



Update: Monitoring for African swine fever virus in tampan ticks

The global distribution of African swine fever (ASF) virus has expanded rapidly in recent years from sub-Saharan Africa to the Russian federation, Europe, China, Indonesia, and the Philippines. Thus, ASF is no longer only African and threatens any country with a pig sector. Outbreaks impact global/national/local trade and deprive impoverished households of income and or protein.

The ASF virus is an environmentally-resistant double stranded DNA arbovirus with 24 different genotypes. The arthropod vector is the soft tick or tampan (genus *Ornithodoros*). All members from the pig family are susceptible to ASF. Warthogs are a reservoir host for virus replication and survival, but they do not become ill. Domestic pigs, bush pigs and European wild boars become very ill and often die of the infection.

The domestic cycle and sylvatic cycle transmission cycles are the most relevant in the South African context. In the **domestic cycle**, the virus spreads directly/indirectly. **Direct transmission** occurs through close contact between healthy and infected pigs. **Indirect transmission** occurs through ingestion of contaminated feed/water, contact with contaminated fomites (vehicles, clothes, equipment), a bite from infected ticks, or iatrogenically (injections, surgery). Indirect transmission of ASF is driven by human behaviour. In the **sylvatic cycle**, tampan inside warthog burrows feed on and infect the young warthogs. Being rapid feeders, they drop off afterwards and so are difficult to find (mainly reside in the

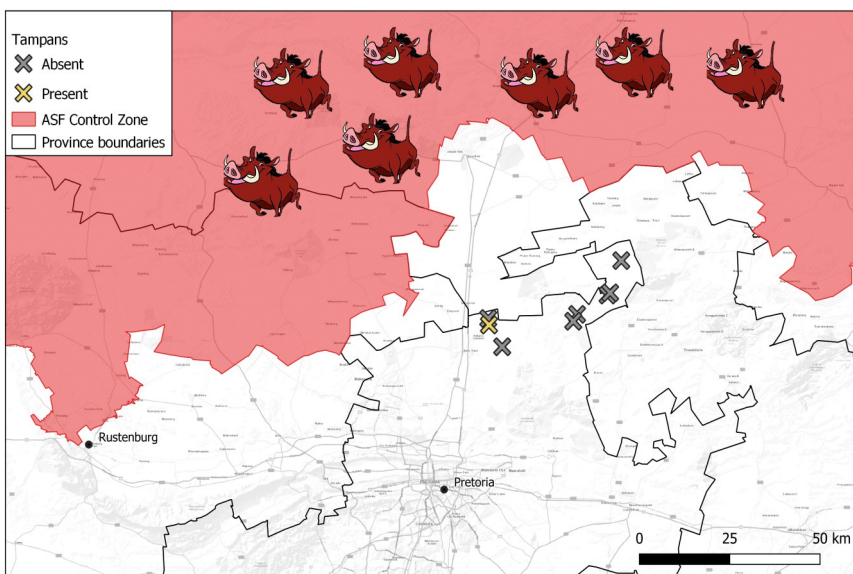
burrows). Domestic pigs become infected through infected tick bites, by having contact with warthogs or warthog skins with tampan on them, or if the pigs' housing is infested with the ticks. This cycle depends on presence of warthogs and suitable climate for tampan. In South Africa, this has historically been demarcated by the ASF control zone in the north-east of the country.

The southern edge of the ASF control zone is near Gauteng Province and can sustain a sylvatic cycle. Therefore, the Epidemiology section (GVS) conducts bi-annual surveys of warthog burrows in this region. This is a brief report of the latest findings.

Methods & Results. The January survey was delayed by heavy sustained rainfall - these conditions usually lead to poor success in finding tampan in warthog burrows. Nevertheless, we sampled 11 locations in the target area (Fig 2). Tampan were only found at one of these locations, within the Dinokeng Nature Reserve. The results of the Polymerase Chain Reaction test of the tampan submitted was positive for ASF virus DNA.

Discussion. This targeted survey revealed a warthog burrow with tampan positive for ASF virus, located outside of the ASF control zone in northern Gauteng Province. This finding demonstrates that infectious diseases do not respect the geographic boundaries imposed on them. It is an interesting finding, which is relevant to any pig keepers in this region. However, ASF virus has been

detected in tampan in this area before. This finding does not change the recommendations to pig keepers for ASF prevention in terms of the sylvatic cycle. The spread of ASF virus by means of infected tick bites remains extremely rare in this area. Domestic pig farms must be surrounded with pig-proof fencing to prevent any contact between domestic pigs and warthogs. This area is inside a nature reserve where warthogs are common, and domestic pig farming is considered high-risk and is discouraged. Pig keepers, farmers and Dinokeng reserve management were notified of this result. More intensive investigation of tampan and warthogs in the area could provide better understanding of the extent and spread of the ASF virus within the warthog population in this area. This work is being undertaken at the ARC-OVR.



Tampan Surveillance for African swine fever virus
Gauteng Province, Jan-Feb 2022

Created by Epidemiology, Gauteng Vet Services, using QGIS (<http://qgis.osgeo.org>)



Animal Disease Outbreaks during February

African swine fever. Four new outbreaks of African swine fever (ASF) were reported this month, all in the **Randfontein** state veterinarian area and situated within a 10km area of each other. Investigations were unable to pinpoint the route or source of virus introduction since none of the affected farmers had bought new stock recently nor reported feeding swill. This area generally has many small-scale pig keepers, and there is concern about the levels of environmental contamination. All sites had no biosecurity measures in place and variable infrastructure for keeping pigs.

Highly pathogenic avian influenza H5. There were four new outbreaks of highly pathogenic avian influenza (HPAI H5) reported during February, two each in wild birds and poultry.

Environmental faecal samples collected from Egyptian geese by the **Vaal dam** and swabs from a sick white stork at **Bon Accord dam** tested positive for H5 influenza type A. The white stork sample was later confirmed as HP H5Nx. The pathotype of the samples from Vaal could not be determined due to low levels of RNA.

An outbreak of HPAI H5N1 was confirmed at a large backyard poultry flock near **Evaton**. The birds became suddenly ill with high mortality. Although no new introductions were recorded, the owner reported buying feed at an auction and bringing back the remaining chickens that did not sell at auction a week earlier. Another backyard poultry farmer near **Fochville** reported high mortalities which were confirmed to be due to HPAI H5N1. The deaths occurred in the adult chickens which were allowed to range freely outside and not the younger chickens being raised indoors.

Lumpy skin disease. The number of reported vector-borne animal diseases being reported is starting to increase. Six new outbreaks of lumpy skin disease (LSD) were reported in cattle during February.

One outbreak near **Soshanguve, City of Tshwane**, affected 10 out of 20 cattle. The herd was not vaccinated, and the farmer had no knowledge about the disease. He was advised to euthanase 2 calves that were severely ill, separate and treat the other sick cattle supportively, and vaccinate the remaining healthy cattle. A single case of LSD was detected in a bovine at ARC-OVR, in **Onderstepoort**. It developed severe disease and subsequently died. PCR tests confirmed LSD. The rest of the herd is being vaccinated for LSD and their temperatures are being monitored daily. Another four outbreaks of LSD occurred, which were spread out in the Germiston state vet area. Two were near **Nigel**, one near **Vanderbijlpark**, and one in **Midvaal**. None of these herds were vaccinated and the owners were advised on LSD management and prevention.

Fig 2. Distribution of Animal Disease Outbreaks, Gauteng Province.

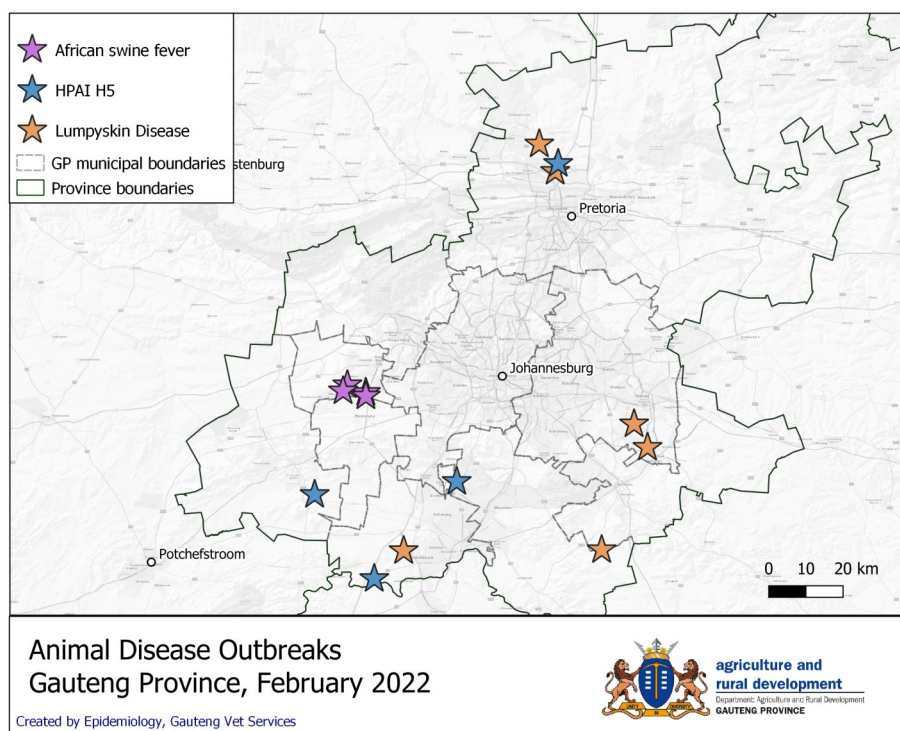
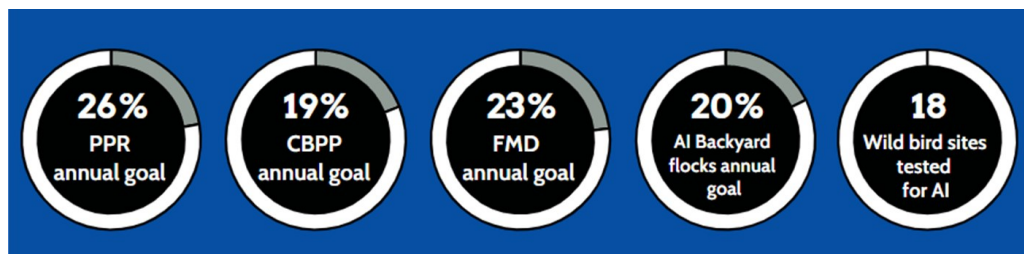


Fig 3. Cumulative Surveillance Summary 2022. Active surveillance for contagious bovine pleuro-pneumonia (CBPP), peste des petits ruminants (PPR), foot and mouth disease (FMD), and avian influenza (AI) is done monthly or quarterly (FMD) in Gauteng. All suspected cases are investigated.



Animal disease vaccination activities

GVS primary animal health and regulatory officials administer vaccinations to pets and livestock on a daily basis. The total number of vaccines administered in February was **22 541**. A breakdown of the types of vaccines and their geographic distribution are provided on the right hand side.

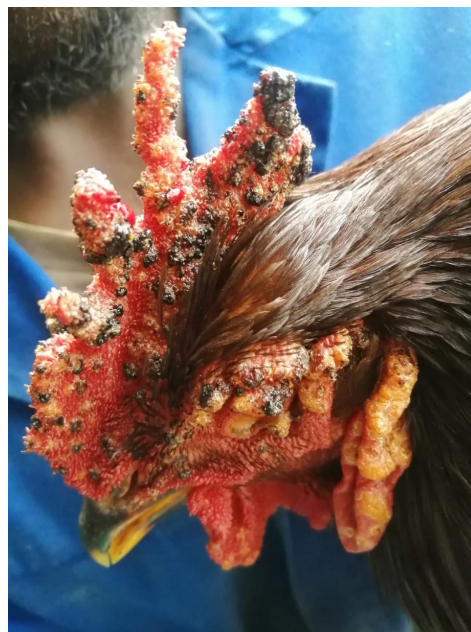
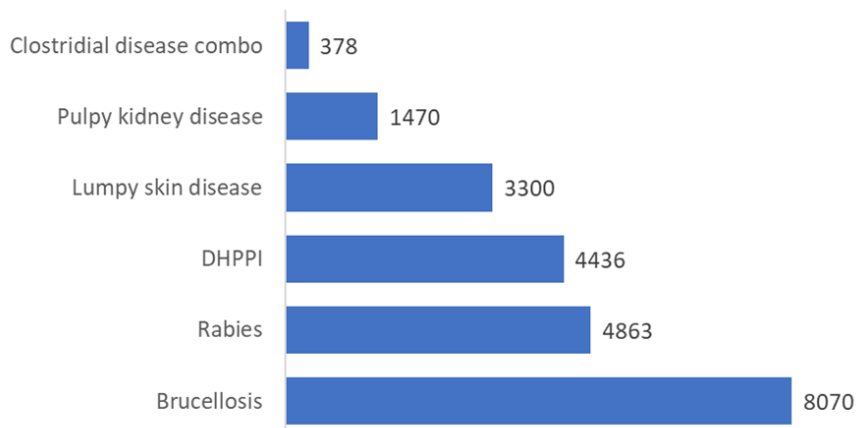


Fig 5. Avian pox virus lesions.

Photo by Rob Fouche

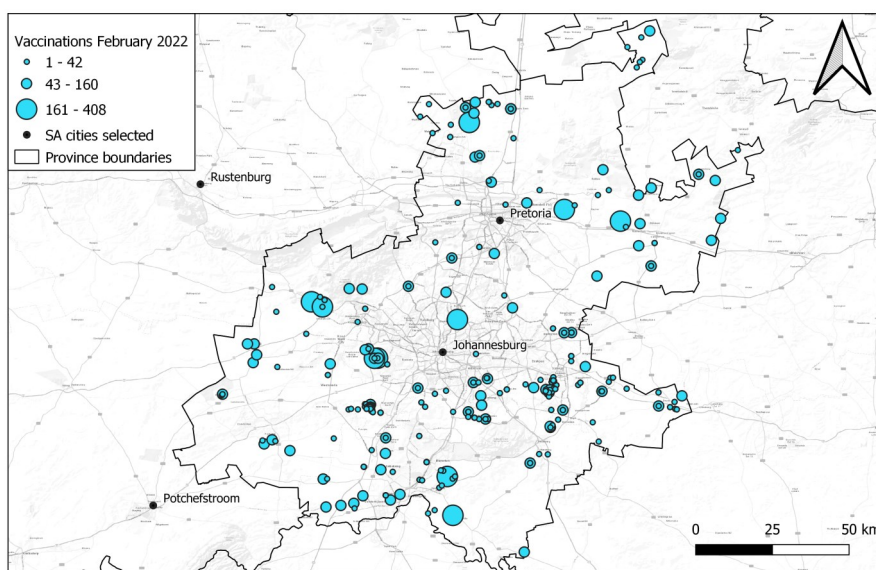
Vaccinations by GVS, February 2022



DHPPI: Canine distemper, infectious hepatitis, parvo & parainfluenza virus.

Clostridial disease combo: Anthrax, botulism & black quarter.

(Data may change)



Vaccination Reports by GVS, February 2022

Created by Epidemiology, Gauteng Vet Services Using QGIS (<http://qgis.osgeo.org>)

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GAUTENG PROVINCE