

Western Cape active avian influenza surveillance Jan-Jun 2024

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Introduction

Routine surveillance for avian influenza (AI) in South Africa is necessary to assist with detection of high pathogenicity (HP) strains, i.e. H5Nx or H7Nx, that can cause serious economic losses in poultry and are the most likely strains to lead to human influenza pandemics. These characteristics also make surveillance important for export certification of poultry products.

Biannual surveillance in backyard chickens, commercial poultry and ostriches is prescribed by Appendix 9 (Notifiable Avian Influenza (NAI) Surveillance), of the HPNAI contingency plan of 2009. Additional surveillance is done in order for poultry compartments to be approved for export (VPN 44) and in ostriches (VPN 04).

Bird serum is screened with an influenza A enzyme-linked immunosorbent assay (ELISA). Positive ELISA tests are followed by haemagglutination inhibition (HI) tests to screen for H5, H6 and H7 antibodies.

A farm from which serology results in a positive ELISA test

should be retested as soon as possible. Further serum samples are taken and also tracheal swabs for detection of viral RNA via polymerase chain reaction (PCR). Samples that are PCR positive for avian influenza RNA must then be screened further for H5 and H7 RNA, using more specific PCR tests. RNA sequencing is required to determine other (non-H5 and -H7) subtypes and to provide further information on the exact strain involved. For more details on the surveillance strategy, please read the introduction to the [June 2020 Epidemiology Report](#).

Commercial Poultry

The Western Cape has approximately 135 poultry farms owned by companies that have at least two farms. Approximately 45 more farms are run as stand-alone operations. Approximately 40% of the poultry farms produce broilers for meat, 30% have layers producing table eggs, 25% have broiler breeders and the production system is currently unknown for 5%. The majority of poultry farms are concentrated northeast of

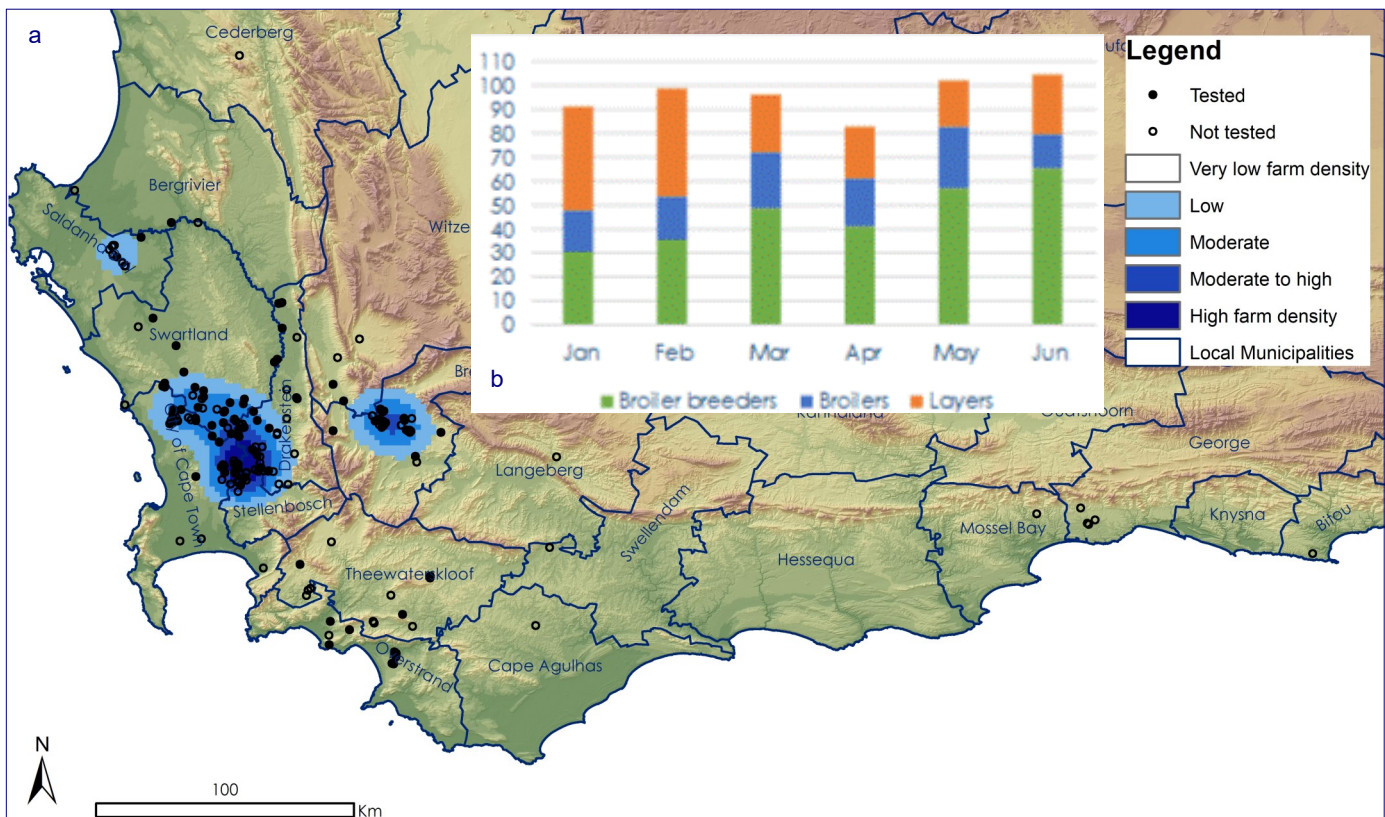


Figure 1 a) Avian influenza surveillance coverage in commercial poultry in the Western Cape, and b) poultry farms sampled per month, January-June 2024.

Cape Town, with another, smaller, densely populated area around Worcester (Figure 1a)

Between January and June 2024, 97 farms, belonging to nine companies, were tested at least once for avian influenza antibodies (Table 1). Companies tested between 25% and 93% of their farms. The higher number of farms tested, compared to previous periods (Table 1) is probably due to more farms applying to be registered under VPN 44, which is required for approval to vaccinate against HPAI. Similar numbers of farms were tested every month, with a slight dip in April. More layer farms were tested earlier in the period, though more broiler breeder farms were tested later in the period (Figure 1b).

Twelve poultry farms, belonging to two companies, tested influenza A ELISA positive, but H5, H6 and H7 HI tests were negative. Five farms tested positive more than once in the same production cycle, but follow-up PCR testing and serology on eleven of the positive farms had negative results. More farms were positive on follow-up tests in previous surveillance periods, most notably in the January to June period in 2023 when seven HPAI H5N1 outbreaks occurred in the Western Cape. It is possible that wild bird movements that introduced HPAI virus in 2023 also introduced low pathogenicity viruses and such movement did not occur in the first half of this year.

Backyard poultry

Western Cape animal health technicians sampled 79 backyard poultry premises between January and June 2024. Eleven tested ELISA positive and, of the eight that underwent follow-up testing, five remained ELISA

Table 1: Results of avian influenza serosurveillance on commercial poultry farms, Western Cape, January - June 2024.

Surveillance period	Farms tested	Companies	Farms positive	Companies positive	Farms positive on follow-up
Jan-Jun 2023	75	10	15 (16%)	3	13/14
Jul-Dec 2023	84	9	12 (14%)	3	3/11
Jan-Jun 2024	97	9	12 (12%)	2	0/11

positive, though HI negative. Ten of the eleven positive properties were tested at the ARC-OVR laboratory, before the Western Cape Provincial Veterinary Laboratory reopened after renovations. Approximately half the properties tested at OVR had at least one positive ELISA test.

Ostriches

The Western Cape had 270 registered ostrich establishments between January and June 2024, 18 of which were hatcheries. Thirty-two farms were empty and 48 had breeder ostriches only, leaving 172 eligible for avian influenza serological testing.

Of the eligible farms, 160 (93%) were tested. Four of the farms not tested with serology were seropositive farms, tested for slaughter using PCR and depopulated before 6-monthly serology could be done.

Twenty-two farms tested avian influenza seropositive but twenty had been seropositive since 2022 (one farm) or 2023. One of the other two farms tested negative on

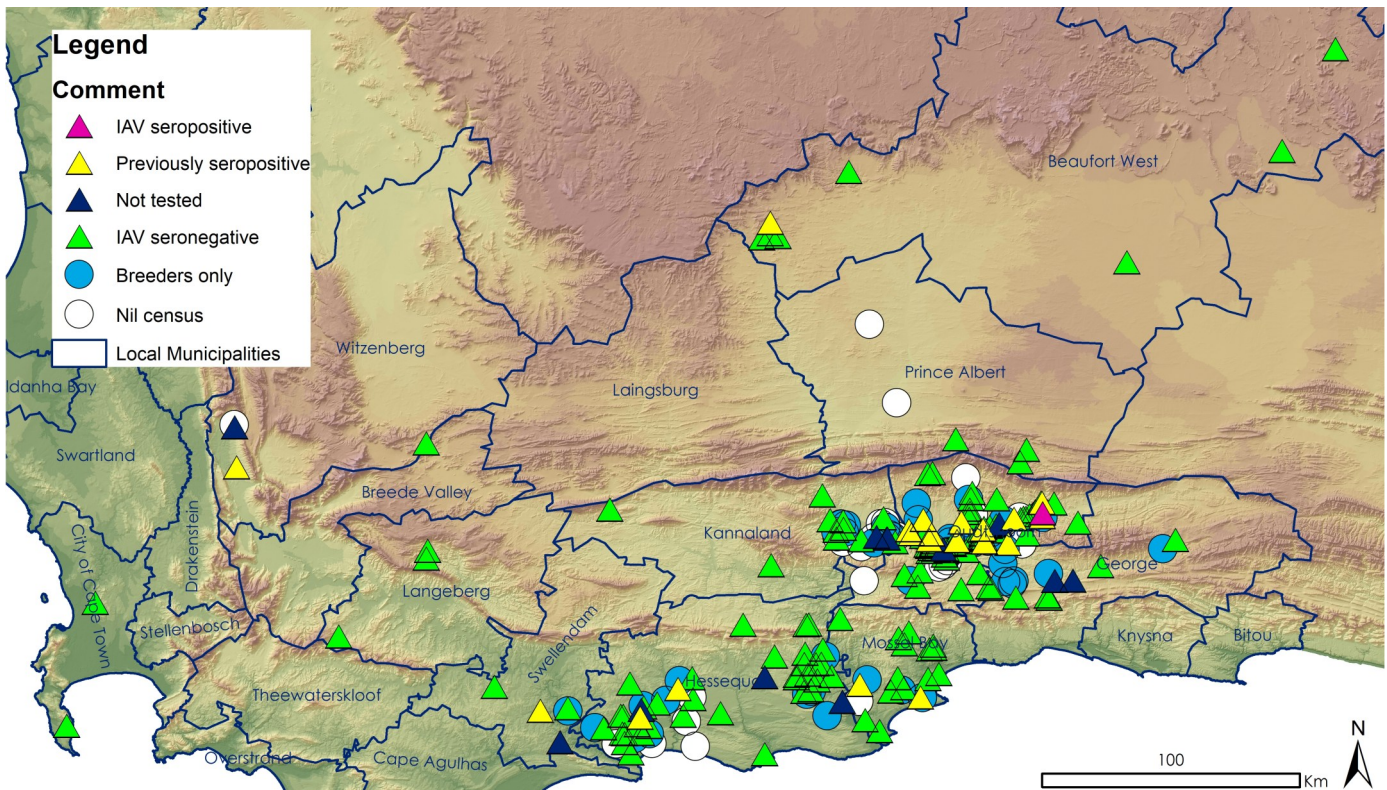


Figure 2. Avian influenza surveillance coverage in commercial ostriches in the Western Cape, January - June 2024.

follow-up testing, leaving one newly seropositive farm (prevalence = 0.6%). That farm tested PCR-negative and HI testing failed to indicate a subtype, so a previous, undetermined low pathogenicity avian influenza virus infection was concluded.

Summary

No evidence of HPAI infections was found during avian influenza surveillance in the Western Cape between January and June 2024. The only outbreak reported was one of an undetermined low pathogenicity virus in ostriches.

Outbreak events

Brucellosis was detected in **cattle** herds at **Botrivier** and **Zwelethemba, Worcester**. The herd at Botrivier was tested as part of tracing from another brucellosis outbreak near Worcester, reported previously. The two cows that tested positive had been brought from the infected Worcester herd in April. One of the farmers in Zwelethemba reported an abortion in early September. Heifers had been introduced from the other infected Worcester herd in August 2023 and four animals in the herd tested positive. Most of the infected animals in the original herd have now been branded and the first few batches have been slaughtered.

Rabies was diagnosed in a **water mongoose** (Fig. 3) from **Riviersonderend** after it entered a house and attacked a person and inanimate objects.

A **cow** on a farm in the **Swellendam** area tested positive for **rabies**. She was originally reluctant to move with the herd and later broke through a fence. Clinical signs included recumbency and a twisted neck, as well as ataxia and twitching of head muscles. This farm is about 4km away from another farm in the Swellendam area from where two rabid cattle were reported in August 2024.

Four more cases of **rabies** in **Cape fur seals** have been confirmed or suspected, bringing the Western Cape total to 27. A seal from **Mossel Bay** was euthanised after showing aggression and severe spasms of the hindquarters. She was found to be pregnant on postmortem examination and the brain of the foetus also tested rabies positive. Another confirmed case was a juvenile seal found dead on Muizenberg beach, **Cape Town** and a third case was an aggressive seal observed in **Velddrif**, that died overnight. There was also a suspected case from **Langebaan**, diagnosed based on an unprovoked and persistent attack on two canoeists. The animal was not found for testing.

Low pathogenicity H9N2 avian influenza was detected in **wild bird** faecal samples from a dam near a poultry farm in the **Caledon** area.

Two **ostrich** farms in the **Heidelberg** area tested **avian influenza** positive, but the virus subtype could not be identified. It was only possible to exclude H5 and H7 subtypes and therefore high pathogenicity avian influenza.



Figure 3: Water mongoose/ kommetjiegatmuishond/ *Atilax paludinosus* (Photo credit: D. Keats, shared under a creative commons licence (<https://creativecommons.org/licenses/by/2.0>) via Wikimedia)

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