

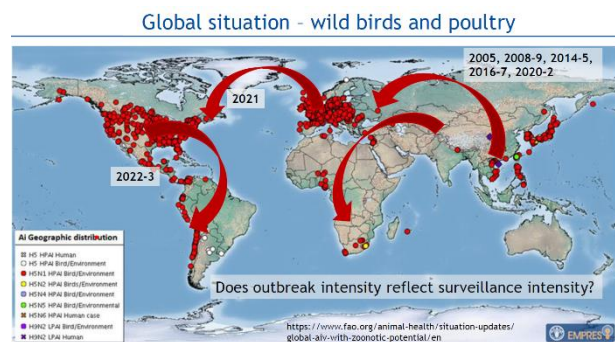
Report FVE/PVSGEU on Highly Pathogenic Avian Influenza Preparedness

April 6th, 2023 10h00-11h30

The Federation of Veterinarians of Europe (FVE) and the Poultry Veterinary Study Group of the EU (PVSGEU) were delighted to host a joint webinar on Highly Pathogenic Avian Influenza preparedness, which gathered scientists, private poultry practitioners, state veterinary officers, the industry and policymakers alike. FVE President Rens van Dobbenburgh welcomed the more than 250 participants and shared his very personal experience of stamping out measures, back when he was a poultry practitioner. Please find the full recording [HERE](#).

Speakers

Keynote speaker Professor Timm Harder, Friedrich-Loeffler-Institute (DE), recapped the current knowledge on the field situation, surveillance and control methods of Highly Pathogenic Avian Influenza (HPAI) with a special emphasis on vaccination strategies. Prof. Harder took us from the origin of the virus almost 30 years ago to today's unprecedented global situation in domestic poultry, wild birds, and mammals. He explained the success of influenza viruses based on genetic reassortment and drift, leading to an ever-expanding spectrum of co-circulating genotypes and antigenic variants, and an omnipresent risk of zoonotic potential.



Though the control options in wild birds are limited, the situation in domestic poultry is well-regulated and relies on the “Detect-Confirm-Cull-Compensate” approach (D3C). However, this approach is logistically, financially, and a workforce demanding, whereas early detection is a key component. Vaccination as a second layer of protection is an option under certain conditions, but will not lead to eradication on its own. Vaccination needs to be planned accurately and controlled tightly so as to prevent vaccinated poultry from acting as a clinically silent virus carriers. Therefore, powerful Monitoring and Surveillance Systems are pivotal to detecting circulating field viruses in flocks as early as possible and enable unimpeded trade with vaccinated poultry. Nevertheless, stamping out remains at the core of eradication strategies and vaccination should not be an excuse for tolerating HPAI co-existence in the EU. His presentation is [HERE](#).

On the audience question of whether diagnostic systems to differentiate the vaccinated from the naturally infected animals for the respective vaccines are already on the market, Prof. Harder indicated that PCR-directed surveillance based on swab samples is clearly preferred. Vaccines that allow Differentiating Infected from Vaccinated Animals (DIVA-vaccines) are not a prerequisite of vaccination programmes, therefore full virus-inactivated adjuvanted vaccines can be used as well. Collecting experiences in the field would be most urgently required in the next months. He expanded as well on

future updates of vaccines after widespread vaccination of large domestic poultry cohorts and its selection pressure. He explained that the Antigenic escape of viruses when under immunological selection pressure is a well-documented phenomenon in influenza virology and that includes HPAIV in poultry. Surveillance in vaccinated populations therefore should also scrutinize the HPAI viruses, if any, detected in vaccinated herds. Updating vaccines if escape viruses are detected is inherent in the vaccination campaign.



Dr Francesca Baldinelli, European Food Safety Authority, detailed the mandate EFSA received from the European Commission on Vaccination against HPAI. The aim is to look if vaccines can support the prevention and control of HPAI as an additional tool to the already available preventive and control measures. In particular, she explained the work on the available vaccines against HPAI for poultry, including the identification and description of the

vaccines that may be available for vaccination of poultry, their suitability to be used for different species of poultry, the capacity to protect against the currently circulating strains of HPAI virus, to be adjusted to the future strains of HPAI virus, to protect against multiple strains and to be used in the context of DIVA and the effectiveness in preventing the infection with HPAI viruses. In addition, potential drawbacks, such as shedding viruses are taken into account. EFSA also assesses suitable vaccination strategies with potential aims to maintain freedom of disease status, rapid eradication, or minimise losses with the eradication of outbreaks as well as risk factors that would trigger the need for vaccination to complement the preventive or control tools (e.g., high-risk areas for the introduction and spread of HPAI viruses, type of poultry production, the density of poultry establishments). Results on both the available vaccines and related strategies are expected for July 2023, whereas the assessment of the suitability and effectiveness of the reinforced surveillance, restrictions, and risk mitigation measures is scheduled for March 2024. Her presentation is [HERE](#).

Dr Leni Corrand, the spokesperson of the Poultry Veterinary Study Group, picked up on the topic of vaccination strategies and gave an insight view on the scenarios imagined by the French poultry industry. The French Competent Authority laid down a road map, including an economic assessment of different scenarios to enable the roll-out of vaccination in September 2023.

The poultry industry working group envisaged four plans, with an ascending coverage, and provided an overview of costs, benefits, and risks. For further exchange and collaboration, this Industry work was presented to the competent authority. While the vaccine orders will be placed soon, ongoing (duck) industry work on winter duck flock focuses on stocking density reduction in areas with concentrated duck rearing, which has been successfully implemented the last winter in South-West France. His presentation is [HERE](#).

Synthesis

	Scenario #1	Scenario #2	Scenario #3	Scenario #4
Targeted species	Ducks, turkeys	Ducks, turkeys, layers, capons	Ducks, turkeys, layers, Gallus > 42 D	All poultries except breeders and some wild games
Targeted areas	High-risk areas	All areas and high-risk areas for capons	All areas + extended high-risk areas for capons	Throughout France
Targeted period	From 1st of Nov to 30 th of April	Throughout the year	Throughout the year	Throughout the year
Vaccination cost (millions euros)	12 – 13.5 M€	51 – 72.5 M€	89 – 129.4 M€	186.1 - 189.1 M€
Monitoring cost (millions euros)	22.3	87.9	110.4	139.7
Benefits	Cost / risk of spread approach	Complete protection of 3 species	Global approach aiming at reaching an immunity in high poultry density areas	Massive vaccination ensuring global protection
Risks	Lack of immunization coverage	Minimum duration of 18 months	Technical and economical feasibility	Technical and economical feasibility

On the audience question of whether the veterinary workforce and laboratory capacity will be the limiting factor, Dr Corrand confirmed that their work assumes a fast limitation of the veterinary workforce for scenarios 2-4 whereas laboratory capacities should be sufficient if private laboratories gain accreditation for the analysis under the umbrella of the surveillance programme. However, Prof. Harder added, access to private laboratories for surveillance investigation will probably be subject to discussions with national authorities.

Panel discussion

The panel discussion was moderated by Thierry Chambon, FVE Vice-President, and started with two interactive questions.

The first question related to [recent findings](#) on two HVT-H5 vaccines, which were proven to be effective under laboratory conditions, preventing both disease and virus spread. These vaccines comply with the DIVA principle and are therefore good candidates for



further research in practice. However, results cannot be extrapolated to the field. A total of 70% (n=64/92) believed that we should start HPAI vaccination, thereof 42% (n=39/92) as soon as possible as part of the toolkit and 27% (n=25/92) were absolutely convinced, as the risk of not vaccinating is bigger, particularly for high-risk species. Less than one-third (30%, n=28/92) were not in favour of vaccination, as they felt it was too early with too many questions remaining.

David John, AnimalHealthEurope, highlighted the complexity of this question. Though vaccination should not be considered the sole means of control, it can be part of the toolbox, alongside biosecurity but must take into account the regional epidemiological situation. Where vaccination is used, it is important to have a robust surveillance programme in place and it should not affect the HPAI status in accordance with the WOH standards. The decision resides therefore on national circumstances. Jane Clark, EASVO President, added to a previous question posed to Dr Corrand on the limitation of the veterinary workforce, and how important interdisciplinary and transboundary collaboration is to tackle the complex challenges. Birthe Steenberg from the Association of Poultry Processors and Poultry Trade in the EU Countries echoed this wholeheartedly.



Most of the participants mentioned biosecurity as the most important measure to mitigate the HPAI burden in Europe, followed by surveillance and vaccination. Birthe Steenberg underpinned the importance of biosecurity as well as how biosecurity felt short in recent years as the main measure to halt the HPAI spread in Europe. Collaboration among all actors to build trust, and enhance transparency and knowledge sharing in the sector, on national and international levels alike, is of tremendous importance. David John highlighted that, by experience, the mix of measures works best to mitigate the burden of infectious diseases and the combination of important measures will leverage the impact, including new vaccines and diagnostic tools. As an example of collaboration, Estelle Hamelin, WOAAH Europe, recalled the joint recommendations made by WOAAH Europe members on HPAI vaccination at the last Regional Conference in October 2022 and that avian Influenza will also be a topic at the next General Session of WOAAH.

It was recognised that ‘stamping-out’ and culling are important, but the toll is considerable. Thierry Chambon asked how much longer we can afford to spend so many lives. Jane Clark explored this from a “One Health” perspective to find the balance between all the tools in our toolbox, tailored to the local and species-specific epidemiological conditions. Animal health needs to be protected by rapidly identifying, containing and preventing the spread to other flocks. We also need to protect animal welfare and protect human health and human welfare in relation to the distress for those involved and the devastation to the farmers and, finally, protect the environment from the impact of lost production, culling and disposal. She underpinned the importance as well of protecting the sustainability of the poultry supply chain including trade which can reflect consumer preference and mean that production is economically viable. Estelle Hamelin reflected on the impact of vaccination on the trade of high-risk populations, which imposes surveillance requirements such as circulating infection in vaccinated flocks and genetic drift of the field virus. The quality of the surveillance will determine the confidence of trade partners in relation to the vaccination strategy and the capacity of the veterinary services. Birthe Steenberg echoed the importance of a trust-worthy surveillance programme on a global level to mitigate this disease, that does not respect international borders.

The remaining questions were when vaccines for other species would become available, the coherence of animal health and animal welfare legislation, and how to extend knowledge on maintaining thorough biosecurity measures to all actors to pave the way for successful vaccination programmes. The panel acknowledged that HPAI vaccination and its surveillance programmes come with a high cost, but the burden of HPAI may come with an even greater cost, not only in monetary terms.

Conclusions

During the last two winters, and more importantly, even during the last summer, Europe experienced the most widespread incursions of HPAI in both wild bird and domestic avian populations of recent times and spread to the Americas with devastating results. The webinar highlighted the unprecedented biological impact on poultry and wild birds with transcontinental movements involving Asia, Europe, Africa, and North and South America of HPAI outbreaks. The virus appears to have become endemic in some wild aquatic bird populations, causing major die-offs in some species, sporadic infections of wild and domesticated mammals and rare human infections. However, past vaccination strategy proposals as a result of these science-led discussions remained theoretical as fears over the feasibility and barriers to international trade in poultry and poultry products prevailed.

Yet, the financial and welfare impacts on both poultry and poultry farmers and governments have been significant. Therefore, global reconsideration and re-evaluation of vaccination as a complementary tool, when used with stamping-out programmes, is crucial. Ahead of the EFSA opinion on the availability of vaccines against HPAI for poultry and considering potential vaccination strategies, FVE and PVSGEU engaged scientists, regulators, poultry practitioners, and the industry to open science-based applications on future long-term strategies for the prevention of HPAI in clearly defined poultry populations at risk for the upcoming season 2023/2024.