Statement on Vaccination against Highly Pathogenic Avian Influenza Viruses

English Summary

Since 2005, outbreaks of highly pathogenic avian influenza (HPAI) have occurred in Europe at ever shorter intervals. In the first years, the outbreaks were mainly caused by migratory birds and occurred seasonally in spring and autumn. In recent years HPAI became enzootic in sessile wild birds. This led to year-round transmission activity. Classical animal disease control has succeeded in interrupting outbreak chains in the poultry sector. Although this also prevented infections of wild birds through retransmission from infected poultry, it does not influence the circulation of the virus in wild birds. Especially in segments of the poultry industry that have structural difficulties in achieving a sufficient level of biosecurity, the high infection pressure from the wild bird population repeatedly leads to virus entries.

Classical test- and slaughter-approaches are becoming difficult to justify in view of the increasing frequency of outbreaks and increasing numbers of infected birds. In the EU, there is a paradigm shift away from classical strategies towards vaccine-based control measures. StIKo Vet welcomes the possibility of vaccination against HPAI provided by Delegated Regulation (EU) 2023/361.

Vaccination can complement conventional control strategies against HPAI. Prevention of economic losses is one goal. Another is to avoid the killing and disposal of high numbers of infected birds. Last but not least, it is pivotal to reduce the amount of circulating virus in order to reduce the risk of transmission from poultry to humans, but also back to wild birds. The following principal considerations should be observed when implementing vaccination against HPAI:

a. To be successful, in case of viral entry HPAI vaccines must be able to keep the R_0 value below 1 in vaccinated herds. The currently approved, inactivated HPAI vaccine has not been adequately tested against currently circulating virus strains. It should not be used uncritically. There are a number of vaccines that are in use outside the EU or have recently been tested in field trials. Vaccines suitable for use in Europe should be checked and approved as soon as possible. In general, there is a need for innovative, flexible vaccination concepts that allow (i) to rapidly adapt vaccines to circulating field viruses; (ii) to induce protective immunity as quickly as possible and (iii) with as few applications as possible. It would be advantageous, if vaccines were available that can be administered by mass application. Vaccines will be required for chicken, turkey, duck and goose. An international panel of experts could be set up at WOAH or EFSA, as it has been implemented for human or equine influenza, to evaluate the development of new viral variants and on a regular basis to issue recommendations on the strain composition of HPAI vaccines. The guideline on facilitated substitution or addition of viral strains for equine influenza vaccines should be extended to HPAI vaccines (119).

b. Vaccination against HPAI is associated with the risk of masking outbreaks and clinically inapparent viral circulation. Therefore, comprehensive virus monitoring is an indispensable part of any HPAI vaccination. The sensitivity, cost efficiency and practicability of the test system must likewise be considered. For example, systematic individual animal sampling of turkey flocks from the age of 10 weeks onward cannot be accomplished without considerable stress for the flock and

corresponding damage to the animals. On the other hand, the investigation by means of RT- qPCR of pooled samples, e.g. from biofilms of drinking troughs, was shown to be very sensitive and cost effective for the early detection of HPAI outbreaks. The feasibility of virus monitoring and the resulting costs must be taken into account before implementing HPAI vaccination. Importantly, virus monitoring must be maintained until the last vaccinated animal has left the farm.

c. Regulation (EU) 2023/361 differentiates between suppression vaccination, emergency vaccination and preventive vaccination. In view of the efficient eradication systems that have been set up in recent years and due to the delay in the onset of immunity, suppression vaccinations are no option for HPAI control. The same applies to emergency vaccinations when outbreaks have already occurred in poultry flocks. Although they can be regionally restricted, they usually come too late in the case of HPAI and short-lived poultry populations. By contrast, preventive vaccinations can be useful in areas and periods with a high risk of entry from wild bird populations. This applies in particular to commercial holdings that have structural difficulties in setting up a sufficient level of biosecurity (e.g. turkey fattening in Louisiana barns, goose breeders, free-range laying hens). Although for example farms with mobile open stables experience a high level of social acceptance, they are structurally threatened in their existence by the obligation to keep birds indoor. Preventive vaccinations can also be useful for valuable (rare) animal stocks (e.g. in zoos, in special breeding stocks (grandparent or parent animals, etc.).
   Where possible, regional risk geographies (e.g. based on the proximity to resting or feeding places of migratory waterfowl) should be defined. Farms in risk areas should be prioritized. By contrast, large-scale, preventive vaccinations in small-holdings are difficult to control and, due to the high monitoring costs, harbor a particular risk of a lack of compliance by the keeper and undetected virus replication.

d. As incentive for implementing the vaccination in the production segments outlined above, it should be considered for vaccinated birds to suspend the obligation to keep them indoors in the event of wild bird outbreaks. An option could also be to financially support virus monitoring for example by animal disease funds.
   In addition, trade restrictions on live birds and products from vaccinated herds should be kept to a minimum. Regulations for the movement of hatching eggs and day-old chicks from vaccinated herds must not lead to a disruption of established trade structures. According to the Regulation (EU) 2023/361, after emergency vaccination, particularly high trade restrictions have to be implemented by the authorities. So, even if wild birds are affected, as long as there have been no outbreaks in poultry flocks, all HPAI vaccinations should be considered preventive within the meaning of the Regulation.

There is currently a whole series of imponderables that make it impossible to make more specific recommendations at the moment. This includes the question of which vaccines will be on the market, how the costs of vaccination and surveillance can be shared and how vaccination will be accepted by third countries. StIKo Vet therefore reserves the right to update the statement at short intervals and adapt it to the corresponding developments.