



## African swine fever on the move

*Laura Roberts and Lesley van Helden*

In April and May this year, several outbreaks of African swine fever (ASF) occurred in South Africa affecting four different provinces in the north of the country (fig 1).

The outbreak in the North-West Province occurred just outside the border of the ASF control area in free-ranging pigs that had contact with warthog.

In Gauteng, Mpumalanga and the Free State, however, the outbreaks were possibly linked to illegal movement of pigs out of the controlled area, which were then sold at auctions and moved to various parts of the country.

In all cases, the outbreaks were detected after increased mortalities were observed in pig herds. In some cases the mortality rate was very high, but in the case of the affected farm in the Free State, the mortality rate was

relatively low and continued for an extended period of time.

All pigs on the infected properties were placed under quarantine prior to being culled and disposed of. The properties have also been disinfected.

In response to the detection of outbreaks within the province, Gauteng has suspended the sale of all live pigs at auctions and the keeping of pigs in auction pens.

It is worth noting that these outbreaks do not affect the trade status of South Africa. Exports can occur from officially recognized pig compartments which have biosecurity measures in place that allow them to certify freedom from several pig diseases.

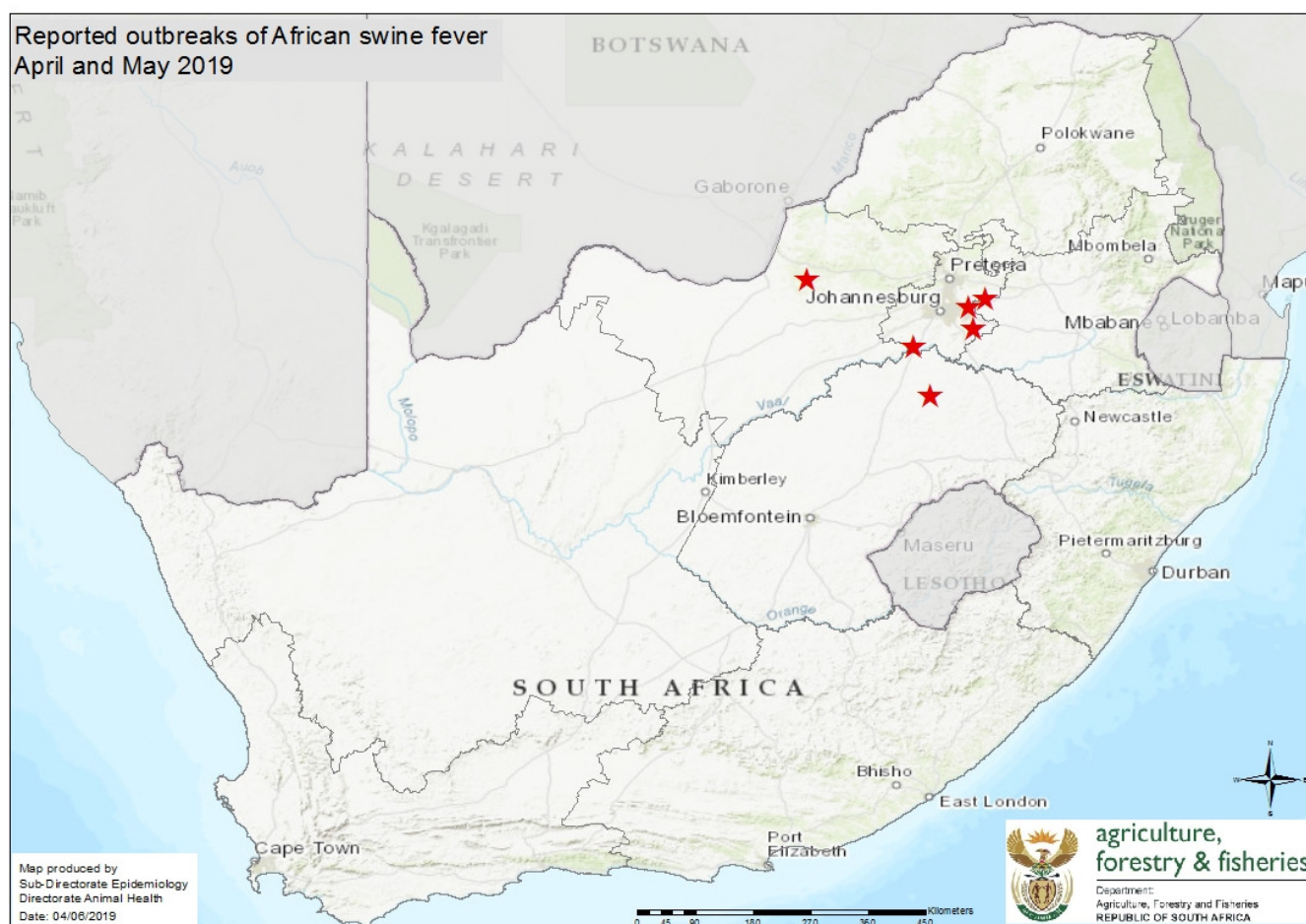


Figure 1: Outbreaks of African swine fever reported in South Africa in April and May 2019 (DAFF)

In South Africa the first outbreaks outside the control zone (which comprises most of Limpopo province and northern parts of North-West and Mpumalanga) were in 2012 (Mpumalanga & Gauteng) and then again from 2016 to 2018 (North-West, Free State and Northern Cape). The latter outbreaks were caused by a genotype not previously associated with South African outbreaks and raised suspicion of introduction from further north in southern Africa. The same genotype is causing outbreaks now and the original source is still unclear.

#### Clinical signs

The incubation period is 4-19 days (FAO). Pigs can **die peracutely** from ASF without showing any clinical signs, but they may briefly show high fever with reddening of the belly and extremities (fig. 2), recumbency, shade-seeking, huddling and rapid breathing before death.

In acute cases, infected pigs survive approximately two to seven days and show similar signs, but reddened areas may become purplish and small haemorrhages may be visible on the skin. Additional signs may also include ocular and nasal discharges, abdominal pain, constipation or bloody diarrhoea, hind-limb weakness, difficulty breathing due to lung oedema, nervous signs and abortions. Mortality rates can be up to 100%.

On post mortem, there are general signs of haemorrhage and oedema.

ASF is clinically indistinguishable from classical swine fever and can also be confused with septicaemia, so it is important to take samples for laboratory testing

The samples of choice in a dead pig include fresh **lymph nodes, spleen, kidney and tonsils** collected aseptically and kept chilled (at 4°C) but not frozen. These can be tested with PCR and virus isolation can be attempted. In a live pig, up to about five days after the onset of fever, virus may be detectable in blood. EDTA (purple top) and heparin (green top) tubes should both be used as they are suitable for PCR



**Figure 2: Pig with ASF showing reddening of the skin (EFSA)**

and virus isolation respectively. Samples should be sent to the Transboundary Animal Diseases section of ARC-OVR.

Organ samples can also be collected in 10 % formalin for histopathology and immunoperoxidase staining.

Serum samples (red/ yellow-topped tube) will only be useful if an infected pig survives an ASF infection for more than 1-3 weeks and has time to develop antibodies.

#### ASF status around the world

ASF spread to Europe (Portugal) in the 1950s and was reported first from West Africa (Senegal) in the '70s. The disease was eradicated in Europe by the early '90s, except for Sardinia, where it has become endemic. The virus was re-introduced to Europe to the Caucasus (Georgia) in 2007 and has spread since, across Russia, to the Ukraine in 2012 and eventually to Belgium in 2018. The disease may now be established in the wild boar population. In Asia, the disease was reported for the first time in China in August 2018. There has been an increase in cases worldwide since 2016 and concern is growing (OIE).

#### Transmission

ASF in domestic pigs in Southern Africa has been linked historically to tsetse flies (soft ticks) infected with the virus by warthogs. However, the virus can also be transmitted directly between pigs and via their products and can be maintained in a population without tsetse flies. Biosecurity, careful sourcing of new stock, and thorough cooking of any swill-containing pig products are therefore all very important, especially as cases in domestic pigs increase.

#### Survival in the environment & disinfection

ASF virus is very tolerant of cold and of pH extremes and can survive years in frozen meat, months in ham and weeks in pig pens, though it is susceptible to heat and desiccation.

2% sodium hydroxide (caustic soda) or sodium hypochlorite (bleach) with a 30-minute contact time will kill ASF virus, as well as 0.3% formalin. Detergents are effective, as well as commercial virucidal disinfectants. Infected or suspect meat should be cooked for at least 30 minutes at 70°C before being fed to pigs or transported.

#### Sources:

EFSA AHAW Panel (EFSA Panel on Animal Health and Welfare, 2017. Characterisation of African swine fever (ASF) for scientific opinion on vector-borne diseases. <https://www.arcgis.com/apps/MapJournal/index.html?appid=db62d00222644945862b40fe6277831a>

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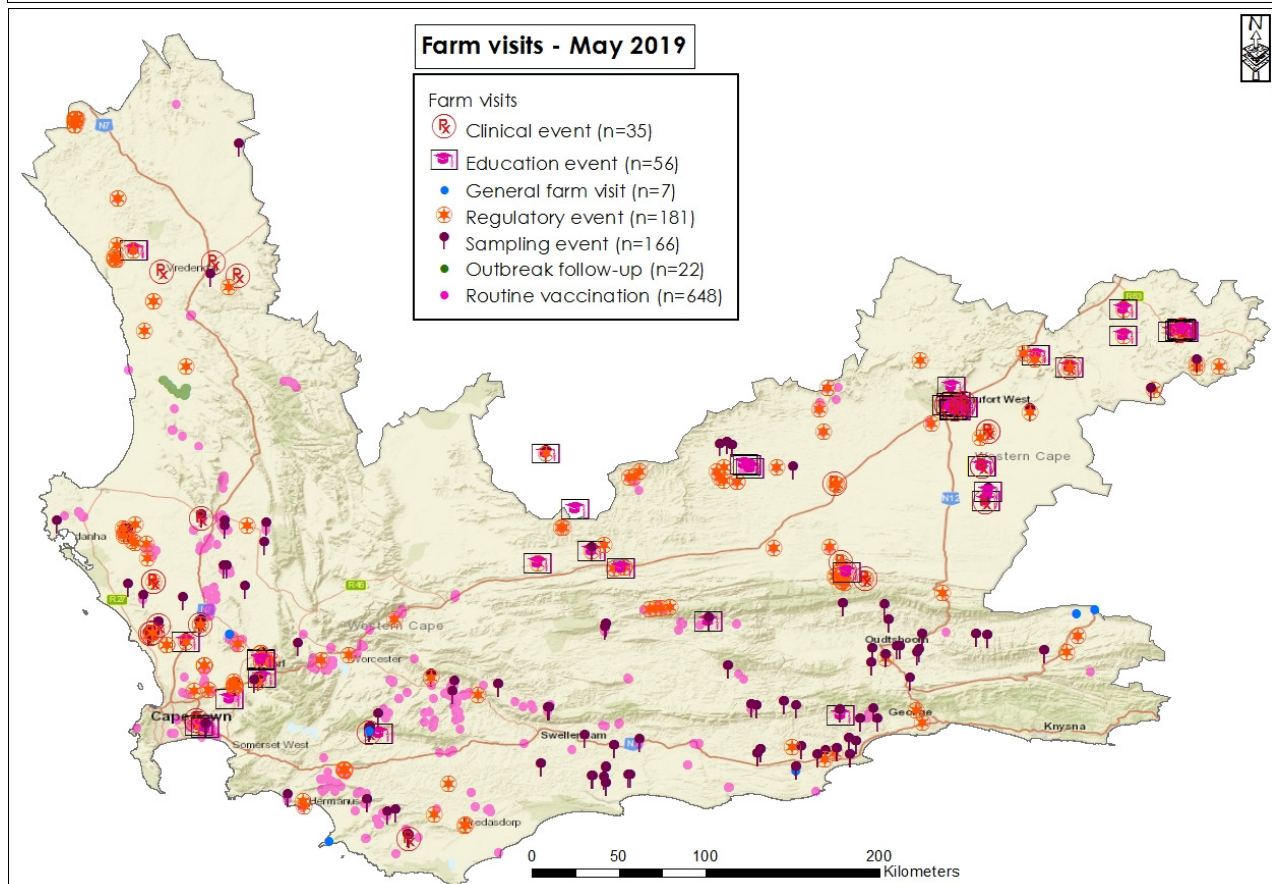
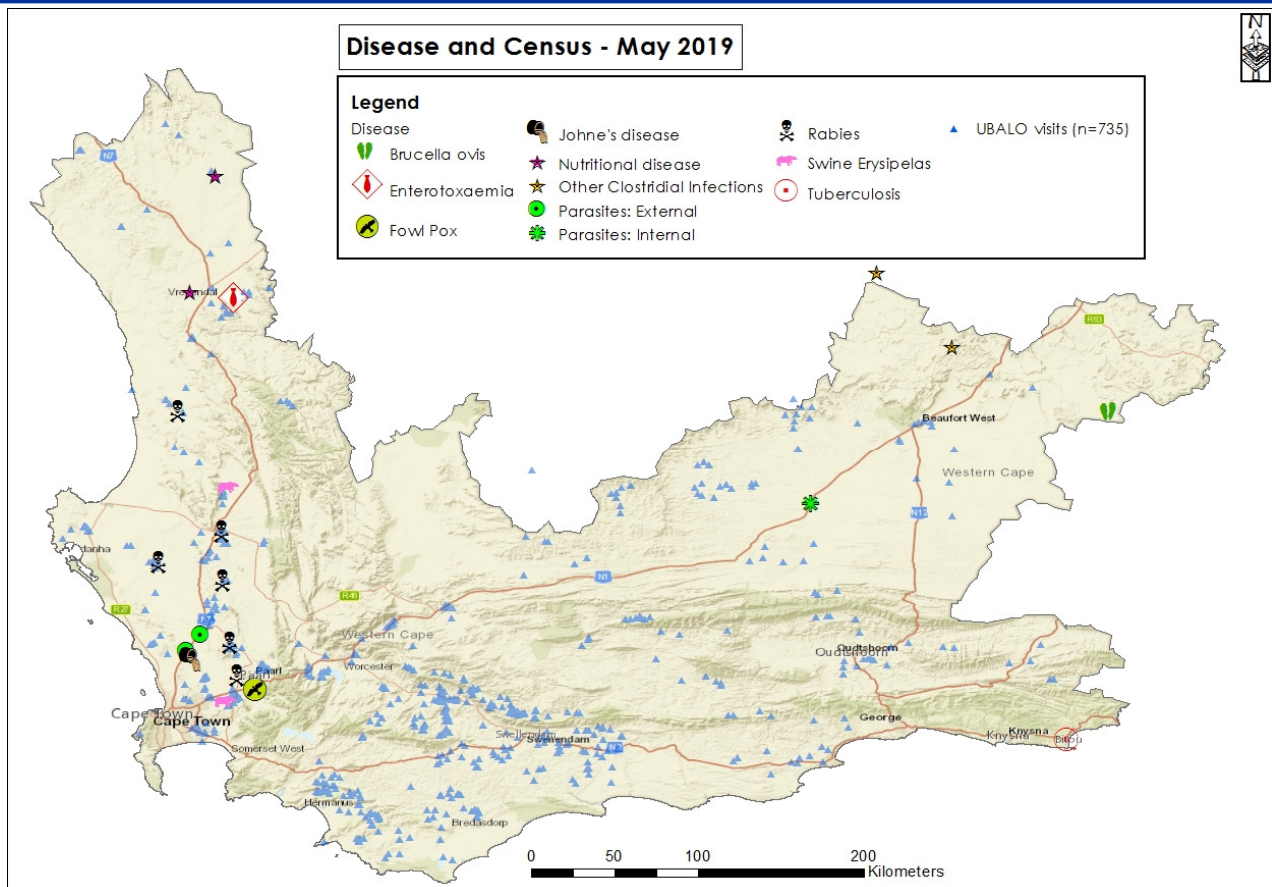
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Minutes of DAFF ASF workshops, November 2018 & June 2019

FAO (2009) Preparation of ASF Contingency Plans <http://www.fao.org/3/a-i1196e.pdf>



# Disease and surveillance



## Outbreak events

Six cases of **rabies** were reported in **bat-eared foxes** this month. Dogs and cats in the areas surrounding the cases were vaccinated against rabies.

- ⇒ A bat-eared fox near **Hopefield** attacked a farmer's vehicle as he was driving. The farmer shot the fox.
- ⇒ A private veterinarian on his way to work near **Wellington** saw a bat-eared fox next to the road showing nervous signs. He picked up the fox and euthanased it.
- ⇒ Another private vet found a bat-eared fox on his property near **Paarl**, showing nervous signs and appearing disorientated. He euthanased the fox.
- ⇒ A bat-eared fox showing nervous signs was seen next to the road by a farmer near **Piketberg**. He shot the fox.
- ⇒ A bat-eared fox found dead in a farmyard near **Graafwater** tested positive for rabies. There was no evidence of any human or animal contact.
- ⇒ Near **Mooreesburg**, a farmer saw a bat-eared fox walking around his garden with difficulty and lying on the lawn. When he returned from fetching his rifle to shoot it, it had disappeared and was not seen again. Although this case was not confirmed by laboratory testing, it is highly suspect for rabies.

A female **chacma baboon** was found in a garage of a residential area of **Plettenberg Bay**, showing signs of dyspnoea. She was euthanased and a necropsy revealed lesions in her lungs containing acid-fast bacilli. Mycobacterial culture and spoligotyping identified the organisms as **Mycobacterium tuberculosis**, Beijing strain. This strain is found commonly in humans with tuberculosis in the Western Cape and it is suspected that the baboon became infected through contact with contaminated food or other material. The troop to which she belonged has been observed foraging for food in residential areas and refuse dumps.

A **sheep** farmer near **Philadelphia** had noticed for the past few years that a small number of his ewes were becoming emaciated and dying. A private vet diagnosed ovine **Johne's disease** after a post mortem and histopathology. The farmer plans to vaccinate his flock to minimise losses.

Two **pigs** from farms near **Klapmuts** and **Eendekuil** were observed to have classic skin lesions of **erysipelas of swine** after slaughter and scalding of the carcasses. Pigs on the farms of origin were examined for signs of disease and a small number that appeared sick were subsequently treated with penicillin.

On a farm near **Paarl**, **fowl pox** lesions were seen on the younger members of a flock of about 80 **chickens** (fig 3).

**Brucella ovis** was diagnosed in seven young **rams** on a farm near **Murraysburg**.

**Clostridium novyi** affected **sheep** on two farms between Loxton and **Beaufort West**.

A necropsy of a **lamb** near **Vanrhynsdorp** revealed the cause of death to be **enterotoxaemia**.

Seven **lambs** died of **navel ill** near **Vanrhynsdorp**.

Two out of seven young **pigs** started showing fits and nervous signs near **Atlantis** as a result of meningitis due to **Escherichia coli** infection.

Three-week-old **lambs** died of **abomasal impaction** in the **Vanrhynsdorp** area as a result of eating sand.

**Nasal bots** were seen in **sheep** near **Kalbaskraal** and in **Abbotsdale**.

Infestation with **long-necked bankrupt worm** was seen in **sheep** near **Leeu-Gamka**.



Figure 3: A young chicken with fowl pox lesions on the skin of its face (M Fourie)

Epidemiology Report edited by State Veterinarians Epidemiology:

Dr Lesley van Helden (lesleyvh@elsenburg.com)

Dr Laura Roberts (laurar@elsenburg.com)

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