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Self-declaration for the recovery of country freedom from infection with high pathogenicity avian influenza viruses (HPAI) in poultry by Hungary

Self-declaration sent to the OIE on 19 July 2021 by Dr Lajos Bognár, OIE Delegate for Hungary, Ministry of Agriculture, Hungary.

1. Introduction

The objective of this declaration is the recovery of self-declared freedom from infection with high pathogenicity avian influenza viruses (HPAI) in accordance with the provisions of Article 10.4.6. of the OIE Terrestrial Animal Health Code, 2021 (*Terrestrial Code*). The self-declaration covers the whole country and describes the HPAI-events in poultry that occurred in Hungary from January to April 2021. In accordance with the contents of the corresponding resolution adopted at the 88th General Session of the OIE, the starting date of the self-declared avian influenza free status is 10 June 2021.

2. Avian influenza situation in Hungary

On 6 January 2021, the Hungarian National Reference Laboratory (NRL) for avian influenza detected the presence of HPAI (H5N8 subtype) in two fattening turkey holdings (a primary and a secondary outbreak) in Komárom-Esztergom county¹. This was the first detection of HPAI in 2021 in Hungary.

At the same time, a HPAI subtype H5N8 case in a wild bird was confirmed in Komárom-Esztergom county² in a great egret (*Ardea alba*) found about 25 km far from the affected holdings. In Komárom-Esztergom county all restrictions were lifted as of 17 February.

On 14 January another primary outbreak of HPAI subtype H5N8 was confirmed in Bács-Kiskun county³ in a laying hen holding. On 3 February, further three secondary outbreaks were confirmed in laying hen holdings within the area of 1 km radius of the primary outbreak. As the virus did not spread further, all restrictions were lifted as of 8 March.

¹ <https://wahis.oie.int/#/report-info?reportId=16782>

² <https://wahis.oie.int/#/report-info?reportId=16743>

³ <https://wahis.oie.int/#/report-info?reportId=17068>

On 8 March three more wild bird cases were confirmed. A dead white-tailed eagle (*Haliaeetus albicilla*) was found in Somogy county⁴ and HPAI subtype H5N5 was confirmed. Two dead mute swans (*Cygnus olor*) were found in Csongrád-Csanád county⁵ and HPAI subtype H5N8 was confirmed.

On 13 April, a primary outbreak of HPAI (subtype H5N1) was confirmed in Hajdú-Bihar county⁶ in a breeding turkey holding. Restrictions were lifted as of 16 May.

This was the last HPAI outbreak in 2021. The stamping out and final cleaning and disinfection was completed on 13 May 2021.

Before these outbreaks, Hungary had been free from infection with avian influenza (AI) in poultry since 8 September 2020, when Hungary regained its free status of infection with high pathogenicity avian influenza viruses (HPAI). Low pathogenic avian influenza has not been detected.

Table 1: Number of affected holdings and birds by species

Species	Number of holdings	Number of birds
Turkey	3	96 194
breeding turkey	1	11 769
fattening turkey	2	84 425
Chickens (laying hen)	4	211 984
Total	7	308 178

Table 2: Number of outbreaks by county

County	Number of outbreaks
Bács-Kiskun	4
Hajdú-Bihar	1
Komárom-Esztergom	2
Total	7

Fig 1. Location of HPAI outbreaks in poultry in Komárom-Esztergom and Bács-Kiskun counties

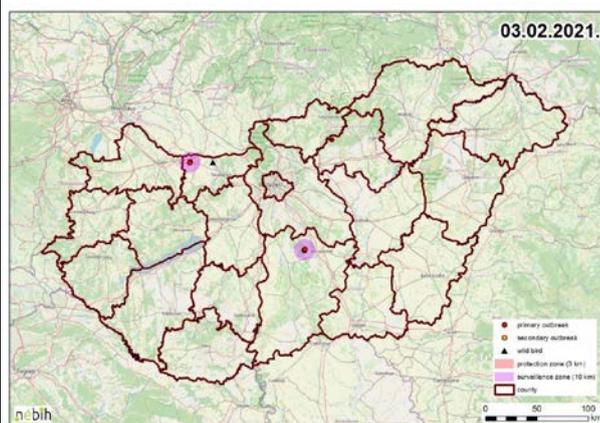
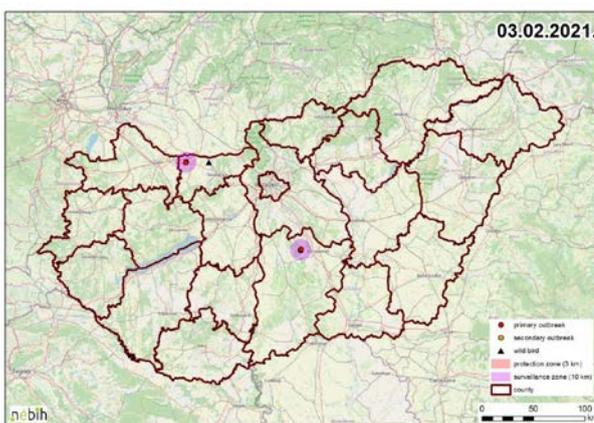


Fig 2. Location of HPAI outbreaks in poultry in Hajdú-Bihar county and location of wild birds cases



3. Surveillance and early detection system

Awareness-raising campaigns are conducted regularly for notifiable diseases. We continuously monitor the epidemic situation in the world and already launched our latest campaign of such when HPAI was detected in Europe in October 2020. During the epidemic, numerous communiques, articles, radio and TV

⁴ <https://wahis.oie.int/#/report-info?reportId=30561>

⁵ <https://wahis.oie.int/#/report-info?reportId=30559>

⁶ <https://wahis.oie.int/#/report-info?reportId=31977>

interviews took place with special emphasis on social media platforms. All information on AI is available and constantly updated on the website of the National Food Chain Safety Office (<https://portal.nebih.gov.hu/madarinfluenza>).

Avian influenza is a notifiable disease in Hungary. Animal keepers, veterinarians and anybody handling animals (e.g. transporters) should notify any illness or death of their animals to the veterinary authority. This obligation is detailed in Act No. XLIV of 2008⁷ on Food chain and its official supervision. A list of suspect signs is laid down in Decree No. 143/2007 of the Minister of Agriculture and Rural Development on the detailed rules on protection against AI. These signs include: more than 20% of reduction in water intake and food consumption; egg drop of at least 5% for more than 2 days; more than 3% mortality for one week and any clinical or pathological signs that can be associated with AI. Notifications are motivated by the 100% state compensation paid for the dead and killed animals.

Active surveillance in poultry (large and small scale) and passive surveillance in wild birds have been carried out since 2005 (Table 3).

The Hungarian Avian Influenza surveillance programme is based on representative sampling, therefore all counties' authorities (19) take part in the sampling.

The number of poultry holdings to be sampled corresponds to those in Tables 1 and 2 of Annex I of European Commission Decision 2010/367/EC of 25 June 2010⁸. Each county is involved in sampling, and the number of samples depends on the number and category of its poultry holdings. The number of samples are set out and controlled by the Animal Health and Animal Welfare Directorate of the National Food Chain Safety Office (as the central competent authority).

Local authorities should determine which holding will be sampled. Elements such as the location of the holding and its proximity to wetlands should be considered.

Sampling is carried out by veterinarians. Blood samples are collected from poultry for serological investigations according to the number fixed by the Central Authority for each county. Each concerned holding is sampled once throughout the year in case of negative results. Diagnostic method is haemagglutination-inhibition test (HI) to detect H5 and H7 in accordance with Chapter 3.3.4. of the OIE Manual of Diagnostic Tests and Vaccines for Terrestrial Animals (*Terrestrial Manual*). Positive reactors to HI are followed by a PCR test to confirm or rule out the infection. None of the samples taken in the framework of routine active surveillance have been positive. (See Table 3.)

Table 3. Routine active surveillance^{*} of poultry, Hungary, 1 October 2020 – 10 June 2021 (before, during and after the epidemic)

Period	Holdings	Samples
1 October 2020 – 5 January 2021	657	7 811
6 January – 13 May 2021	24	520
14 May– 10 June 2021	7	160

^{*} According to Commission Decision 2010/367/EC

The surveillance programme for avian influenza in wild birds (Table 4) is implemented in the whole country, considering that almost in every county there are either wetlands, lakes, rivers or backwaters as typical habitats for migratory wild birds, in particular water birds, as target species. Passive surveillance is

⁷ [Act. No. XLIV of 2008](#)

⁸ European Commission Decision 2010/367/EC of 25 June 2010: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010D0367&from=FR>

in force, moribund or dead birds are collected for virological examination. Every year the sample size is reviewed.

Passive surveillance is targeted on birds belonging to the so-called “higher risk” species listed in Annex II of Decision 2010/367/EC, other wild birds living in close proximity to these species and also on wild birds at risk of coming in close contact with domestic poultry holdings. Veterinarians or hunters are responsible for the implementation of the sampling. Bird watchers, ornithologists, hunters or anyone who discovers a dead or moribund bird shall deliver it to the competent authority, *i.e.* the competent veterinarians. From 11 November 2020, the National Parks also participate in the search of dead wild birds. Oropharyngeal/tracheal or cloacal swab samples, tissues or corpses are sent by the competent authority immediately to NRL for virological examination. In November 2020, due to increasing risk, the veterinary authority requested BirdLife Hungary (a leading non-profit, apolitical, and charitable, nature conservation organisation in Hungary) to cooperate in active monitoring of wild birds (oropharyngeal/tracheal or cloacal swab samples from live wild birds during bird-ringing). The diagnostic method is PCR in accordance with Chapter 3.3.4. of the *Terrestrial Manual*. (See Table 4.)

Table 4. Active and passive surveillance of wild birds* Hungary, 1 October 2020 – 10 June 2021 (before, during and after the epidemic)

Period	Number of wild birds	Positive wild birds	Negative wild birds
1 October 2020 – 5 January 2021	428	0	428
6 January – 13 May 2021	1 033	4	1 029
14 May– 10 June 2021	33	0	33

* According to European Commission Decision 2010/367/EC.

4. Epidemiological investigations

From Hajdú-Bihar county, in all cases where hatching eggs and day-old chicks were transported during the 21 days before the development of clinical symptoms to other countries, notification was done immediately after the detection of the outbreaks.

The results of epidemiological investigations suggested that for the first outbreaks, the source of infection was likely to be wild birds.

In Komárom-Esztergom county, both poultry and the wild bird sample found nearby shows 100% similarity with Croatian and Swedish samples from November 2020 (A/Turkey/Sweden/ SVA201114SZ0001/20KN303106/2020 and A/turkey/Croatia/104/2020) on the HA gene on a 500 base pair section. Regarding to the secondary outbreak, the holding is in 1 km area of the first affected holding and the symptoms began later. Most likely the virus spread to the holding from the first affected holding.

In Bács-Kiskun county the HPAI strain of the last outbreak in 2020 differs in 3 nucleotides from the HPAI strain of the first outbreak in 2020. The HPAI strains in 2021 are similar and differ in 1 nucleotide from the HPAI strain of the last outbreak in 2020, the similarity is 99.94%. Regarding the secondary outbreaks, the holdings were within the 1 km area of the first affected holding and the windy weather could help the spreading of the virus.

In Hajdú-Bihar county, the holding was near the resting area of wild birds (Ramsar site). The strain showed 99.8% similarity with A/Eurasian Wigeon/Netherlands/5/2020 (A/H5N1) strain on gene H5 (638 bp) and 100% similarity on N1 gene (full length, 1360 bp).

5. Control and eradication measures

Control and eradication activities were carried out by the veterinary authority.

Procedures and measures implemented during the outbreaks were based on Council Directive 2005/94/EC on community measures for the control of AI and – from 21 April 2021 – Commission Delegated Regulation (EU) 2020/687 of 17 December 2019 supplementing Regulation (EU) 2016/429 of the European Parliament and the Council⁹, as regards rules for the prevention and control of certain listed diseases.

European legislation is implemented in Hungary by Decree no. 143/2007 of the Minister of Agriculture and Rural Development where the rules on control of AI are detailed.

Strict measures were ordered, which included: killing of all birds at the affected holdings and safe disposal of carcasses and all contaminated material; cleaning and disinfection; establishment of restriction areas of at least 3 and 10 km radius, where general movement restriction was in place. Movement of poultry could only take place with the permission of the veterinary authority and when applying additional biosecurity measures (e.g. for direct slaughter). In the restriction zones, census of poultry holdings has been implemented.

Poultry in the affected holdings were killed in accordance with the rules of the European Union in line with Chapter 7.6. of the *Terrestrial Code*. Carcasses were destroyed at rendering plants. Stamping-out was completed with the final cleansing and disinfection of the last affected premises on the 13 May 2021.

Besides the 300 000 poultry killed at the affected holdings, another 500 000 birds were killed and slaughtered in the framework of preventive measures. Altogether 800 000 poultry were killed and slaughtered in connection with the epidemic.

Preventive killing/slaughter has been carried out – based on risk assessment – in protection zones. In Komárom-Esztergom and Bács-Kiskun counties all commercial poultry holdings were depopulated in the protection zones after the outbreaks.

The re-population of commercial poultry holdings could only take place 21 days following the date of completion of the final cleansing and disinfection. Disinfectants were purchased centrally, and the cleaning and disinfection procedure itself was supervised by official veterinarians in order to ensure that the disinfectants were used in required amount and concentration.

Restocking was implemented in accordance with Council Directive 2005/94/EC and with Commission Delegated Regulation (EU) 2020/687 – the latter entering into force and applicable from 21st April, 2021.

6. Surveillance after the outbreaks

In addition to the routine surveillance described under Surveillance and early detection system, additional surveillance has been carried out in the affected holdings and in restriction zones in accordance with Commission Decision 2006/437/EC¹⁰ approving a Diagnostic Manual for avian influenza and with Commission Delegated Regulation (EU) 2020/687 – the latter entering into force and applicable from 21 April 2021. For passive surveillance, dead birds from suspected farms were collected (See table 6). For active surveillance, samples were oropharyngeal/tracheal or cloacal swabs from live birds related to activity, namely before transport from restricted zones to the slaughterhouse or further keeping. Before lifting the surveillance zones, sampling was performed in most commercial holdings located in the surveillance zones.

In addition to the above-mentioned measures, from 11 November 2020, the Chief Veterinary Officer ordered further compulsory samplings. In waterfowl (excluding day-old-chicks) samples had to be taken

⁹ Commission Delegated Regulation (EU) 2020/687:

<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1625568816275&uri=CELEX%3A32020R0687>

¹⁰ Commission Decision 2006/437/EC:

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32006D0437&from=EN>

before transporting for further keeping. The laboratory test had to be performed within 72 hours of the transport, but the transport could already take place before the result was received. Before the release of poultry for restocking supplies of game birds, swab samples had to be taken within 72 hours of transport and the transport could only take place after PCR tests results were negative.

As provided for in the abovementioned EU legislation, the surveillance system is in accordance with Chapter 10.4 and Articles 10.4.26 to 10.4.30. of the *Terrestrial Code*.

The diagnostic method used was RT-PCR in compliance with Chapter 3.3.4. of the *Terrestrial Manual*.

The following tables show the number of samples taken and their results.

Table 5. Active surveillance in poultry due to the outbreaks*, total number of individual samples Hungary, 6 January- 10 June 2021

Year	Samples	Positive samples	Negative samples
6 January – 13 May 2021	33 676	0	33 676
14 May – 10 June 2021	7 230	0	7 230

*According to Commission Decision 2006/437/EC

Table 6. Results of the diagnostic tests conducted following clinical surveillance in poultry*, total number of individual samples, Hungary, 6 January- 10 June 2021

Year	Samples	Positive samples	Negative samples
6 January – 13 May 2021	799	26	773
14 May – 10 June 2021	38	0	38

*According to Commission Decision 2006/437/EC

Lifting of the restricted zones was implemented in accordance with Council Directive 2005/94/EC and 2021 Commission Delegated Regulation (EU) 2020/687. As required by the Directive, in the protection zone the official veterinarians visit all commercial and non-commercial holdings and, if necessary, collect samples from the commercial holdings for laboratory tests in accordance with the diagnostic manual.

7. Measures implemented to maintain freedom in the country

Surveillance is carried out throughout the year to detect early any incursion of the disease.

Detailed biosecurity requirements are in force in order to reduce the risk of direct and indirect introduction of avian influenza virus into poultry premises from wild birds, such as: stocking density, covered storage of feed and litter and the possibility to keep poultry closed if ordered, are in force. Repopulation of the affected area has been carried out after specific surveillance – as described earlier – following approval of the regional authority based on on-spot visits.

Hungary's animal health system is governed by EU- and supplementary, stricter national legislation. Being a central field of EU's concerns, its regulations are tailored not only to meet OIE's guidelines, but also to meet the EU's – occasionally further – requirements. As such, the import and intracommunity trade of live birds and their products' health requirements are in accordance with Articles 10.4.7. to 10.4.22. of the *Terrestrial Code*.

8. National Avian Influenza Reference Laboratory

The Directorate for Veterinary Diagnostics of the National Food Chain Safety Office is the national avian influenza reference laboratory (NRL) of Hungary, on the basis of Point 2 - Article 51 of 2005/94/EC Council Directive on Community measures for the control of avian influenza and repealing Directive 92/40/EEC.

The NRL is accredited since 2005 through the Hungarian accreditation body and it operates and is assessed in accordance with European standards. The laboratory personnel consist of highly trained and skilled experts with experiences and pasts of relevant work done in influenza virus research and molecular diagnostics. From 1 January until 10 June 2021, more than 60 000 swab samples and nearly 2 000 dead birds were analysed by real time RT-PCR methods recommended by the EU/OIE Avian Influenza reference laboratory. In the first step a screening with an M gene AIV RT-PCR was performed and differential RT-PCR was used to determine the type of virus for the positive samples. In order to confirm the type and pathogenicity of the virus, 8 Sanger sequencings were performed. Furthermore, complete genome of 4 HPAI viruses were sequenced by Next Generation Sequencing for epidemiologic and genetic studies. Sequences were submitted to the Global Initiative on Sharing All Influenza Data (GISAID) databases (<http://platform.gisaid.org>).

The vast majority of samples were swabs (94%) and 3% of samples were organs processed prior by the pathology department. The big part of the samples was sent to check the health status of birds before transport for slaughter or further keeping, the smaller part consisted of samples sent for screening purposes and samples originating from wild birds, suspicions or samples taken by veterinary authorities during epidemiological investigations.

The average number of samples investigated per day by RT-PCR was 470. The highest number of samples per day was 2 172 with a final documented PCR result on the same day. In addition, urgent samples were received frequently, where a final PCR result including the type of virus was provided in 4-6 hours. Specific service was introduced to transport the samples every day to the NRL from the countryside.

Table 7. Number of tests carried out from 6 January- 10 June 2021:

Test method	Number of tests
PCR	15 007
HI	2 680
Virus isolation	13

9. Additional measures ordered by the Chief Veterinary Officer

The 3/2017 CVO order concerning the strengthening of biosecurity requirements has been in force since the 2016/2017 HPAI epidemic (e.g., poultry should be able to be kept closed if ordered, requirements on stocking density, etc.). As additional measures, with CVO Order 4/2020, the Chief Veterinary Officer ordered closed keeping of poultry in the whole area of Hungary on 25 November 2020. On 14 May 2021 CVO Order 1/2021 entered into force withdrawing CVO Order 4/2020, thereby the compulsory closed keeping of poultry was lifted.

10. Conclusions

Considering that:

- Avian Influenza is a notifiable disease in Hungary;
- The last outbreak of HPAI in Hungary was on 13 April 2021;
- There are regular ongoing awareness programs in place on avian influenza;
- More than 28 days have elapsed since the completion of stamping out policy and no new infection with avian influenza viruses in poultry has been detected in the country according to the results of the surveillance performed in accordance with Articles 10.4.26. to 10.4.30. of the *Terrestrial Code*.

The OIE Delegate of Hungary declares that the country has met the requirements for the recovery of country freedom from infection with infection with high pathogenicity avian influenza viruses (HPAI) in poultry as of 10 June 2021, in accordance with the provisions of Chapter 1.6. and Article 10.4.6. of the *Terrestrial Code* (2021 edition) and consistent with the information provided in OIE-WAHIS.

Statement to be included in the self-declaration document.

I, the undersigned,

LAJOS BOGNAR

Delegate of

HUNGARY

to the World Organisation for Animal Health (OIE), takes responsibility for the self-declaration of freedom from

HIGHLY PATHOGENIC AVIAN INFLUENZA

(disease)

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Drawn up on 02 / 01 / 2021

Signature of the Delegate:

L. Bogнар

