

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 ([OIE-WAHIS](#)) between 18 November and 8 December 2021.

Seasonal trend

Using data reported to the OIE between 2005 and 2019 by 76 affected countries and territories for 18,620 outbreaks in poultry, we used a Seasonal and Trend decomposition using Loess (STL) analysis to determine the seasonal pattern of the disease (detailed methodology presented in Awada et al., 2018⁵). Based on the data reported to the OIE, 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.

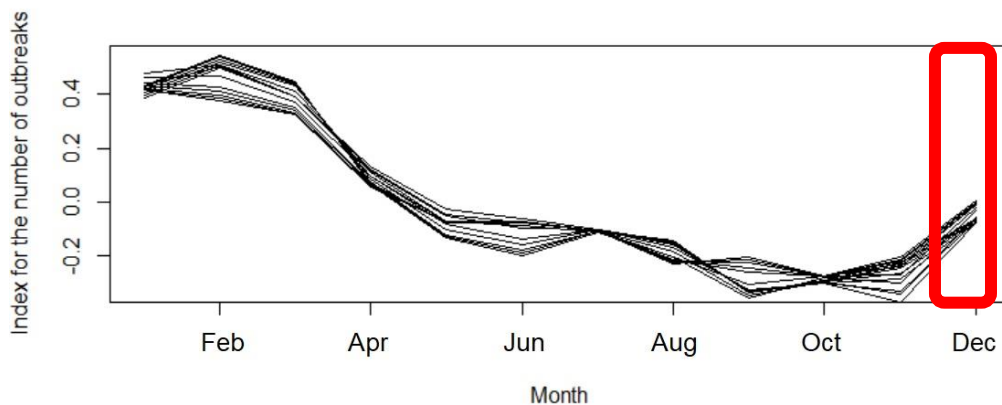


Figure 1. Seasonal trend in global HPAI incidence in poultry

Recent updates (18/11/2021 – 08/12/2021)

To describe the current disease situation of HPAI in poultry and in non-poultry birds, this section covers: (a) a list of new events¹ which started during the 3-week period (reported through immediate notifications); (b) information on events that started before the 3-week period but were still ongoing during that period; and (c) the geographic distribution of new outbreaks² that started during the 3-week period, outbreaks that started before the 3-week period but were still ongoing during that period. The different subtypes of HPAI circulating during the 3-week period are also listed below. This information is based on the immediate notifications and follow-up reports received by the OIE.

HPAI in poultry

New events by world region (reported through immediate notifications)

Europe

Subtype pending

A recurrence started in Bulgaria (Pazardzhik) on 1 December 2021.

Subtype H5

A recurrence started in Russia (Stavropol') on 1 December 2021.

Subtype H5N1

A recurrence started in Croatia (Sisacko-Moslavacka) on 18 November 2021.

A recurrence started in Ireland (Monaghan) on 19 November 2021.

4 recurrences started in Hungary:

- In Békés on 19 November 2021,

¹ As defined in [Article 1.1.2.](#) of the OIE 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.

² As defined in the [glossary](#) of the OIE Terrestrial Animal Health Code, an “outbreak” means the occurrence of one or more cases in an epidemiological unit.

- In Csongrád on 20 November 2021,
- In Szabolcs-Szatmár-Bereg on 22 November 2021, and
- In Hajdú-Bihar on 22 November 2021.

A recurrence started in Slovakia (Trnavský) on 19 November 2021.

A recurrence started in France (Hauts-de-France) on 21 November 2021.

2 recurrences started in Germany:

- In Bayern on 30 November 2021, and
- In Thüringen on 1 December 2021.

A recurrence started in Belgium (Vlaanderen) on 3 December 2021.

Africa, 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):

Africa

Subtype H5N1

Nigeria

Asia

Subtype H5

Pakistan

Subtype H5N1

Israel, Japan, Korea (Rep. Of)

Subtype H5N5

Iran

Europe

Subtype pending

Bulgaria

Subtype H5N1

Czech Republic, Germany, Hungary, Italy, Netherlands, Poland, Switzerland, United Kingdom

Americas 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 181 new outbreaks in poultry were reported by 21 countries (Belgium, Bulgaria, Croatia, Czech Republic, France, Germany, Hungary, Iran, Ireland, Israel, Italy, Japan, Korea (Rep. of), Netherlands, Nigeria, Pakistan, Poland, Russia, Slovakia, Switzerland, United Kingdom). Details are presented in Figures 2 and 3.

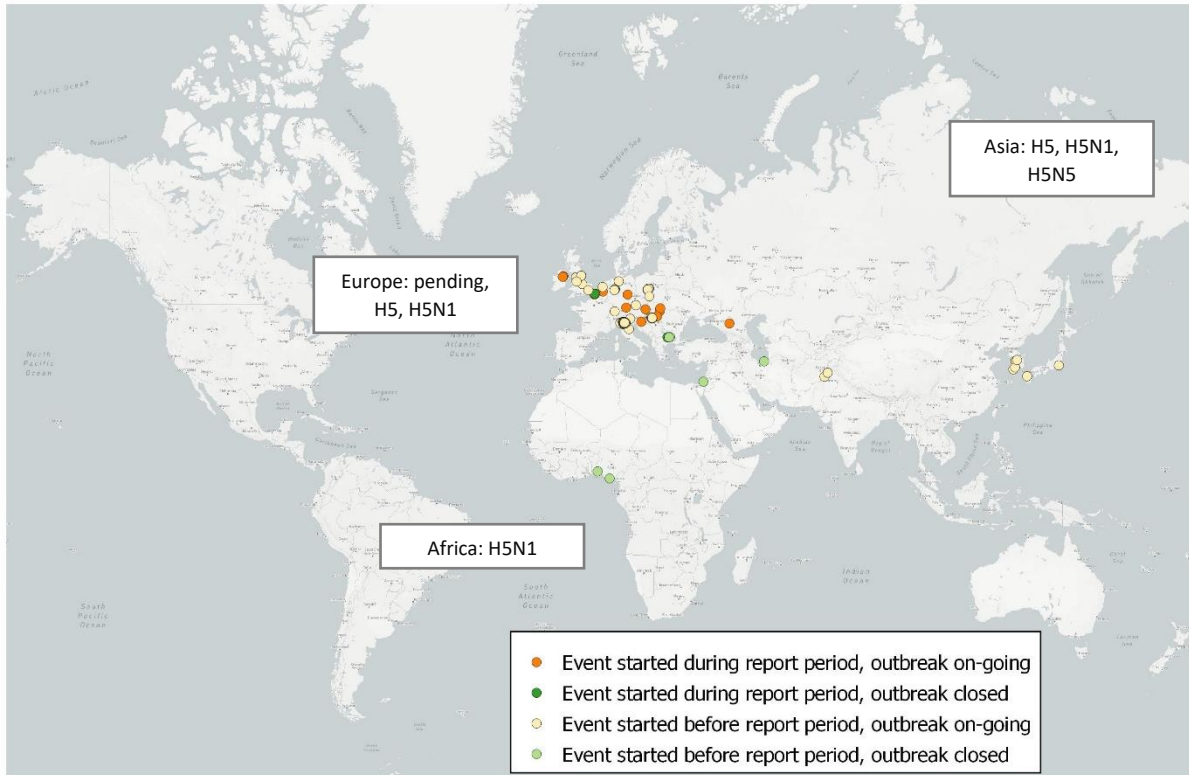


Figure 2. Distribution of HPAI new outbreaks in poultry, and corresponding subtypes

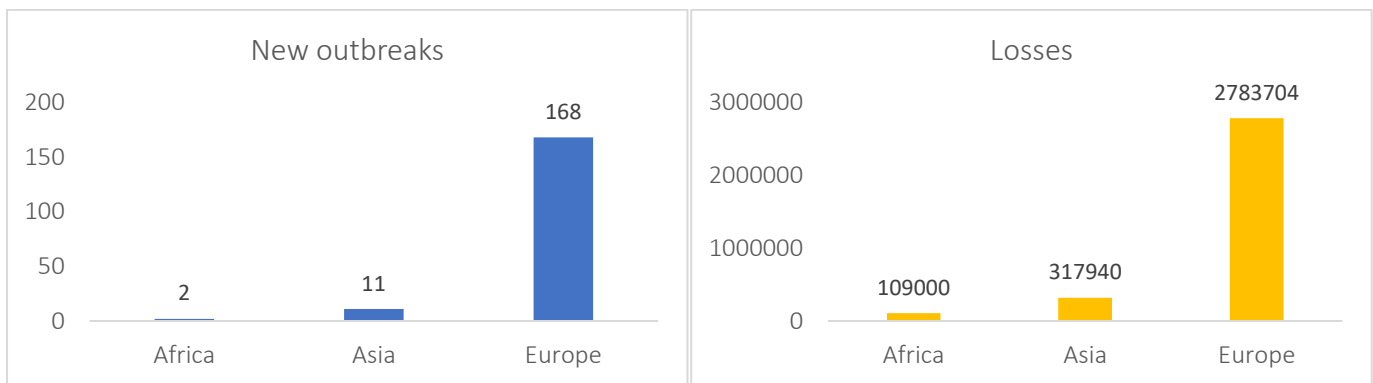


Figure 3. Number of new outbreaks and associated losses by geographical region (losses include animals dead and killed and disposed of)

HPAI in non-poultry

New events by world region (reported through immediate notifications)

Asia

Subtype H5N1

The first occurrence of H5N1 started started in Hebei in China (People's Rep. of) on 20 November 2021. A recurrence started in Israel (HaMerkaz) on 29 November 2021.

Subtype H5N8

A recurrence started in Japan (Kagoshima) on 19 November 2021. A recurrence started in Iran (Markazi and Mazandaran) on 25 November 2021. A recurrence started in India (Madhya Pradesh) on 28 November 2021.

Europe

Subtype H5

2 recurrences started in Russia:

- In Kaliningrad on 18 December 2021, and
- In Kursk on 22 November 2021.

A recurrence started in Hungary (Zala) on 22 November 2021.

A recurrence started in Austria (Niederösterreich) on 23 November 2021.

A recurrence started in Switzerland (Zürich) on 23 November 2021.

Subtype H5N1

2 recurrences started in Slovakia:

- In Trnavský on 24 November 2021, and
- In Banskobystrický on 24 November 2021,

A recurrence started in Germany (Nordrhein-Westfalen) on 26 November 2021.

A recurrence started in Luxembourg (Grevenmacher) on 27 November 2021.

The first occurrence of H5N1 started started in Setúbal in Portugal on 30 November 2021.

Africa, Americas, and Oceania

No new events reported

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

Asia

Subtype H5N1

India

Europe

Subtype H5

Russia

Subtype H5N1

Belgium, Croatia, Czech Republic, Estonia, France, Germany, Ireland, Italy, Netherlands, Poland, Romania, Sweden, United Kingdom

Subtype H5N8

Netherlands

Africa, Americas, 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 107 outbreaks in non-poultry were reported by 25 countries (Austria, Belgium, China (People's Rep. of), Croatia, Czech Republic, Estonia, France, Germany, Hungary, India, Iran, Ireland, Israel, Italy, Japan, Luxembourg, Netherlands, Poland, Portugal, Romania, Russia, Slovakia, Sweden, Switzerland, United Kingdom). Details are presented in Figures 4 and 5.

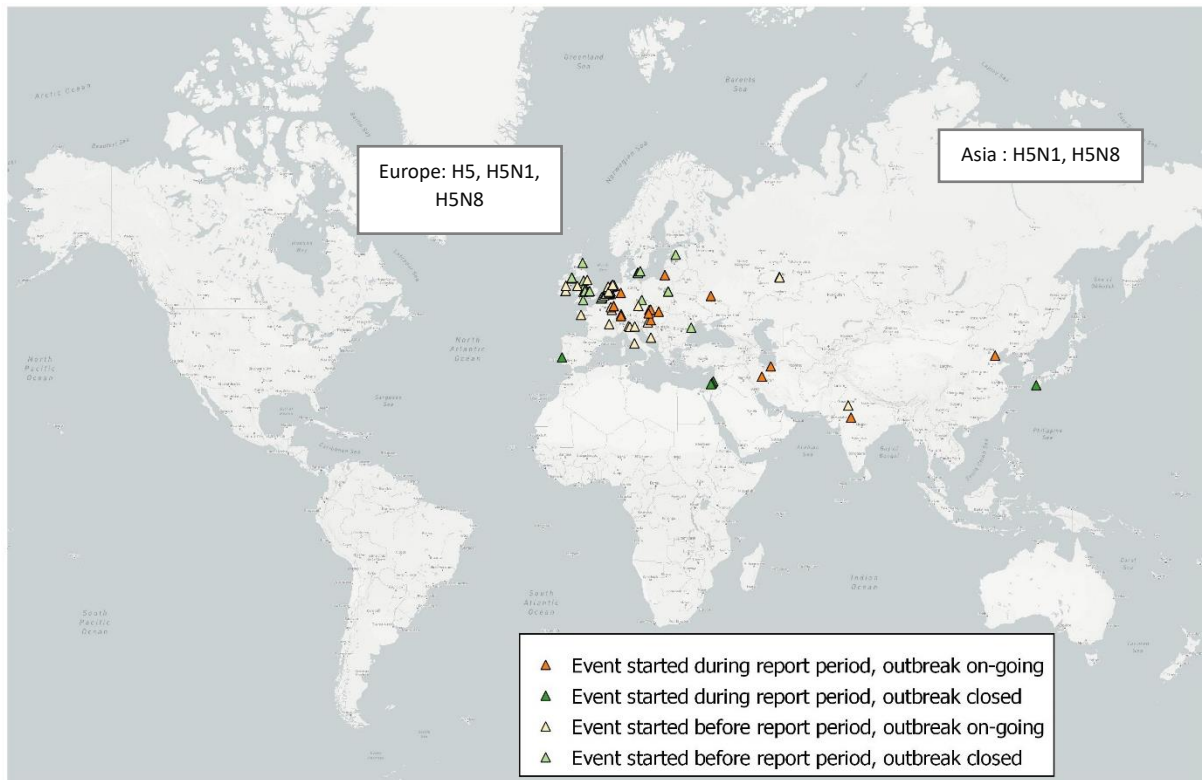


Figure 4. Distribution of HPAI new outbreaks in non-poultry birds, and corresponding subtypes.

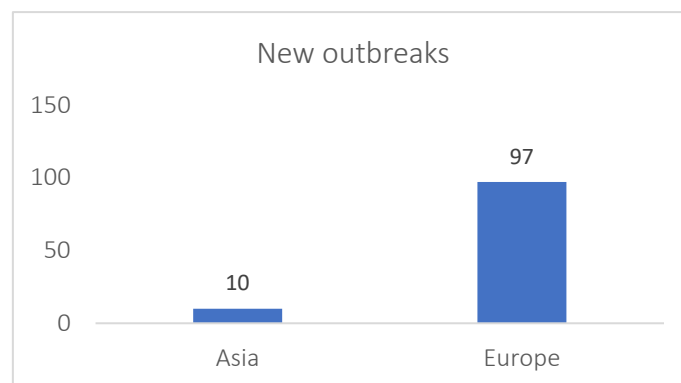


Figure 5. Number of new outbreaks by geographical region

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 four waves of intercontinental transmission of the H5Nx Gs/GD lineage virus:

- 1) in 2005-2006, H5N1 clade 2.2 virus involving Africa, Asia and Europe;
- 2) in 2009-2010, clade 2.3.2.1c virus affecting Asia and Europe;
- 3) in 2014-2015, at the same time clade 2.3.4.4a H5N8 virus as well as clade 2.3.2.1c H5N1 virus involving Africa, Asia, and Europe ; and
- 4) in 2016-2017, 2.3.4.4b H5Nx clade also involving Africa, Asia, and Europe^{3,4}.

³ Lee D.H., Ferreira Criado M. & Swayne D.E (2021). Pathobiological Origins and Evolutionary History of Highly Pathogenic Avian Influenza Viruses, Cold Spring Harb Perspect Med 2021;11:a038679

⁴ Sims L., Harder T.C., Brown I.H., Gaidet N., Belot G., Von Dobschuetz S., Kamata A., Kivaria F.M., Palamara E., Bruni M., Dauphin G., Raizman E., Lubroth J. 2017. Highly pathogenic H5 avian influenza in 2016 and early 2017 - observations and future perspectives. Rome : FAO, 16 p. (Empres Focus On, 11)

HPAI has resulted in the death and mass slaughter of more than 246 million poultry worldwide between 2005 and 2020, with peaks in 2006 and 2016. During these two particular years, about a quarter of the world's countries were affected with HPAI⁵. In addition, up to now, humans have occasionally been infected with subtypes H5N1 (around 850 cases reported, of which half died), H7N9 (around 1,500 cases reported), H5N6 (around 50 cases reported, of which half died) and sporadic cases have been reported with subtypes H7N7 and H9N2^{6,7,8,9,10}.

Key messages

The current HPAI epidemic season continues with a high number of outbreaks in poultry and non-poultry reported in Europe, and also in a few countries in Africa and Asia over the 3 weeks covered by the report. Most of them are due to the subtype H5N1. This indicates a possible introduction and spread of the virus through current wild bird migration. The increased number of notifications reflects the annual seasonal pattern of HPAI cases. Based on this known pattern, further increase in HPAI spread is expected in several regions in the coming months. In addition, an increase in the number of human cases infected with H5N6 subtype viruses has recently been observed in China (People's Rep. of) for which the World Health Organization (WHO) published a risk assessment. In this context, the World Organisation for Animal Health (OIE) urges countries to intensify surveillance efforts, implement strict biosecurity measures at farm level to prevent the introduction of the disease, continue timely reporting of avian influenza outbreaks in both poultry and non-poultry species, and maintain the high quality of the information provided to support early detection and rapid response to potential threats to both animal and public health.

Other relevant resources

- [OFFLU avian influenza statement](#)
- WHO, [Human infection with avian influenza A\(H5\) viruses](#)
- [The World Organisation for Animal Health calls for increased surveillance of avian influenza as outbreaks in poultry and wild birds intensify – Press release](#)
- WHO 2021, Assessment of risk associated with highly pathogenic avian influenza A(H5N6) virus
- OFFLU avian influenza report September [2021](#)
- World Organisation for Animal Health (OIE), [Self-declared Disease Status](#)
- OIE World Animal Health Information System ([OIE-WAHIS](#))

⁵ 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>

⁶ Chen H. 2019. H7N9 viruses. *Cold Spring Harb Perspect Med* doi: 10.1101/cshperspect.a038349

⁷ WHO. Influenza (Avian and other zoonotic), 2018, available at [https://www.who.int/news-room/fact-sheets/detail/influenza-\(avian-and-other-zoonotic\)](https://www.who.int/news-room/fact-sheets/detail/influenza-(avian-and-other-zoonotic))

⁸ WHO. Cumulative number of confirmed human cases for avian influenza A(H5N1) reported to WHO, 2003-2021, 21 May 2021, available at [https://www.who.int/publications/m/item/cumulative-number-of-confirmed-human-cases-for-avian-influenza-a\(h5n1\)-reported-to-who-2003-2021-21-may-2021](https://www.who.int/publications/m/item/cumulative-number-of-confirmed-human-cases-for-avian-influenza-a(h5n1)-reported-to-who-2003-2021-21-may-2021)

⁹ 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>

¹⁰ https://www.who.int/docs/default-source/wpro---documents/emergency/surveillance/avian-influenza/ai_20211105.pdf?sfvrsn=5f006f99_62