

EPIDEMIOLOGY REPORT

African swine fever breaks out in Cape Town

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An outbreak of African swine fever (ASF) was confirmed in the Mfuleni area of the Cape Flats on 24 February, after an increase in mortalities was reported in pigs.

Western Cape

Government

Aariculture

Clinical signs seen have included reddening of the skin, especially around the ears and hocks, paresis of the hind limbs with dog-sitting, anorexia and difficulty breathing (fig 1). The beginning stages of the outbreak were characterised by morbidity and mortality rates which were lower than would be expected during an acute outbreak of ASF in an immunologically naïve population.

Post mortem findings of infected pigs have included congestion of the ears, enlarged spleen, haemorrhages in the kidneys, gastrointestinal tract, hearts and lymph nodes and pulmonary oedema, congestion and interstitial pneumonia.

Initial cases were identified as serotype 2, which has previously caused outbreaks in other provinces, including the Eastern Cape and Gauteng in 2020 and the Eastern Cape, Gauteng and North West province in 2021.

The affected farming area of Mfuleni houses almost 6000 pigs belonging to approximately 150 different farmers. Livestock are kept in informal structures in close proximity to each other (fig 2).

Biosecurity practices are highly variable, ranging from farmers who enforce strict access control and hygiene measures (fig 3), to others who allow their pigs to roam free and forage for food (fig 4). The entire Mfuleni area has been placed under quarantine, with individual quarantine notices being delivered to each owner during an intensive census and disease survey in the area. Pig sales from auctions in the affected state vet area have also been halted

This is the first time that an outbreak of ASF has been confirmed in the Western Cape. There was a probable outbreak in the 1930s in the Western Cape after pigs were moved from the north of the country. At the time it was not possible to distinguish between ASF and classical swine fever, but the epidemiology of the outbreak suggests it was more likely to have been ASF. The outbreak was controlled by stamping out infected pigs and took several years to eradicate from the province.

In the last few years it is clear that the epidemiology of ASF in South Africa has been changing, with evidence pointing towards the establishment of a domestic cycle in the country.

Many of the pig owners in Mfuleni reported movement of people and pigs from the Eastern Cape after the festive season, and this may have been the route of introduction of the disease into the Western Cape. It is likely that more introductions from other provinces and internal spread of ASF will take place through movement of people, pigs and contaminated objects such as vehicles, clothing and farming equipment. Control of the disease is therefore only possible with the education and co-operation of the public.



Figure 1: Pigs in Mfuleni showing discolouration of the ears and hind limb paresis as a result of African swine fever (Photos: R Niewenhuis)



Figure 2: Pigs in Mfuleni are kept in informal sties made from a variety of building materials (Photos: R Niewenhuis)

The best way to prevent the introduction of any disease onto a property is to maintain strict biosecurity. Pigs should be bought from reliable sources and new additions kept in guarantine for at least four weeks (during which they should show no clinical signs of disease) before being introduced to the herd. Non-essential visitors should not be allowed onto pig farms and staff should be provided with equipment and protective clothing such as overalls and boots for exclusive use on the Vehicles and property. equipment that come from elsewhere should be disinfected on entry. Food that can contain or be contaminated by pork or



Figure 3: A farmer using F10 to disinfect the shoes of visitors. (Photo: M Fourie)

pork products should be avoided. If one has no choice but to feed swill, it must be cooked thoroughly by boiling it for an hour. Manure, dead pigs and any other waste should be disposed of responsibly, in a way that it will not contaminate surface or ground water. The virus remains viable for long periods (3-6 months) in body fluids and raw pork, so scavengers should not be able to access waste.

Pig owners across the province are urged to be vigilant for any unusual mortalities in their pigs and report to the local state veterinarian. Signs to look out for include fever, not wanting to eat, redness of the skin, difficulty breathing and abortions in pregnant sows, but any unusual mortalities should be investigated even if the clinical signs do not match the classical signs of ASF. Some outbreaks may not present typically, and the earlier they are detected the more opportunity there is to minimise spread of the virus.

Reference:

Penrith (2013) History of 'swine fever' in southern Africa.



Figure 4: Free-ranging pigs wallowing in a polluted canal (Photo: R Niewenhuis)

Journal of the South African Veterinary Association. http://www.scielo.org.za/scielo.php? script=sci_arttext&pid=\$1019-91282013000100059

Beyond our borders: H5N8 avian influenza reported in humans and other mammals

Human infections with H5N8 influenza A strains from birds have been reported for the first time from Russia.

In December 2020, 150 workers that took part in containing an outbreak of avian influenza on a poultry farm in Astrakhan Oblast had nasal swabs and blood samples taken. Seven of the workers tested positive, with serology results indicating recent infection. An H5N8 influenza virus was isolated from one of the samples.

None of the seven positive workers showed symptoms of illness. A total of 24 of their close contacts were traced



Workers in Russia were infected with H5N8 avian influenza after containing an outbreak on a poultry farm

and no symptoms of illness were reported in this group.

There is no evidence that the virus can he transmitted from human to human, and it is believed that all confirmed cases were infected by contact with infected birds. All 150 given workers were antiviral preventive therapy.

In November 2020, five mute swans (Cygnus olor) died at a wildlife rehabilitation centre in England. They were tested and found to be infected with H5N8 highly pathogenic avian influenza. About a week later, carcasses of four harbour seals (*Phoca vitulina*), one grey seal (*Halichoerus grypus*) and one red fox (*Vulpes vulpes*) that died at the same wildlife rehabilitation centre were submitted to the national animal health laboratory.

Histopathology of the tissues of these animals showed evidence of systemic viral infection. Subsequent testing detected an H5N8 influenza virus that was identical to that previously detected in the swans. All of the tested animals from this facility were wild animals being temporarily housed at the rehabilitation centre and their history and comorbidities were not known.

H5N8 avian influenza has been previously detected in two grey seals found dead in Poland in 2016 and 2017, providing further evidence of spillover between these species.

References:

WHO (2021) Human infection with avian influenza A (H5N8) - the Russian Federation. https://www.who.int/csr/don/26-feb-2021-influenza-a-russian-federation/en/

UK immediate notification of HPAI to the OIE: https:// wahis.oie.int/#/report-info?reportId=30629

Shin et al. (2019) Highly pathogenic avian influenza A (H5N8) virus in gray seals, Baltic sea. *Emerging Infectious Diseases*, 25 (12). https://wwwnc.cdc.gov/eid/article/25/12/18-1472_article

Beyond our borders: foot-and-mouth disease in dogs

A sample from a puppy that was fed the carcasses of lambs on a foot-and-mouth disease (FMD) infected farm in Iran in 2016 was examined at the World Reference Laboratory for Foot-and-Mouth Disease (WRLFMD).

The puppy was one of five young dogs that showed weakness and died within 48 hours of eating FMD-infected meat. Similar lesions were seen in the hearts of all five dogs from two different regions of Iran.

The cardiac tissue of one of the puppies was subjected to PCR and virus isolation at the WRLFMD and an FMD virus of serotype O was identified.

This is the first reported case of natural infection of dogs with FMD virus, though experimental infection of dogs has been successful in the past.

Although at this point in time infection of dogs with FMD is considered to be rare, this case provides evidence of the risk of feeding the carcasses of FMD infected livestock to other animals.

Reference:

Waters et al (2021) Foot-and-mouth disease virus infection in the domestic dog (*Canis lupis familiaris*), Iran, *BMC* Veterinary Research. https://bmcvetres.biomedcentral.com/articles/10.1186/s12917-021-02769-1



Puppies in Iran died after eating carcasses of lambs infected with foot and mouth disease

Outbreak events

Four **pig** herds in the Mfuleni area of **Cape Town** were confirmed to be infected with **African swine fever** (see article on page 1).

A case of **lumpy skin disease** in **cattle** was reported by a farmer north of **Beaufort** West.

Bluetongue was reported in **sheep** on two properties near **Murraysburg**. The affected sheep showed nasal discharge and coronitis.

Ringworm (dermatophytosis) was seen in a **calf** belonging to a small scale farmer near **Vredenburg** (fig 5). Treatment advice was given.



Figure 6: Post mortem oedema of the jaw and liver damage in sheep caused by toxic plants (Photos: E van Wyk)



Figure 7: Pteronia pallens (Photo: S Molteno)

Coccidiosis affected Jersey bull **calves** less than three months old on a small farm near **Grabouw**.

Contagious pustular dermatitis (orf) was



Figure 5: Signs of ringworm seen in a calf (Photo: M Swart)

detected in four **sheep** flocks in the **Beaufort West** area. Autogenous vaccine was made to treat the outbreaks.

Sarcoptic mange was seen in **pigs** in four herds in **Klipheuwel** and **Atlantis**. A **dog** near Atlantis was also seen with sarcoptic mange.

Nasal worm caused by bot flies (Oestrus ovis) was seen in sheep near Atlantis.

Outbreaks of **geeldikkop** (secondary photosensitivity caused by plant toxicosis) affected many **sheep** in the **Beaufort West** area (fig 6). Most outbreaks could be attributed to the consumption of wilted *Tribulus terrestris* (duwweltjie), but on one farm near Klaarstroom, no *Tribulus terrestris* was present. There had been very little rain in the area and the only plant in abundance was *Pteronia pallens* (Scholtzbos), which produces hepatotoxins (fig 7).

Krimpsiekte caused by cardiac glycoside poisoning w a s

reported from several farms in drier areas near Laingsburg, where very little grazing was available.

Acute **cardiac glycoside poisoning** as a result of tulp (Moraea species) consumption was seen near **Elim** in **cattle**.

An outbreak of **ulcerative balanoposthitis and vulvitis** (peestersiekte/pizzle rot) occurred in **sheep** in the **Beaufort West** area (fig 8). The farmer bought in new rams and within five weeks, clinical signs were seen in 80% of the rams and 30% of the ewes in the flock.

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Figure 8: Lesions of ulcerative balanoposthitis and vulvitis in sheep (Photos: E van Wyk)

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