



Foot and Mouth Disease Outbreak

Background

Foot and Mouth Disease (FMD) is a highly contagious viral disease of cloven-hoofed domestic animals such as cattle, pigs, sheep, and goats, and wild ungulates such as buffalo and antelopes. It causes vesicles/blisters to form on the mouth, nose, teats, and feet. Thus, one may notice affected animals salivating and limping. Young calves, piglets and lambs can develop severe disease and occasionally die. In addition to causing significant production losses to the affected producer (dropped milk production, reduced growth), it is also a trade sensitive disease. The FMD-status of a country largely determines the eligibility for access to the lucrative international beef and pork markets.

In South Africa, FMD has been controlled using zoning. The FMD-endemic area in and around the Kruger National Park and a small part of northern KwaZulu-Natal was designated as the FMD-infected zone. A buffer area was defined around the infected zones, termed the FMD-protection zone. Here movement of cloven-hoofed animals is strictly controlled by provincial veterinary services, cattle are regularly inspected for signs of FMD, and those on the side close to the infected zone are vaccinated against FMD virus. The country also has high-surveillance areas, which are informed by risk assessments for introduction of the virus. The rest of South Africa was the FMD-free zone until 2019 when this freedom was lost.



Fig 2. Freshly ruptured (upper) and healing (lower) vesicular lesions on the tongues of two cattle bought at auction from a positive herd.

Photos by Dr Jaison Mpofo

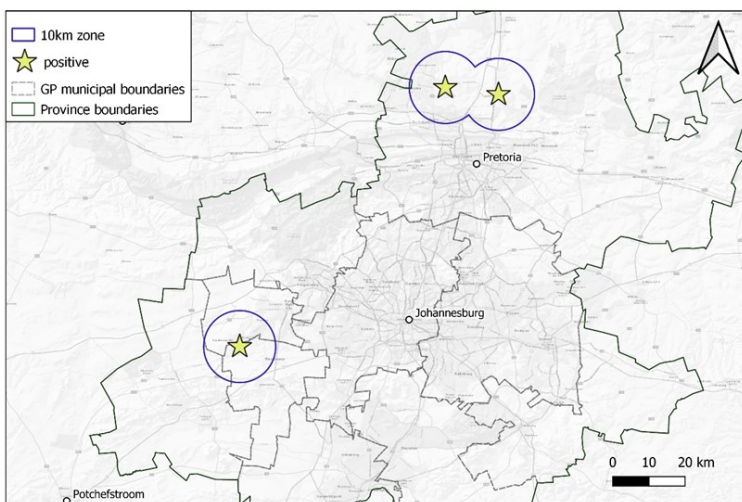
Two separate outbreaks of FMD virus in Gauteng Province are described in this report, occurring in late March (Fig 1).

Randfontein

The Randfontein state veterinarian was notified by the state veterinarian for Potchefstroom that a Randfontein farmer had bought eight cattle at a Potchefstroom auction on 18 March, and that the herd of origin had subsequently been confirmed as positive for FMD. At the farm, the state veterinarian found that the new owner had kept these eight individuals in a separate pen from the rest of his herd. Upon examination, two of the eight cattle had typical FMD epithelial lesions on their tongues (Fig 2). Subsequent laboratory tests confirmed the presence of FMD virus, serotype SAT 3. In the next few weeks, the virus spread to the other cattle on this property due to inadequate confinement of the first eight cases. A total of 150 cloven-hoofed animals were recorded on the farm, including some sheep and fallow deer.

Wallmannsthal

An astute auction owner noticed some cattle at his auction, which appeared to have faded F-brands on the side of their necks. This is



Foot and Mouth Disease (FMD) outbreaks
March 2022

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



Fig 1. Locations of FMD-positive herds: Randfontein and Wallmannsthal. The two locations north of Pretoria are part of the same Wallmannsthal outbreak.

the permanent marking given after vaccinating cattle against FMD in the FMD-protection zone with vaccination. FMD-vaccinated cattle are not allowed to leave this zone into the former FMD-free zone of South Africa. The auction owner immediately contacted GVS to intervene. Although the F-brand marks were very faint, they were confirmed to be present on three of the cattle. It further appeared that the cattle ear tags might have been changed. The investigation indicated that the cattle originated from the Giyani area in Limpopo Province. The state veterinarian for Giyani reportedly refused to issue a movement permit to move these cattle into Pretoria. The whole group at the auction (n=16) was examined and tested. Eleven were positive for FMD antibodies, and a swab taken from one with a wound in the mouth was negative for FMD. The state veterinarian later reflected that the mouth wound resembled a penetrating injury more closely than an FMD lesion. These findings probably indicated prior vaccination, at least in the F-branded individuals, but it was not possible ascertain if the others had seroconverted due to vaccination or natural exposure, since they were not F-branded and had been moved from an area that had active FMD outbreaks. The other buyers and sellers at the auction that day were informed to keep new animals separated from their stock and have been followed up by GVS officials.

The rest of the cattle from this group, located in Wallmannsthal, were also examined and tested. No clinical signs of FMD were found on any cloven-hoofed animals and no others with F-brand marks were detected on the property. It is in the communal area of Wallmannsthal, but the owner reported keeping them confined in a kraal and that they did not mix with other animals.

Control measures

Virus containment

The positive farms were immediately placed under quarantine and state veterinarian supervision. Any farms that are under investigation due to suspicion are also placed under precautionary quarantine until a conclusive finding about their FMD-status is reached. This includes direct neighbours of the positive farms, and any herds with suspicious lesions or any other possible links with other positive/suspect herds.

Controlled movement of cloven-hoofed animals coming from within a 10km radius of the positive farms has been implemented. For the time being, they may only leave this area on a veterinary movement permit if they are destined for slaughter.

The cattle that were detained at the auction were destroyed and disposed of in accordance with the Animal Diseases Act, act 35 of 1984.

Special permission was granted by the Director of Animal Health to vaccinate the cattle of the Randfontein outbreak. After 14 days, if there are no active lesions and when the viral load is deemed to be low enough, all cloven-hoofed animals on the premises will be transported off the property to be salvage slaughtered as per the approved protocol. This will include maturation, deboning, and de-

glanding of the carcasses. This will be done at a pre-approved abattoir ensuring safe disposal/processing of the bones, heads, feet and offal. After the animals are removed, the premises will be thoroughly cleaned and disinfected and remain under quarantine for a further 28 days.

Diagnostics

The ARC-OVR Transboundary Animal Disease (TAD) laboratory is being used for all FMD testing by GVS. Swabs and tissue specimens are tested for viral DNA by Polymerase Chain Reaction (PCR) test. Serology testing is achieved using both Solid Phase Competition ELISA and Non-Structural Protein ELISA.

Surveillance

A Disease Management Area was not declared in Gauteng Province due to the characteristics of the outbreaks. The positive cattle are on properties with adequate fencing, where contact with other cattle can be effectively prevented, and the owners are cooperating with the quarantine orders.

Active surveillance is being utilised in the 10km radius of the positive farms. All herds within 3km are inspected weekly and those within 4-10km are inspected fortnightly (Fig 3). The neighbouring farms are being tested serologically to confirm that the virus has been contained. With everyone on high alert these past few weeks, GVS received many reports of suspected FMD cases. These were either due to possible clinical lesions or alleged illegal livestock movements. All these cases were investigated. If indicated, they were tested for FMD and/or handed over to

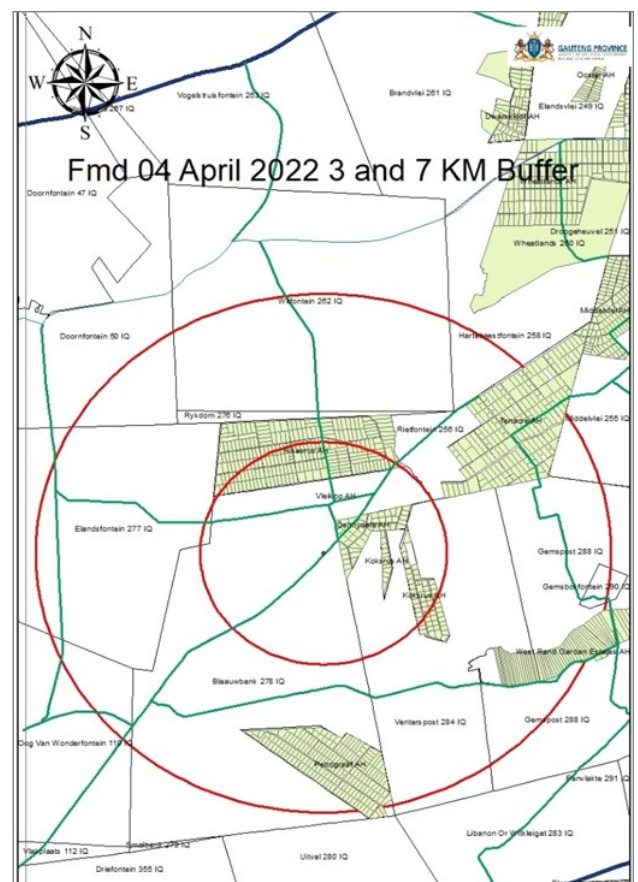


Fig 3. High surveillance area around the Randfontein outbreak farm. Map created with ArcGIS, courtesy of Mr Gerbrand van der Zel.

Veterinary Law Enforcement officials and the Stock Theft Unit as appropriate. Fortunately, no other outbreaks have been detected so far.

The routine surveillance for FMD continues in the form of inspections in the area within 3-5km of the ARC-OVR (TAD) laboratory, which is a FMD high surveillance zone. These inspections are to monitor that any live FMD virus within the facility is contained. Quarterly serological sampling is also done as part of this surveillance within the 3km area by the Epidemiology section.

Awareness & communication

GVS has been working closely with stakeholders in the meat and livestock industry as well as farmers in the affected areas. Awareness materials were rapidly developed and distributed via all possible channels including physical flyers, social media, radio broadcasts and media statements. We have been proud to see everyone pull together to face this challenge head on.

Biosecurity

The FMD virus is very contagious and GVS is taking every possible precaution to ensure that it does not spread as officials go about their work. Thus, veterinary officials are working in teams confined to certain areas and are equipped with adequate personal protective equipment and disinfectants. Further, any official who has collected samples from a herd that is under suspicion for FMD must avoid other cloven-hoofed animals for 5 days afterwards.

Prevention

The best way to protect cloven-hoofed animals from FMD is to practice a high standard of biosecurity and to abide by the livestock movement restrictions that are in place for the FMD-control areas (Table I).

Liesl De Boni

Table I. Tips to protect your livestock from getting foot and mouth disease

- Abide by the FMD veterinary movement restrictions
- Only buy healthy animals that come from a known source & location
- Separate all new arrivals from your own animals for at least 28 days, until you are satisfied that they are healthy
- Never move animals that are showing signs of illness
- Optimise farm biosecurity to prevent new diseases
 - ◊ Limit visitors
 - ◊ Maintain good hand hygiene and disinfect shoes, clothes, equipment & vehicles before & after use
 - ◊ Prevent nose-to-nose contact with the neighbour's animals
- Avoid buying animals from live auctions where many animals have gathered from various origins, especially if they are not intended for immediate slaughter
- Report any suspicion of FMD to your state veterinarian immediately

Livestock
Viral disease
ALERT



FOOT AND MOUTH DISEASE (FMD)

Protecting your animals against Foot and Mouth Disease.

Foot and mouth disease is transmitted by **moving cattle from infected premises.**

Do not to move animals if there is a suspicion of illness.

When buying animals: Know where the animals are coming from

Do not buy animals from a known Foot and mouth area or **outbreak area.**

Insisting on a **health attestation from the owner** of animals of the farm of origin - preferably from the seller's veterinarian.

Do not buy **visibly sick animals.** Do not buy animals with an unknown history.

Farm Biosecurity: Access control to your farm and animals; People, vehicles and farm equipment can spread the FMD. Virus and; disinfect feed trucks when entering your property.





Animal Disease Outbreaks during March

Two separate outbreaks of **foot and mouth disease (FMD)** in cattle were reported in Gauteng Province. Please refer to the first pages of this report for the details.

There were five new outbreaks of **African swine fever (ASF)** reported during March. Four of these were small-scale operators with poor biosecurity measures in place. In the fifth instance, carcasses were found abandoned in the veld. The State Veterinarian accompanied the municipality officials to remove them and collected tissue samples for testing, and ASF was confirmed. This indiscriminate disposal of infectious animal waste is unacceptable and poses a major risk to pigs in the area.

An outbreak of **highly pathogenic avian influenza H5 (HPAI H5)** was detected at a **live bird trader** in **Ekurhuleni**. The mortalities started after buying a new batch of 25 chickens from auction. The deaths started in this group of birds, which had already mixed with the other poultry on the premises. The poultry on the property were also allowed to free range.

Farm dogs killed a **black-backed jackal** when it entered the garden of the farmhouse in Kromdraai area, **West Rand**. Tests confirmed that the jackal was infected with **rabies** virus. Fortunately, there were no human exposures and the dogs were fully vaccinated. They received rabies booster vaccinations and are being closely monitored. Ring block vaccination for the area was done.

There was a significant increase in outbreaks of **African horse sickness (AHS)** this month. A total of **29** were reported, with 33 horses affected. Most of these outbreaks (86%, n=25) were confirmed by PCR test.

There was also a substantial increase in the number of reported **lumpy skin disease (LSD)** outbreaks. In total, **23** were reported in March, compared to six in February, and these appeared to be scattered throughout the province. Lack of, or inadequate, vaccination against LSD virus was found in 65% (15/23) of the outbreaks. The affected livestock owners were advised about the importance of vaccination and ectoparasite control, particularly during high rainfall years.

It was expected that the number of vector-borne disease outbreaks this year would be high as a result of the heavy rainfall received in the province this summer and challenges with obtaining sufficient vaccines in time for the season. Despite being on high alert for a possible Rift Valley fever outbreak this summer, GVS has not detected any cases yet.

Three separate outbreaks of **koi herpes virus (KHV)** were reported during March. All of the affected farms/facilities were placed under quarantine until the disease is eliminated. This is a contagious viral disease of koi carp (*Cyprinus carpio koi*). Individual biosecurity plans were drawn up for each location to prevent the disease from spreading and to protect them from new infections in the future.

Fig 4. Distribution of Animal Disease Outbreaks, Gauteng Province.

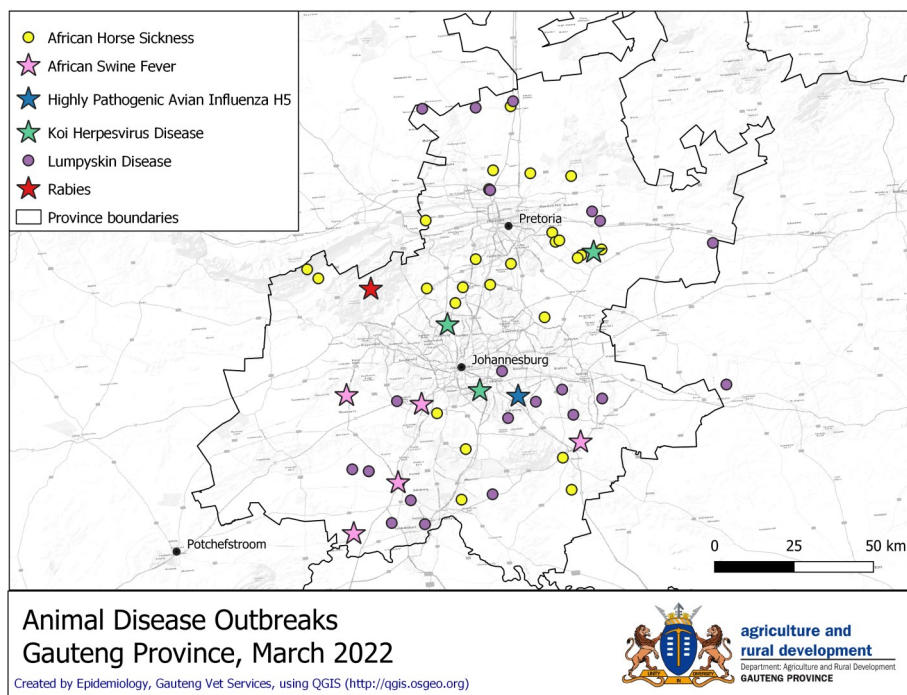
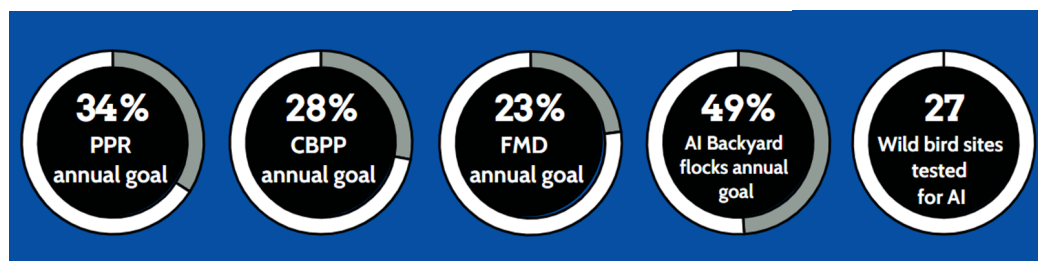


Fig 5. Cumulative Surveillance Summary 2022. Active surveillance for contagious bovine pleuro-pneumonia (CBPP), peste des petits ruminants (PPR), foot and mouth disease (FMD), and avian influenza (AI) is done monthly or quarterly (FMD) in Gauteng as part of the national program. All suspected cases are investigated.

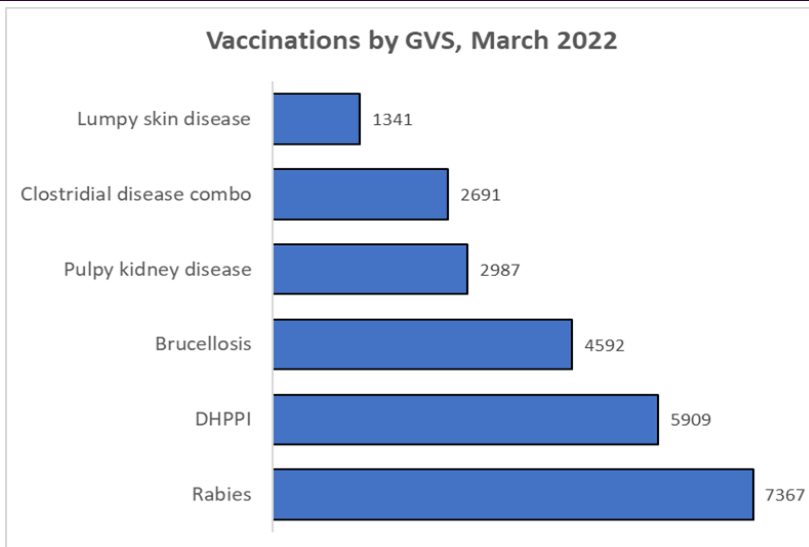


Animal disease vaccination activities

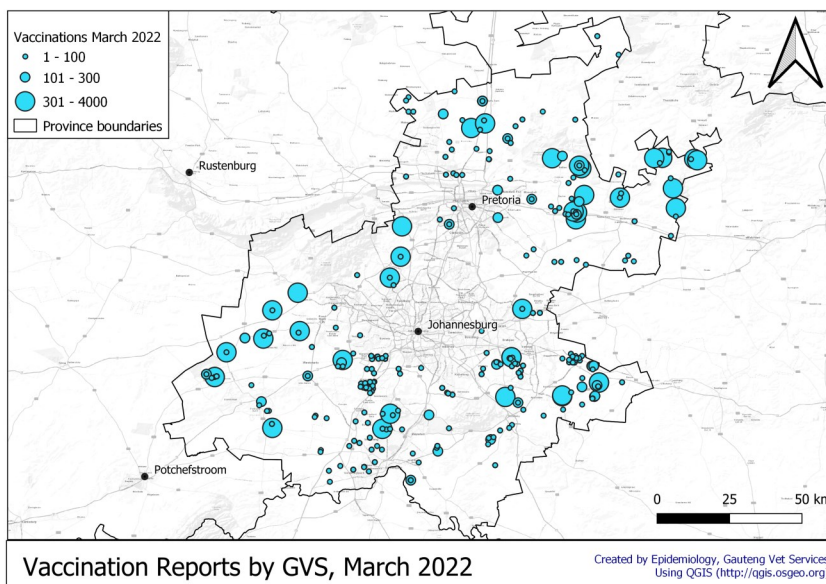
GVS primary animal health and regulatory officials administer vaccinations to pets and livestock on a daily basis. The total number of vaccines administered in March was **64 990**. A breakdown of the types of vaccines and their geographic distribution are provided on the right hand side of this page. The 40 066 Newcastle disease vaccinations are not shown in the bar chart.



Fig 6. This unvaccinated cow in Bronkhorstspuit area developed severe lumpy skin disease. Fortunately, she recovered fully. Photo by Mr Tsholofelo Mojanaga



DHPPI: Canine distemper, infectious hepatitis, parvo & parainfluenza virus.
Clostridial disease combo: Anthrax, botulism & black quarter.
 (Data may change)



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