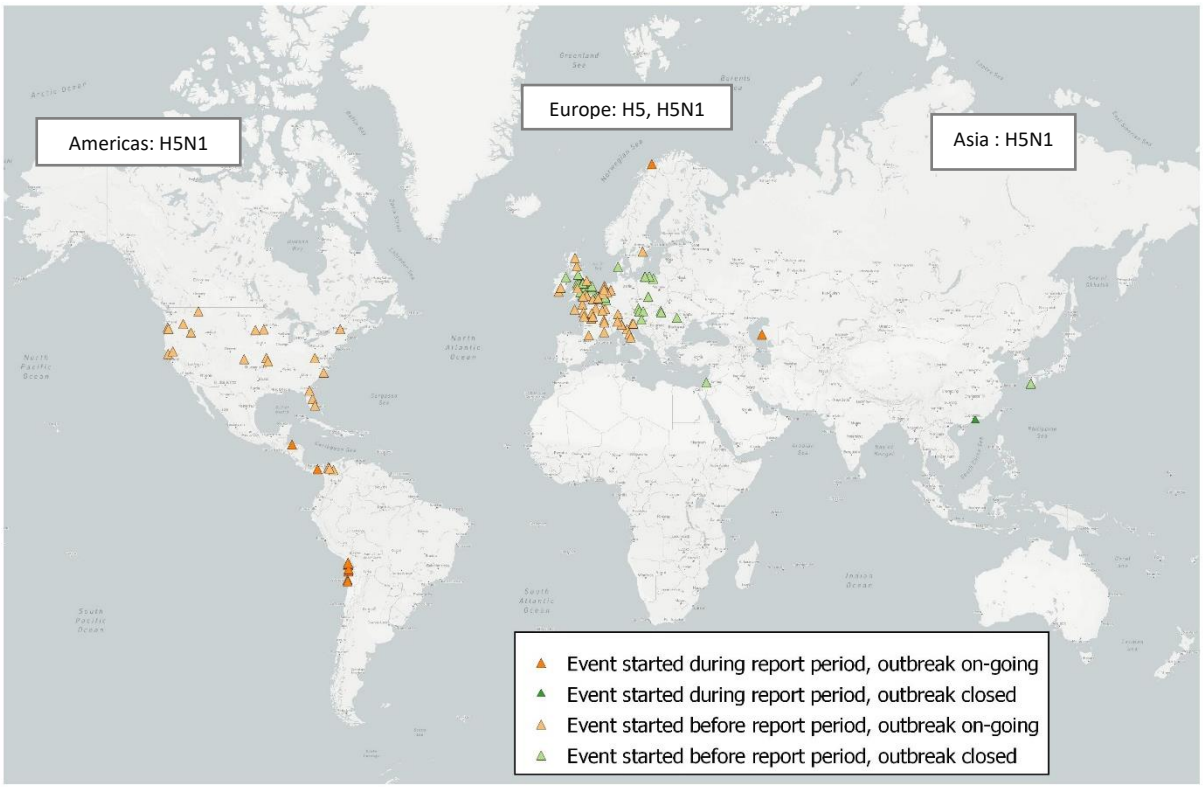

Figure 4. Distribution of HPAI new outbreaks in non-poultry birds, and corresponding subtypes.

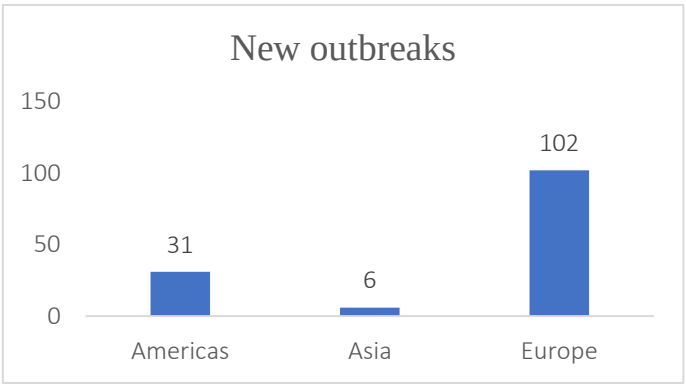

Figure 5. Number of new outbreaks by geographical region

Events which started before the 5-week period but were reported during the 5-week period (reported through immediate notifications)

Americas

Subtype H5

The detection of a new strain (H5) was reported in Canada (Alberta, British Columbia, Manitoba, Newfoundland and Labrador, Nova Scotia, Ontario, Québec) with a start date on 6 April 2022.

Subtype H5N1

The first occurrence started in Venezuela (Venezuelan Exclusive Economic Zone) on 17 November 2022 (Clade: 2.3.4.4b - Lineage: Reassortment Eurasian and North American).

The first occurrence started in Greenland (Greenlandic Exclusive Economic Zone) on 28 March 2022.

Asia

Subtype H5

A recurrence of H5 started in Japan (Niigata) on 21 October 2022

Subtype H5N1

The detection of a new strain (H5N1) was reported in Cyprus (Famagusta, Nicosia) with a start date on 24 November 2022.

A recurrence started in Israel (HaZafon) on 27 November 2022 (Clade 2.3.4.4b - Lineage: Fully Eurasian).
Europe
Subtype H5N1
A recurrence started in Russia (Rostov) on 1 December 2022.
Africa, and Oceania
No events reported

Epidemiological background

High pathogenicity avian influenza (HPAI) is caused by influenza A viruses in the family Orthomyxoviridae. Since its identification in China (People's Rep. of) in 1996, there have been multiple waves of intercontinental transmission of the H5Nx Gs/GD lineage virus. HPAI has resulted in the death and mass slaughter of more than 316 million poultry worldwide between 2005 and 2021, with peaks in 2021, 2020 and 2016. During each of the years 2006, 2016, 2017 and 2021, more than 50 countries and territories in the world were affected with HPAI. In addition, up to now, humans have occasionally been infected with subtypes H5N1 (around 870 cases reported, of which half died), H7N9 (around 1,500 cases reported, of which about 600 died), H5N6 (around 80 cases reported, of which about 30 died), H9N2 (around 80 cases reported, of which 2 died) and sporadic cases have been reported with subtypes H3N8, H7N4, H7N7 and H10N3[4,5,6,7,8].

Key messages

The current HPAI epidemic season continues with about 290 outbreaks being reported in poultry and about 140 in non-poultry birds over the 5 weeks covered by the report, mainly in Europe, and also in the Americas, Asia and Africa. Many of the countries in these regions are experiencing a larger number of outbreaks compared to last year's wave at the same time. Outbreaks are also spreading further to Central and South America countries. It is worth highlighting the first occurrence of HPAI in Panama, Honduras, Venezuela and the recurrence in Chile after 20 years of absence, all in non-poultry birds. In Peru, the disease was reported in poultry during the period covered by this report (in addition to non-poultry previously reported). Over 10 million birds died or were culled worldwide during the 5 weeks period. The predominant subtype noticed in the current epidemic season is still subtype H5N1. On 10 January 2023, Ecuador reported its first case of human transmission of avian influenza[9]. Based on the HPAI seasonal pattern, the number of outbreaks in animals is expected to reach its peak in the coming months. The World Organisation for Animal Health (WOAH) recommends that countries maintain their surveillance efforts, biosecurity measures at farm level, and continue timely reporting of avian influenza outbreaks in both poultry and non-poultry species. High quality of information is key to support early detection and rapid response to potential threats to both animal and public health.

Visit our website for more information on avian influenza. For any press inquiry on the disease, you can email us at **media@woah.org**

Other relevant resources

- WHO, Human infection with avian influenza A(H5) viruses
- World Organisation for Animal Health (WOAH), Self-declared Disease Status
- World Animal Health Information System (WAHIS)
- Influenza at the human-animal interface summary and assessment, January 2023
- One health Joint plan of action (2022 – 2026)
- 30th Conference of the Regional Commission for Europe, Catania, Italy, October 2022
- OFFLU AI situation update (December 2022)
- First meeting of the Standing Group of Experts on Avian Influenza, Americas
- Epidemiological Alert Outbreaks of avian influenza and human infection caused by influenza A(H5) public health implications in the Region of the Americas
- OFFLU avian influenza VCM report for WHO vaccine composition meetings (September 2022)

[4] Chen H. 2019. H7N9 viruses. Cold Spring Harb Perspect Med doi: 10.1101/cshperspect.a038349
[5] WHO. Influenza (Avian and other zoonotic), 2018, available at https://www.who.int/news-room/fact-sheets/detail/influenza-(avian-and-other-zoonotic)
[6] WHO. Cumulative number of confirmed human cases for avian influenza A(H5N1) reported to WHO, 2003-2022, 25 November 2022, available at https://cdn.who.int/media/docs/default-source/influenza/human-animal-interface-risk-assessments/2022_nov_tableh5n1.pdf?sfvrsn=babfcad1_1&download=true
[7] Yang L, Zhu W, Li X, Chen M, Wu J, Yu P, Qi S, Huang Y, Shi W, Dong J, Zhao X, Huang W, Li Z, Zeng X, Bo H, Chen T, Chen W, Liu J, Zhang Y, Liang Z, Shi W, Shu Y, Wang D. 2017a. Genesis and spread of newly emerged highly pathogenic H7N9 avian viruses in mainland China. J Virol doi: https://doi.org/10 .1128/JVI.01277-17
[8] WHO, Avian Influenza Weekly Update Number 877, https://www.who.int/docs/default-source/wpro---documents/emergency/surveillance/avian-influenza/ai_20230106.pdf?sfvrsn=5f006f99_108
[9] REUTERS, Ecuador confirms first human bird flu infection in 9-year-old girl, https://www.reuters.com/world/americas/ecuador-confirms-first-human-bird-flu-infection-9-year-old-girl-2023-01-11/#:~:text=QUITO%2C%20Jan%2010%20(Reuters),declared%20an%20animal%20health%20emergency.