Veterinærinstituttet
Norwegian Veterinary Institute

Annual Report

The surveillance programme for avian influenza (AI) in poultry in Norway 2019

Comissioned by

Mattilsynet

The surveillance programme for avian influenza (AI) in poultry in Norway 2019

Content

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Commissioned by
Norwegian Food Safety Authority

ISSN 1894-5678

Design Cover: Reine Linjer
Photo front page: Colourbox

Summary

Surveillance in 2019 did not detect infection with highly pathogenic influenza A virus in poultry.

Introduction

The Norwegian Food Safety Authority is responsible for implementing the surveillance programme for avian influenza (AI) in poultry. The programme, which was started in 2006, is based on serological investigations of poultry and is modelled on EU's Council Directive 2005/94/EC (1). The Norwegian Veterinary Institute is responsible for planning, laboratory investigations and reporting components of the programmes. HPAI has never been reported or diagnosed in poultry in Norway.

AI is a serious and highly contagious disease in poultry and other captive birds caused by many different subtypes of influenza A viruses. The level of risks posed by the different subtypes to animal and public health is variable due to rapid virus mutations and possible re-assortment of the genetic material between different subtypes.

Current knowledge indicates that the health risks posed by the so-called low pathogenic AI (LPAI) viruses are lower than that posed by highly pathogenic AI (HPAI) viruses. Most LPAI viruses cause only mild disease in poultry. The HPAI viruses originate from a mutation of LPAI viruses of either H5 or H7 subtype. HPAI can cause disease in poultry resulting in mortality rates exceeding 90 %.

In general, domestic poultry populations are free from AI viruses. However, wild waterfowls are the natural reservoirs for all influenza A virus subtypes. Infected birds do not usually develop clinical disease, but may shed large amounts of virus upon infection (2). Spread of LPAI from the wild bird reservoir to poultry happens occasionally, and some LPAI viruses may mutate to HPAI in this context. Hence, an important aim of the surveillance program is to identify the circulation of LPAI viruses in poultry.

Aims

The aim of the national surveillance programme for AI in poultry is to document that the various poultry populations in Norway are free of influenza A virus of subtypes H5 and H7 and to contribute to the maintenance of this status.

Materials and methods

Flock selection and sampling

The programme in 2019 consisted of serological screening of blood samples from poultry. Poultry deemed at risk for exposure to influenza type A were preferentially sampled as outlined in Commission Decision 2010/367/EC (3). The sample selection was based upon a risk assessment published by the Norwegian Veterinary Institute in February 2006 (4). The sample selection in 2019 included chickens, turkeys, ducks, geese and emus.

In addition to the samples taken from farms with table egg production (including all organic table egg producers with > 100 layers) and turkey meat production on the basis of the risk assessment (4), samples from breeding flocks were also tested for AI. According to the national regulations for certification of poultry breeding farms (5), blood samples from 60 birds must be taken annually from every breeding flock. These blood samples are tested for antibodies against Newcastle disease, as Norway is a non-vaccinating country. Ten of these 60 samples are also included in the national surveillance programme for AI.

Blood samples were collected from at least 10 birds per holding. An exception to this was waterfowl, from which 50 samples were collected. If there were more than one shed on the holding, all sheds were

sampled. In those instances where the flock size was less than the number required, all birds in the flock were sampled.

Laboratory analyses

A competitive multispecies ELISA kit from IDvet (ID Screen® Influenza A Antibody Competition, multi-species) was used to screen serum samples for antibodies against influenza A virus. The test detects antibodies to all influenza A subtypes and antigenic variants using a monoclonal antibody against a highly conserved epitope of the influenza A virus nucleoprotein (NP).

In cases of positive ELISA results the findings were confirmed by a haemagglutination-inhibition (HI) test according to the OIE diagnostic manual (6). Antigens used in the HI test are designated by the EU reference laboratory (EURL) for avian influenza (Istituto Zooprofilattico Sperimentale delle Venezie (IZSVe), Legnaro, Italy) and listed in Commission Decision 2010/367/EC (3). Primary antigens H5N3 (A/teal/England/7894/06), H7N7 (A/turkey/England/647/77) and H5N8 (A/duck/England/14; ducks and geese only) and secondary antigens H5N1 (A chicken/Scotland/59) and H7N1 (A/African starling/983/79) were all supplied by the EURL.

Results and Discussion

Table 1 shows the number of flocks and birds tested in 2019. The number of domestic poultry flocks sampled relative to the Norwegian poultry population was adequate in achieving a high confidence in ascertaining its disease free status for AI. Besides the surveillance programme, additional samples taken for diagnostic purposes and the control of imported animals were also screened for antibodies against influenza A virus or H5/H7. All were negative.

Table1. Number of certified breeder flocks, commercial flocks, and birds tested in the surveillance programme for AI in poultry 2019.

Species	Certified breeder flocks		Commercial flocks		Total	
	Flocks	Birds	Flocks	Birds	Flocks	Birds
Chicken	77	770	60	600	137	1 370
Turkey	6	60	42	418	48	478
Duck	4	200	7	350	11	550
Goose	2	100	0	0	2	100
Emu	0	0	1	4	1	4
Total	108	1 318	91	1 184	199	2 502

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http://www.oie.int/fileadmin/Home/eng/Health_standards/tahm/3.03.04_AI.pdf

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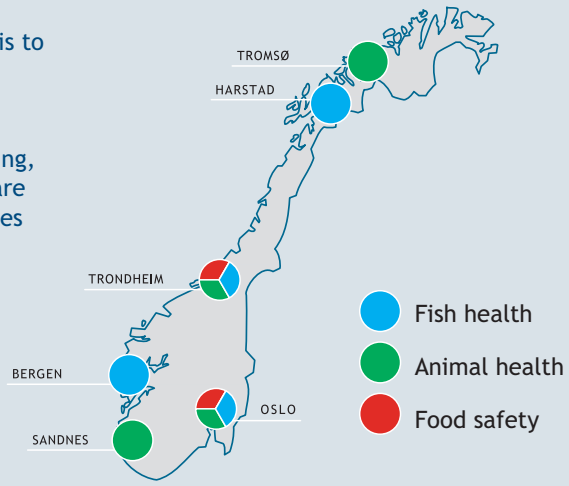

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