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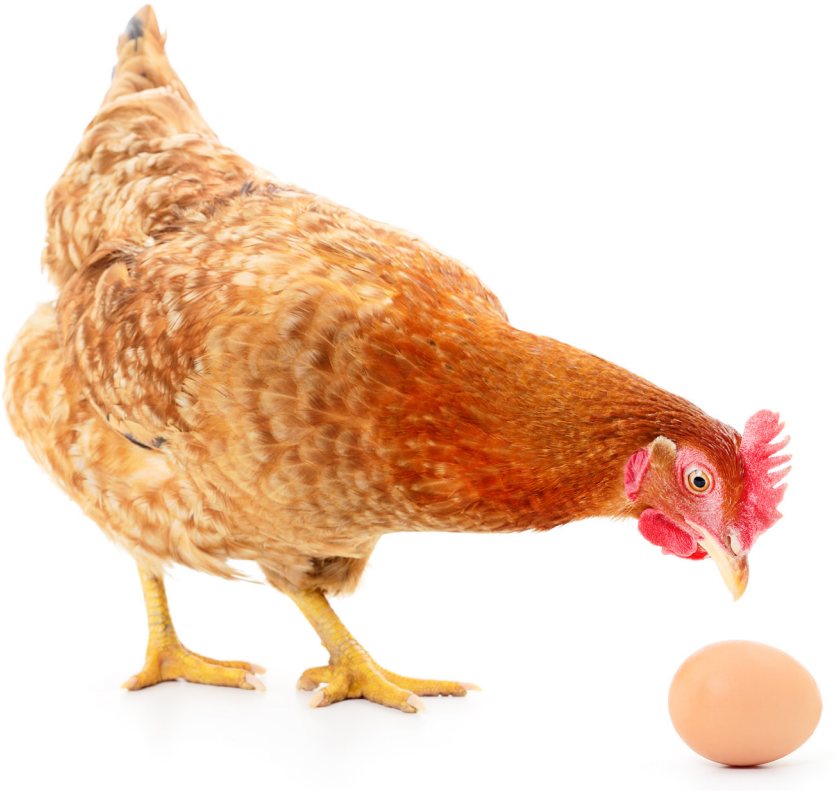

REPORT 55/2023

The surveillance programme for infectious laryngotracheitis (ILT) and avian rhinotracheitis (ART) in poultry in Norway 2022

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Content

Summary

Surveillance in 2022 did not identify infectious laryngotracheitis (ILT) or avian rhinotracheitis (ART) in poultry in Norway.

Introduction

The Norwegian Food Safety Authority is responsible for implementing surveillance programmes for infectious laryngotracheitis (ILT) and avian rhinotracheitis (ART) in chicken and turkey flocks, respectively. The ILT and ART surveillance programmes based on serological investigations in poultry started in 1998. The Norwegian Veterinary Institute (NVI) is responsible for sampling plans, laboratory investigations and reporting components of the programme.

ILT is a severe respiratory disease in chickens caused by gallid herpesvirus 1 (ILT virus or ILTV). The disease is common in commercial chickens in most parts of the world, including most European countries (1). The last time ILT was detected in a commercial poultry flock in Norway was in 1971. However, clinical outbreaks of ILT occur sporadically in backyard flocks in Norway (2).

ART is a highly contagious infection that affects the upper respiratory tract of poultry. The disease is caused by avian metapneumovirus (aMPV) and has been diagnosed in most European countries (1). Antibodies against aMPV were detected in one broiler breeder farm in 2003 and one layer breeder farm in 2004. The two affected farms were located in the same area. No clinical signs were seen in any of the seropositive flocks. Numerous attempts to isolate and identify an infectious agent causing seroconversion failed. Thus, the diagnosis of ART in these flocks was based on serology alone. Culling of the affected flocks and other preventive measures were implemented, and a follow-up screening of farms in the district revealed no spread of the infection to other farms. However, in 2005 an additional seropositive flock in the same area was detected. Clinical signs were not observed in any of the flocks that were seropositive in the period 2003-2005, and no infectious agent causing the seroconversion was found. Chickens were excluded from the national surveillance programme for ART from May 2005 (3).

ART has never been diagnosed in turkeys in Norway. The national surveillance program for ART disease persists within turkey populations due to the potential for significant health and economic impacts, primarily affecting this poultry species.

Aims

The aims of the national surveillance programme for ILT in chickens and ART in turkeys are to document that the respective commercial poultry populations in Norway remain free of these diseases and to contribute to the preservation of this status.

Materials and methods

Flocks and sampling

According to the national regulations for certification of poultry breeding farms, blood samples from 60 birds were taken at least once a year from every breeding flock (4). Thirty of the 60 samples from chicken and turkey breeding flocks were included in the national surveillance programmes for ILT and ART. In addition, turkey flocks were sampled for ART at slaughter.

Laboratory analyses

All serological screening analyses were performed at NVI. Samples with positive or inconclusive results in the surveillance programme were re-tested in duplicate with the same test method. Samples were considered negative if the re-test came back with a negative result. If re-testing resulted in positive findings, confirmation testing was performed at the NVI or at the National Veterinary Institute (SVA) in Uppsala, Sweden.

ILT

An indirect ELISA test from IDvet (ID Screen® ILT indirect) was used to detect antibodies against ILTV. In the event of standalone positive or inconclusive results for singular samples within a flock batch, the samples in question were sent to SVA in Sweden for confirmatory testing. If still positive, the flock was re-sampled after 10-14 days with at least 30 new samples. If clinical signs of disease were absent, and all re-sampled animals were negative for antibodies against ILTV, the flock was concluded as negative for antibodies against ILTV.

ART

All serum samples were screened for specific antibodies against aMPV using an indirect ELISA produced by IDvet (ID Screen® Avian Metapneumovirus Indirect). In the event of standalone positive or inconclusive results for singular samples within a flock batch, the samples in question were further tested with a confirmatory ELISA at NVI (IDEXX Avian Pneumovirus Antibody Test Kit). Samples positive in the confirmatory test were sent to SVA in Sweden for analysis. If still positive, the flock was re-sampled after 10-14 days with at least 30 new samples. If clinical signs of disease were absent, and all re-sampled animals were negative for antibodies against aMPV, the flock was concluded as negative for antibodies against aMPV.

Results and Discussion

Table 1 summarises the number of flocks and birds tested in 2022. Altogether, all poultry flocks tested for ILT and ART in the surveillance programme for 2022 were concluded to be negative for these diseases.

***Table 1**. Number of flocks and birds tested in the surveillance programmes for infectious laryngotracheitis (ILT) in chickens and avian rhinotracheitis (ART) in turkeys in 2022.*

Disease - poultry category	Total numbers tested		Seropositive flocks
	Flocks	Birds	
ILT - Broilers	61	1 858	0
ILT - Layers	8	240	0
ART - Turkeys	52	1 619	0

ILT

In 2022, the Norwegian Veterinary Institute received 2,127 poultry samples in the ILT surveillance programme. Twenty-nine samples were unsuitable, leaving 2,098 samples from 69 flocks (61 broiler flocks and eight layer flocks) for analysis. Of the samples, 2,091 were confirmed negative in accordance with standard procedures. The remaining seven positive samples originated from one layer and two broiler flocks that were re-sampled. From each of these three flocks, 30 birds were tested serologically. All birds were seronegative.

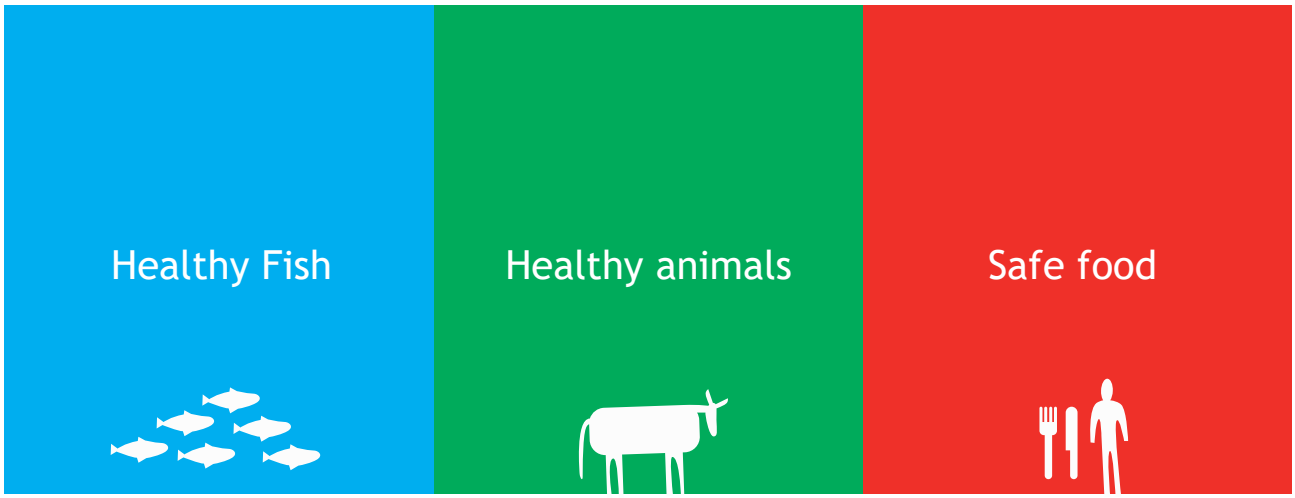
ART

In 2022, the Norwegian Veterinary Institute received 1,619 samples from 52 turkey flocks in the ART surveillance programme. All samples were suitable for analysis. Of the samples, 1,617 were confirmed negative in accordance with standard procedures. The remaining two positive samples originated from two different turkey flocks that were re-sampled. From each of the two flocks, NVI received new samples from 30 birds. In one of the two flocks, all birds were seronegative, but in the other flock, two birds had seropositive reactions. Based on lack of clinical signs in the flock, low ELISA values, and a low and stable number of seropositive birds, these two samples were interpreted to be false positive reactions.

Besides the surveillance programme, samples collected for disease investigation and for the control of imported poultry were also screened for antibodies against ILTV and aMPV. Results from these analyses are not included in this report. Antibodies against ILTV are occasionally detected in samples from backyard poultry flocks.

References

1. Swayne D, Boulianne M, Logue CM, McDougald LR, Nair V, Suarez DL. Diseases of Poultry, 14th ed. John Wiley and Sons. 2020.
2. Falk M, Reiersen A, Wolff C, Heier BT, Paulson B og Hofshagen M (red). Dyrehelserapporten 2022. Veterinærinstituttets rapportserie 19-2023
3. David B, Tharaldsen J, Grøneng G. The surveillance and control programme for infectious laryngotracheitis (ILT) and avian rhinotracheitis (ART) in poultry flocks in Norway. In: Brun E, Hellberg H, Mørk T, Jordsmyr HM (editors). Surveillance and control programmes for terrestrial and aquatic animals in Norway. Annual report 2006. Oslo: National Veterinary Institute; 2007. p. 123-126.
4. Forskrift som utfyller dyrehelseforskriften med bestemmelser om landdyranlegg og rugerier og sporbarhet av landdyr og rugeegg (landdyrsporbarhetsforskriften) av 28.04.2022. FOR-2022-04-07-637. Vedlegg I. Program for overvåkning av Newcastle disease i anlegg som holder fjørfe, som nevnt i § 9. https://lovdata.no/dokument/SF/forskrift/2022-04-07-637



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