



REPORT

Research on HPAI in ruminants

Initiated following the epidemiological situation of cattle HPAI in the USA

Online survey organised by the CWG AH&W | 7th October 2024

Survey conducted: 27 June until 5 October 2024

Date of Report: 7 October 2024

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Italy, Ministry of Health

Within the Kappaflu project (Horizon Europe Funding Programme), Istituto Zooprofilattico Sperimentale delle Venezie (IZSVe) has been working on the optimization of serological methods for the screening of antibodies against HPAI viruses of the H5 subtype in dairy cattle and other ruminants (e.g. sheep and goats). The analytical and diagnostic comparison of in-house assays and commercially available ELISA kits is ongoing.

In addition, as part of a regional research project, the IZSVe is carrying out retrospective serological surveillance in dairy cattle on over 80 farms in densely populated poultry areas considered to be at high risk for HPAI virus introduction in north-eastern Italy. This study will help animal health authorities to assess the risk posed by HPAI viruses in this productive category.

IZSVE is also submitting a proposal to the EUP AH&W external call on the assessment for the risk of HPAI virus introduction into dairy cattle from wild birds in Europe and to improve environmental diagnostic testing for AIV in these farms.

Contact

AI EURL Calogero Terregino DMV, PhD

EU/WOAH/National Reference Laboratory for Avian Influenza and Newcastle Disease

FAO Reference Centre for Animal Influenza and Newcastle Disease

Istituto Zooprofilattico Sperimentale delle Venezie (IZSVe) * Viale dell'Università, 10 - 35020 - Legnaro (PD) ITALY

Italy, Istituto Zooprofilattico Sperimentale della Lombardia e dell'Emilia Romagna

We are conducting a risk evaluation assessment on "Behavioural dynamics of influenza viruses in relation to the processing temperature profile of hard granular cheese". The objective of the experimental study is to evaluate the behavioural dynamics of Avian Influenza A (H5N1) viruses by simulating the thermal profile of raw milk during the cheesemaking process in hard cheeses. Should the result be unfavourable, confirming the survival of the virus in the milk at the end of the treatment, experimental cheesemaking will be planned.

There is no publicly available information yet.

Contact

Dr. Stefano Pongolini
Dr.ssa Ana Moreno
Dr. Paolo Daminelli

Sweden, Formas

Publicly available information: <https://www.sva.se/en/what-we-do/research-at-sva/research-projects-at-sva/foka/avian-influenza-in-mammals/>.

Contact

Caroline Bröjer Biträdande statsveterinär/State veterinarian

The Netherlands, Ministry of Agriculture, Fisheries, Food Security and Nature

Wageningen Bioveterinary Research (WBVR) is working on the diagnostics with milk as a matrix (this accounts for PCR, VNT and NP-ELISA) in order to monitor and screen milk samples for the presence of virus and specific α -H5N1 antibodies. Also virus isolation from milk samples is planned. We have also investigated the replication of the European H5N1 strains in differentiated bovine airway epithelial cells using air-liquid interface (ALI) ex-vivo technics. The paper is recently published. We aim to also expand these investigations and e.a. perform experiments with strains that circulate in the USA on these ALI-cultures. We currently also monitor wildlife (cattle, horses, deer) for antibodies against the H5N1.

The above-mentioned paper is found here:

<https://www.microbiologyresearch.org/content/journal/jgv/10.1099/jgv.0.002007>

Contact

Matthijn de Boer or the authors of the mentioned paper.

The Netherlands, Royal GD

At this moment, Royal GD performs a retrospective seroprevalence study in cattle, using archived serum samples from ruminants throughout the country sampled in 2022, 2023 and 2024. We use a commercial NP blocking ELISA. At the Dutch reference Institute WBVR, more research is ongoing.

There is no publicly available information yet.

Contact

Jet Mars

The Netherlands, Office for Risk Assessment, Food and Consumer Product Safety Authority (NVWA)

In the Netherlands, a retrospective blood test is carried out to determine the presence of bird flu in cattle.

The research is being initiated anyway, although the chance that there are infections in the Netherlands - just like in the United States - is considered small. Research institutions Royal GD, WBVR, Erasmus MC, the Faculty of Veterinary Medicine and the RIVM are working together in the research that should reveal whether bird flu is circulating among cows in the Netherlands. The results of the study are expected after the summer (2024).

No publication yet.

Further information available at:

- <https://www.boerderij.nl/meer-onderzoek-naar-vogelgriep-bij-rundvee-en-varkens> (Dutch).
- <https://www.wur.nl/en/research-results/research-institutes/bioveterinary-research/show-bvr/bird-flu-virus-found-in-cows-and-human-in-united-states.htm>

Contact

Wim van der Poel

United Kingdom, Defra

The UK has not funded in-vivo work in ruminants, but is funding in-vitro work on mammalian cell lines, including bovine mammary gland cell lines. Using both the US Strain (B3.13) and Eurasian strains (AIV48), receptor binding, cell fusion, polymerase activity and other characteristics will be investigated with cDNA and reverse genetics. High containment work will look at antigenicity and potential for airborne transmission as well as spread to other livestock species. This programme is funded by Defra and UKRI through a consortium, led by Professor Ian Brown at the Pirbright Institute and Professor Wendy Barclay at Imperial College, London.

There is no publicly available information yet, but publications and pre-publications in BioRxIV or MedRxIV will be expected.

Contact

Helen Roberts
Scott Sellers

Members who are aware of such research, not linked to their country

Belgium

Received from Valérie Van Merris, FPS Health, Food Chain Safety and Environment.

In the framework of ICRAD's first co-funded call, the following project has been funded: **PREVENTER** – Deciphering the role of influenza D virus in bovine and human respiratory diseases in Europe.

- <https://preventer.envt.fr/>
- <https://www.icrad.eu/portfolio-items/deciphering-the-role-of-influenza-d-virus-in-bovine-and-human-respiratory-diseases-in-europe/>

Contact

Dr Mariette Ducatez, INRAE

EFSA, European Food Safety Authority

EFSA has currently no ongoing project nor scientific opinions received from EC on HPAI in small ruminants and/or cattle.

Ongoing mandates in relation to HPAI are here:

<https://open.efsa.europa.eu/questions?foodDomains=Animal%20Health&search=HPAI>
<https://www.efsa.europa.eu/en>

Contact

Inmaculada Aznar

Members who replied not to be aware of such research

- Austria, Federal Ministry of Health and Veterinary University of Vienna; General HPAI information from Austria:
 - AGES: <https://www.ages.at/mensch/krankheit/krankheitserreger-von-a-bis-z/vogelgrippe> (in German language only).
 - Min Health: [https://www.sozialministerium.at/Themen/Gesundheit/Uebertragbare-Krankheiten/Infektionskrankheiten-A-Z/Vogelgrippe-\(Aviare-Influenza\).html](https://www.sozialministerium.at/Themen/Gesundheit/Uebertragbare-Krankheiten/Infektionskrankheiten-A-Z/Vogelgrippe-(Aviare-Influenza).html) and <https://www.verbrauchergesundheit.gv.at/tiere/krankheiten/ai.html> (both in German language only).

- Animal Health Service Poultry: <https://www.ggv.at/allgemein/gefluegelpest-oesterreich-meldet-ersten-positiven-fall>. (in German language only).

Ongoing HPAI research:

- 1 project at Veterinary University of Vienna regards HPAI in poultry: Xenobiotics and Pathogenicity of Avian Influenza Viruses https://vetdoc.vu-wien.ac.at/vetdoc/suche.projekt_uebersicht?sprache_in=en&menue_id_in=300&id_in=17265
- No ongoing HPAI in cattle research.

Contacts

- Vet Univ Vienna/Clinic for Ruminants: Thomas Wittek
- Vet Univ Vienna/Virology: Till Ruemenapf
- AGES/Vet division: Friedrich Schmoll
- Min Health/Vet division: Florian Fellingner
- Greece, Veterinary Research Institute, ELGO DIMITRA.
- Ireland, Department of Agriculture, Food & Marine
Contact: Laura Garzacuartero who heads the Poultry virus/ Avian influenza section of the Central Veterinary Research Laboratory.
- Italy, CREA, Italy.
- Poland, National Institute of Animal Production. Probably in Poland there are no research on HPAI in ruminants.
- Slovenia, National Center for Animal Welfare, Veterinary Faculty, University of Ljubljana.
Contacts: Podpečan Ožbalt, Brigita Slavec, Veterinary Faculty, University of Ljubljana
- Switzerland, Federal Food Safety & vet Office: a relevant project is planned but still has to be validated internally.

Hein Imberechts

7 October, 2024

Annexes

Invitation to participate in the online survey

From: Hein Imberechts
Sent: donderdag 27 juni 2024 15:53
To: CWG AH&W members
Subject: CWG AH&W, invitation to provide information on research projects on HPAI in cattle or small ruminants

Dear CWG AH&W member,
Dear researcher,

CWG AH&W members and animal health experts from CWG countries are invited to provide information on research projects on HPAI in cattle or small ruminants. The survey below aims to collect information on recently started or planned research in their institutions or countries. The research may involve clinical or ex vivo studies, direct or indirect detection techniques, virus characterisation efforts, monitoring of an animal population, risk assessment, etc.

The survey can be accessed here: <https://surveys.sciensano.be/index.php/549146?lang=en>.

Thank you for your collaboration.

Hein Imberechts, for the CWG AH&W Management Board

Hein Imberechts

Strategy & External Positioning at [Sciensano](#)

Chair [CWG Animal Health & Welfare](#)

Member of [EUP Animal Health & Welfare](#) Management Team (WP on SRIA)

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Contact through webex: <https://sciensano.webex.com/meet/hein.imberechts>

Screenshots of the survey

CWG AH&W, Highly Pathogenic Avian Influenza in ruminants

In the light of the first cases of HPAI H5N1 in cattle in the United States in March 2024, [STAR-IDAZ](#) is seeking to collect and disseminate relevant research information on **HPAI in ruminants**.

[CWG AH&W](#), as the European regional consortium of STAR-IDAZ, supports this initiative. Both networks provide assistance to the EC and the global AH&W community, including alignment of research agendas and avoidance of duplication of effort.

This survey can be shared widely among AH&W professionals.

Dear CWG AH&W member,
Dear researcher,

CWG AH&W members and animal health experts from CWG countries are invited to provide information on research projects on HPAI in cattle or small ruminants. The survey aims to collect information on recently started or planned research in their institutions or countries. The research may involve clinical or ex vivo studies, direct or indirect detection techniques, virus characterisation efforts, monitoring of an animal population, risk assessment, etc.

Thank you for your collaboration.
The CWG AH&W Management Board

I consent to the processing of my personal data for the purpose of consulting the SCAR Collaborative Working Group on Animal Health & Welfare Research. [Show policy](#)

Identification, Personal data

*Your family name and first name

*Your email

*Your affiliation

*Your country (English)

Highly Pathogenic Avian Influenza in Ruminants

*Do you know of any research on HPAI in ruminants in your institution or country that was set up following the epidemiological situation of cattle HPAI in the USA?

Choose one of the following answers

- No, I am not aware of any.
- Yes, I know of some, but I don't want to share them with CWG AH&W, STAR-IDAZ or the broader community.
(Please comment)
- Yes, I provide some information in the comments section.

Please enter your comment here:

Is there any information publicly available? If so, where?

Who can be contacted for more information?

Submit