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Highly pathogenic avian influenza A(H5N1) is in South Africa

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Highly pathogenic avian influenza H5N5 viruses isolated in Europe and (HPAI) clade 2.3.4.4b H5 viruses West Africa, it is believed that and consistent application of biosecurity (H5N1, H5N8 and H5N5) have migratory birds from West and Central measures is required to minimise the continued to scourge much of Eurasia Africa are the source of the HPAI chance of exposure to infected wild and parts of West Africa in recent H5N1 virus. Analyses of the H5N1 birds and prevent farm-to-farm months, affecting poultry and wild birds. viruses from the first two outbreaks transmission. It is prudent for The current HPAI epidemic in Europe determined that the isolates were not commercial operations to increase differs from the 2016/2017 HPAI H5N8 identical. Therefore, they were likely preparedness and have contingency epidemic because of co-circulation of introduced separately and did not occur plans in place to access resources three or more 2.3.4.4b H5 variants. In due to farm-to-farm transmission. (labour, trucks etc.) and acquire In addition, this outbreak was detected earlier in wild birds causing increased mortalities in wild bird populations compared to previous years. In 2021, a growing number of European (Germany, Hungary), Asian (Japan, China) and West African countries (Senegal, Mauritania and Nigeria) countries, continued to report outbreaks caused by HPAI H5N8 and H5N1 subtypes in wild birds and poultry. Poultry production and trade in these regions has been severely hampered.

Ahead of the winter season, the poultry industry in the Southern hemisphere has been on high alert for HPAI. As anticipated, HPAI H5N1 breached South African borders in March 2021. To date, six commercial poultry facilities in Gauteng (n=4), North West (n=1) and Western Cape (n=1) provinces have been affected by the incursion and control measures have been implemented. Since the viruses isolated thus far in Gauteng share common ancestors with H5N1 and

symptoms to increase awareness. Strict and consistent application of biosecurity measures is required to minimise the chance of exposure to infected wild birds and prevent farm-to-farm transmission. It is prudent for commercial operations to increase preparedness and have contingency plans in place to access resources (labour, trucks etc.) and acquire approvals for mass disposal of carcasses should the need arise.

Mild or asymptomatic human cases of avian influenza caused by H5N8 (n=7) and H5N6 (n=5) subtypes were identified in Russia and China by PCR testing, but no person-to-person transmission occurred. In addition, none of the other outbreaks caused by clade 2.3.4.4b H5 viruses produced any human infections to date. Therefore, the zoonotic risk remains low. However, people are still advised to avoid close contact with sick birds since these viruses can change rapidly by re-assortment events with other avian influenza viruses.

We urge all poultry veterinarians to maintain a high index of suspicion for HPAI and consider it as the primary differential diagnosis for all cases of increased morbidity or mortality until proven otherwise. The relevant state veterinarian should be immediately notified if HPAI is suspected, and appropriate samples should be sent for PCR testing at a DALRRD-approved laboratory. Poultry farmers should be reminded of the classical HPAI

Table 1: Summary of key characteristics of HPAI, and preferred samples in case of disease suspicion

Typical signs of HPAI:

- Drop in egg production
- Increased mortalities
- Diarrhoea (green to white)
- Swollen blue wattles/combs
- Neurological signs

Classic post-mortem findings

- Congestion & oedema of wattle/comb
- Red, swollen feet
- Petechial haemorrhage on viscera
- Congestion/haemorrhage of lungs
- Airsacculitis & peritonitis

Appropriate samples from mortalities for PCR confirmation of avian influenza

- Spleen tissue
- Caecal tonsil tissue
- Brain tissue
- Cloacal swabs

Other instructions for laboratory testing

- Clearly mark specimens (house/site #)
- Commercial sites: sample up to 30 birds
- Disinfect the outside of sample containers
- Must reach ARC-OVR within 48 hours

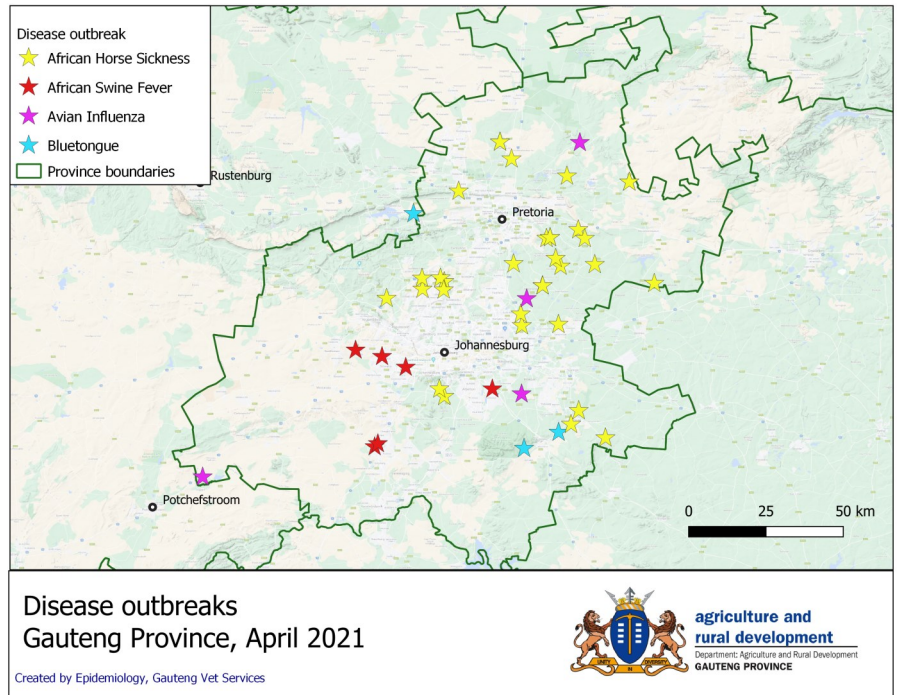
Animal disease outbreaks in Gauteng Province

* African swine fever (ASF)

There are 11 outbreaks of ASF currently under quarantine by GVS, and six of these were detected since the previous report. All the new outbreaks affect pigs kept informally on municipal land in makeshift pens, with little to no biosecurity measures in place. Investigations have not linked these outbreaks to each other, nor have any of the sources been found. Buying pigs with unknown health status either at auctions or from unknown individuals, free-roaming and swill-feeding remain risky practices identified at the infected properties. All affected sites are under strict quarantine, with proper disposal of carcasses and cleaning & disinfection procedures implemented. Surveillance in the 10km radius around each location and at auctions in these areas is ongoing.

* Highly pathogenic avian influenza (HPAI)

Four outbreaks of HPAI H5 have been detected in Gauteng Province so far, with three commercial layer farms and one broiler breeder farm under quarantine. The first site near Brakpan experienced high mortalities and the typical PM findings were observed. Sequencing confirmed it was caused by HPAI A (H5N1) clade 2.3.4.4b. The whole flock was destroyed (240 000 chickens) and disposal was done by burial at an approved site. The second infected farm was detected north-east of Pretoria when virus isolation results for samples collected in early March returned as positive for H5 virus. Oddly, mortalities and egg production have now recovered in this flock and PCR tests of tissues from mortalities in April were negative. In-depth investigations to establish the situation at this farm are ongoing. The third site, near Kempton Park, experienced the classical sudden high mortalities in two houses. Upon confirmation of HPAI H5, all chickens were culled ($\pm 40\ 000$) and will be disposed of by composting on site. Finally a farm in the south-west of Merafong experienced an outbreak of HPAI H5 in several houses on one of their three sites. All birds at the affected site were culled ($\pm 50\ 000$) and all efforts are being made to prevent spread to the other two sites by the staff.



* African horse sickness (AHS)

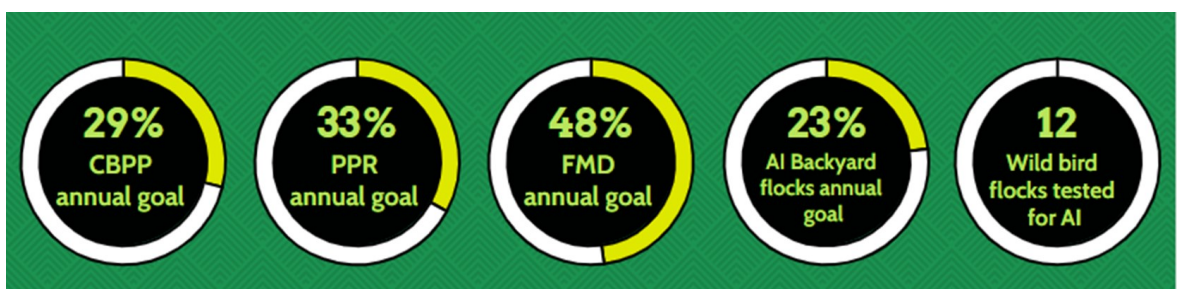
There were 35 outbreaks of AHS reported in April, affecting 41 horses. The northern and north-eastern areas of the province appeared the most affected, or are better at reporting. The dikkop form was commonly noted (22 of the outbreaks) and 13 of the cases were apparently vaccinated.

* Bluetongue (BT)

There were three outbreaks of BT in Gauteng and they were in similar areas to where the AHS outbreaks were found. Interestingly, the outbreak near Hartbeespoort dam involved three dogs in addition to sheep that were infected. It was believed that the dogs might have acquired the infection by consuming afterbirth of infected sheep. None of the sheep involved had been vaccinated against BT.

Surveillance summary 2021

Active surveillance for contagious bovine pleuro-pneumonia (CBPP), peste des petits ruminants (PPR), foot and mouth disease (FMD), and avian influenza (AI) is done monthly or quarterly (FMD) in Gauteng. All suspected cases are investigated.

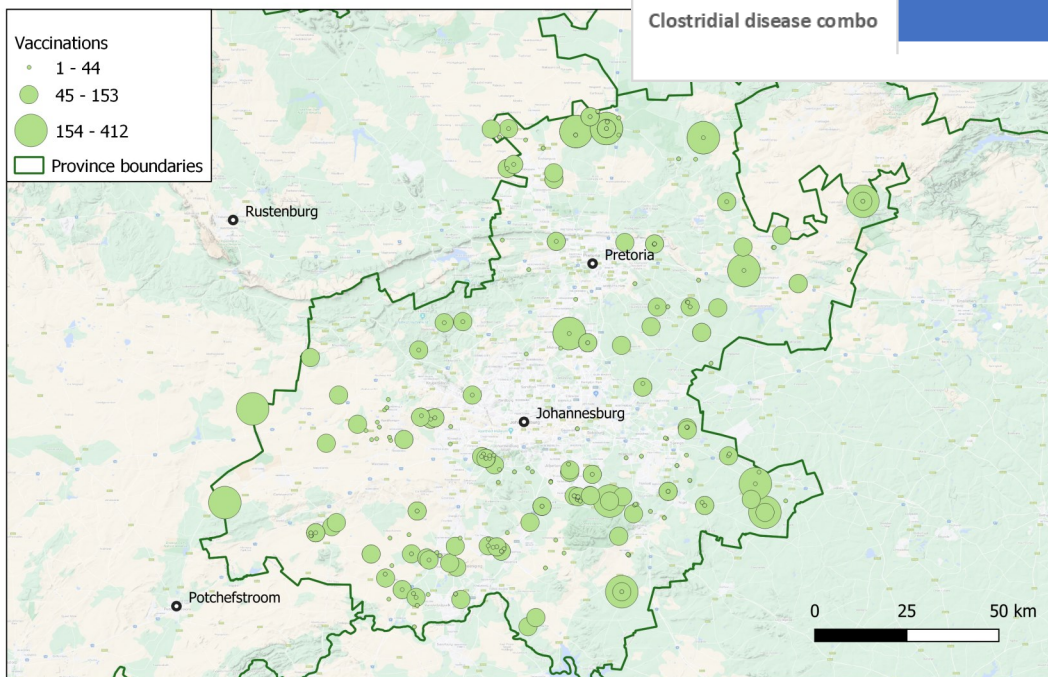
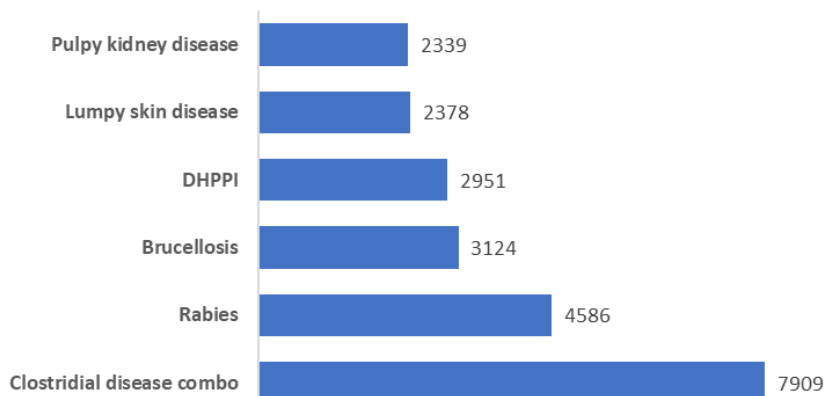


* Preliminary cumulative data

Animal disease reports and vaccination activities

GVS primary animal health and regulatory officials administer vaccinations to animals in the public sector on a daily basis. During April, a total of **23 287** animals were vaccinated.

Vaccinations by GVS, April 2021



DHPPI: Distemper, infectious hepatitis, parvovirus & parainfluenza virus.

Clostridial disease combo: Anthrax, botulism & black quarter.

(data may change and numbers are only estimates)

Vaccinations done by GVS April 2021

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