Foot and Mouth Disease: Molemole Outbreak Follow-up Report

24 August 2020

Report compiled by:
Directorate: Animal Health
1. Introduction and summary

An outbreak of Foot and Mouth Disease (FMD) in the previous FMD free zone was detected on 1 November 2019. In total, 19 positive locations were identified, mainly through trace-back and trace-forward exercises. The last positive location was reported to the OIE on 26 February 2020 and more than 6 months have passed since the clinical end point on most affected properties. The process of resolving the outbreak is ongoing and quarantine has been lifted on 9 of the 19 positive locations.

2. Affected locations

The 19 positive locations include commercial cattle breeding farms and cattle feedlots, as well as a community farm. The clinically affected animals are cattle in all cases. The map hereunder shows the locations of the affected premises within the Limpopo Province.

Map 1: FMD locations in Limpopo Province

Note related to the map above - Some locations (open outbreaks) are in such close proximity to each other that they appear as one point on the map above.
3. Outbreak resolution

3.1 Slaughter of animals on affected feedlots and farms:

Ten of the affected premises were cattle feedlots or farms with cattle intended for slaughter. Depopulation of these farms is strongly supported and early slaughter was allowed from 6 weeks after the clinical end-point on each farm. The risk mitigation for early slaughter included disposal and/or processing of the heads, feet and offal and two abattoirs were specifically designated for this purpose. Animals on affected properties are allowed to be presented for normal slaughter once 6 months have passed after clinical end-point on the premises. The first farms reached this point during May 2020. More than 11 000 cattle from premises under quarantine have been slaughtered since 20 January 2020. Six of the infected premises were feedlots only and have been depopulated and disinfected, with quarantine subsequently lifted. Four feedlots still have animals in the feedlot or on the farm and these premises are still under quarantine.

3.2 Testing of animals on affected premises:

Nine of the affected premises are not exclusively feedlots and contain breeding animals, which are kept in epidemiologically separate groups in some cases. For these farms, consideration was given to the separation of the epidemiological groups on the farm, the history of how the premises became infected and the intended future use of the animals. Quarantine has been lifted on four locations on the basis of a combination of removing affected groups, depopulation if possible, or negative serological testing of remaining groups of animals. Five farms remain under quarantine pending serological tests.

4. Control measures implemented

4.1 Movement control:

All premises confirmed positive for FMD were immediately placed under quarantine and no movement of cloven hoofed livestock or their products are allowed off these premises. Biosecurity measures are also implemented on the affected premises to prevent the spread of the disease by means of fomites.

A large number of locations were identified with possible links to the infected premises. All linked premises were placed under precautionary quarantine until they had been followed up and tested. These included premises which received animals from specific auctions, or from known positive locations, and also premises that supplied animals to specific auctions.
Direct neighbours of known positive premises and home villages of the workers on positive premises were also identified as “linked premises”.

During initial stages of the outbreak, all farmers were encouraged to limit the movement of cloven hoofed animals until the extent of the outbreak had been fully determined. As an ongoing precaution, farmers are still advised to obtain a veterinary health declaration to confirm the absence of clinical signs of FMD on the premises of origin and in the animals to be moved.

The movement of cloven hoofed animals and their products out of the FMD controlled zones in Limpopo, Mpumalanga and KwaZulu Natal Provinces is still applied. After an FMD outbreak was detected in the FMD free zone in the Vhembe district of the Limpopo Province in January 2019, a Disease Management Area was declared and strict movement restrictions were implemented. On 22 June 2020, these measures were aligned with movement control in the protection zone.

4.2 No vaccination

The use of FMD vaccine has not been indicated in controlling this current outbreak, as the main means of disease spread has been through transport of animals between commercial farms. When outbreaks spread contiguously, vaccination may be appropriate, especially where there are no fenced farm boundaries such as in communal areas. In the current outbreak, there are defined infected properties with fences, which made the use of emergency vaccination superfluous.

4.3 Ban on gathering of animals

Since all the affected properties were linked directly or indirectly to specific auctions, a Government Gazette notice was issued on 4 December 2019, temporarily prohibiting such gatherings. This prohibition was reconsidered once more than 90% of the primary contact premises linked to the auctions had been visited and their status determined. The prohibition on the gathering of cloven hoofed animals from two or more properties, for distribution to two or more properties, was lifted on 18 February 2020.

5. Epidemiological investigation

The outbreak was confirmed on 1 November 2019 by Polymerase Chain Reaction (PCR) at Transboundary Animal Disease – Onderstepoort Veterinary Research of the Agricultural Research Council. The virus responsible for the outbreak is a SAT 2 serotype and is closely related to the virus responsible for the outbreak that occurred in January 2019, as well as the outbreaks in the FMD protection zone in May and August 2018.
Properties with possible links to positive locations or to specific auctions were investigated to confirm their status with regards to FMD. These properties were placed under precautionary quarantine and samples were collected from a representative number of animals and subjected to serological tests, using the Solid Phase Competition ELISA. Animals on linked locations were clinically inspected and, if any lesions were found that may indicate FMD, tissue samples were also collected and tested by means of Polymerase Chain Reaction (PCR).

All affected properties could be linked directly or indirectly to four specific cattle auctions which took place in September and October 2019 at two auction venues. Backward and forward tracing from these auctions and the known positive locations were conducted, with more linked locations added as the investigation progressed. A total of 200 properties were followed up with clinical inspection and serological testing.

6. Surveillance activities

Various surveillance activities for FMD are routinely conducted in South Africa and have continued during and following the Vhembe outbreak in January 2019 and the Molemole outbreak in November 2019. Together, all of these surveillance activities result in a comprehensive surveillance system able to detect Foot-and-mouth disease (FMD), should it occur in the Free Zone or the Protection Zone.

5.1 Clinical surveillance and disease investigations of any suspect cases or illegally moved animals (whole country)

FMD is a controlled disease in accordance with South African legislation, and anyone who is aware of or suspects the occurrence of FMD, is required to report that suspicion to the local state veterinarian. This occurs periodically, and when it happens such reports are followed-up by clinical inspection and by testing as appropriate. In the period from January 2019 to July 2020, approximately 90 clinical suspicions were followed up and were all found to be negative for FMD. These suspicions were reported in 6 of the 9 Provinces, and in cattle, sheep or goats.

5.2 Continuous Sero-survey of the Protection Zone and the High Surveillance Area of the Free Zone

The FMD Continuous Survey is an active targeted surveillance programme, which was started in April 2015, and amended in April 2018. The survey targets the Protection Zone without vaccination, as well as the FMD High Surveillance Area (which is part of the (suspended) Free Zone). These are the highest risk areas for entry of the disease into the
Free Zone, due to being adjacent to the Kruger National Park and international borders. The survey is run on a continuous basis to allow for early detection should there be any disease occurrence in the Protection Zone or the High Surveillance Area. At each sampling point, clinical examination is done and serum samples are collected for serology.

5.3 **Serological testing done for export purposes (in the Free Zone)**

Serological testing of cattle and other species is periodically done for export purposes (when required by the importing country). This is in the Free Zone and also forms part of the surveillance system as passive surveillance.

5.4 **Serological testing of buffalo in the Free Zone**

According to the Buffalo Protocol of 2002, only FMD free buffalo may be kept in the Free Zone, on farms registered for the keeping of buffalo. Furthermore, all buffalo must be tested for FMD prior to any movement being permitted. Buffalo are also tested at the owner’s request for herd screening purposes from time to time. In this way, a large number of buffalo are tested annually from all over the country. This forms part of the surveillance system as passive surveillance.

7. **Trade implications**

Most trade partners have retained the negotiated agreements for safe commodities, based on the guarantees provided for the processing to ensure inactivation of the virus. South Africa is also confident to certify for the safety of pork products from known FMD free pig compartments.