



DDs for Foot and Mouth Disease: please recognise & report

Laura Roberts

As you will be aware, a foot and mouth disease (FMD) outbreak in Limpopo province in January 2019 caused South Africa to lose its FMD free zone without vaccination status. To regain FMD-free status, South Africa must again actively prove freedom from FMD.

In February, the national Director: Animal Health at the national Department of Agriculture Forestry and Fisheries (DAFF) issued letters requesting private and state veterinarians to report suspect FMD cases; either cases where FMD was at some point suspected or cases where FMD is a differential diagnosis. The aim is to show that effective passive surveillance is ongoing all over the country. If we can show that we know what FMD looks like, and that we are looking and have not found it, it will assist with convincing our trade partners that most of the country is free from FMD.

The letter included a request for this information :

- Location
- GPS coordinates
- Species
- Number susceptible and affected
- Reason for call
- Clinical signs
- Conclusion



Figure 1: Excessive salivation is a sign of pain in the mouth¹²



Figure 2: Erosion on the dental pad due to FMD⁹

Please send the information to FMD@daff.gov.za and to your local state vet (refer to <http://www.elsenburg.com/services-and-programmes/veterinary-services-0#s=Animal-Health-and-Disease-Control> in the Western Cape).

First of all, a refresher on FMD clinical signs :

FMD affects cloven-hooved animals and the severity of clinical lesions caused by FMD virus depends on the host species, breed and immunity, and the virus strain. The incubation period is usually between two and eight days, after which vesicular lesions form. These then rupture to form erosions or ulcers¹. In cattle, the lesions occur usually on the dorsum of the tongue, though they can occur elsewhere in the mouth. Lesions on the feet occur in the interdigital space, at the coronary band and on the bulbs of the heel. Teat lesions occur in cows and the pain caused can lead to difficulties in milking and secondary mastitis². In young domestic animals, peracute deaths can occur due to a myocarditis, which causes a white streaked appearance of the myocardium often referred to as "tiger heart disease"^{2,3}.



Figure 3: Ulceration of the interdigital space due to FMD⁹



Figure 4: Healing FMD lesions (5 days old) in the mouth¹²

| Differential diagnoses for FMD | Clinical signs similar to FMD |
|---|---|
| <ul style="list-style-type: none"> • Vesicular stomatitis • Swine vesicular disease • Vesicular exanthema of swine | These diseases are clinically indistinguishable from FMD ⁴ but should not, however, occur in South Africa |
| Bovine viral diarrhoea and mucosal disease | Some strains of BVDV (BVD type 2) can cause ulceration in the mouth and lesions on the coronary band and on the skin between the claws. Mucosal disease: erosive lesions on the mucosa of the nose and mouth. |
| Infectious bovine rhinotracheitis (BHV-1) | Inflammation of the muzzle and nostrils ⁶ |
| Bluetongue | Hyperaemia and congestion followed by oedema of the muzzle and lips, ulceration and necrosis of the mucosae of the mouth. Hyperaemia of coronary band of the hoof and lameness due to coronitis or pododermatitis ⁷ |
| Bovine mammillitis (BHV II & IV) | Oedematous plaques on the teats that develop into vesicles. These may rupture, leaving ulcerated areas ⁵ |
| Bovine papular stomatitis | Erythema and/or proliferative & erosive lesions on muzzle, lips, nostrils and mouth ¹³ |
| Malignant catarrhal fever | Ulceration, crusting and sloughing of the muzzle; multifocal erosions and ulcerations of the oral cavity and nasal passages; exudative dermatitis of udder, teats, interdigital spaces and coronary bands ¹³ |
| Orf (contagious pustular dermatitis) | Pustules & scabs on abraded skin including muzzle, gums, coronary bands, teats ⁸ |
| Peste des petits ruminants | Crusting scabs on lips, erosive and/or necrotic lesions in oral cavity ⁴ (Not reported in South Africa yet but has reached as far south as Tanzania and Zambia) |
| Interdigital dermatitis | Hyperaemic & swollen interdigital skin with greyish exudate |
| Digital dermatitis | Moist ulcers above the heels |

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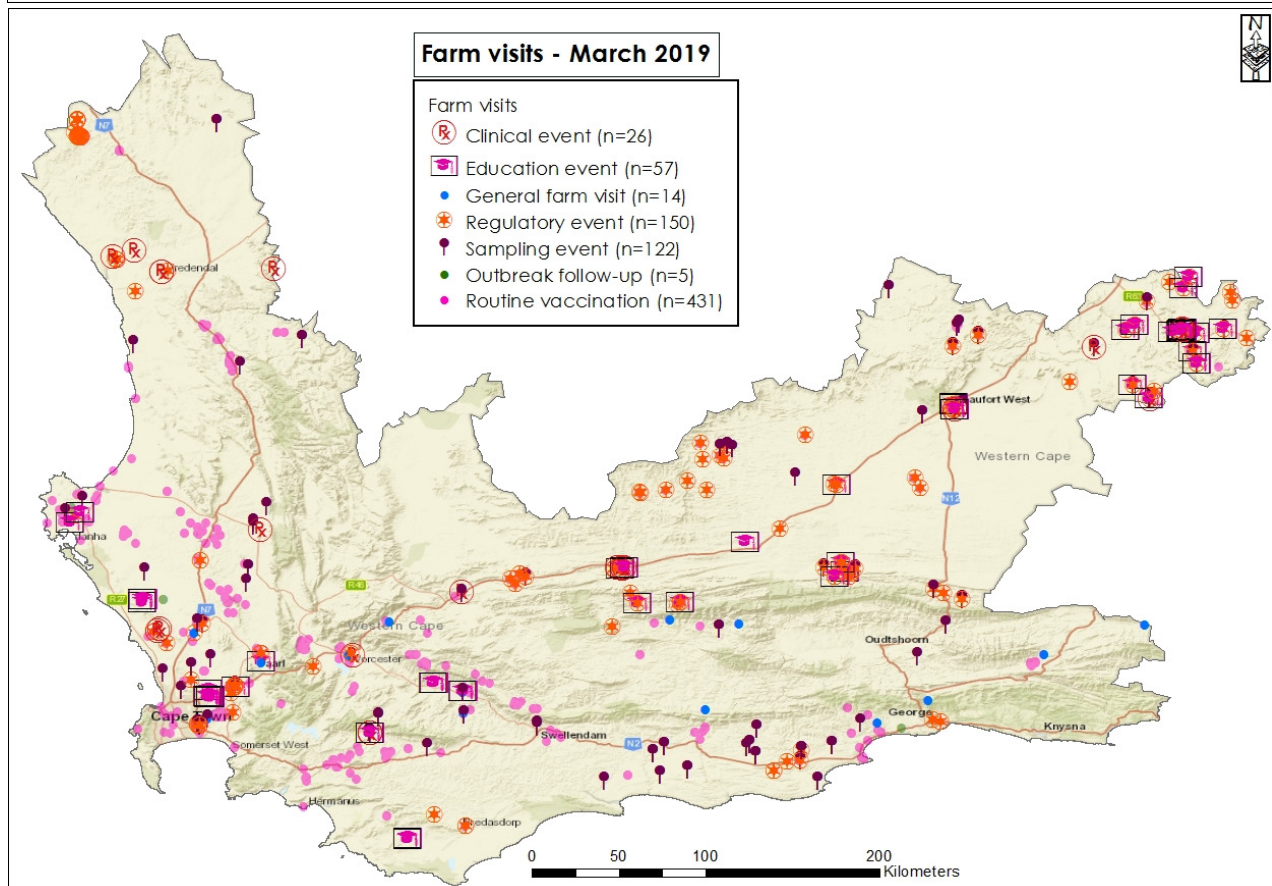
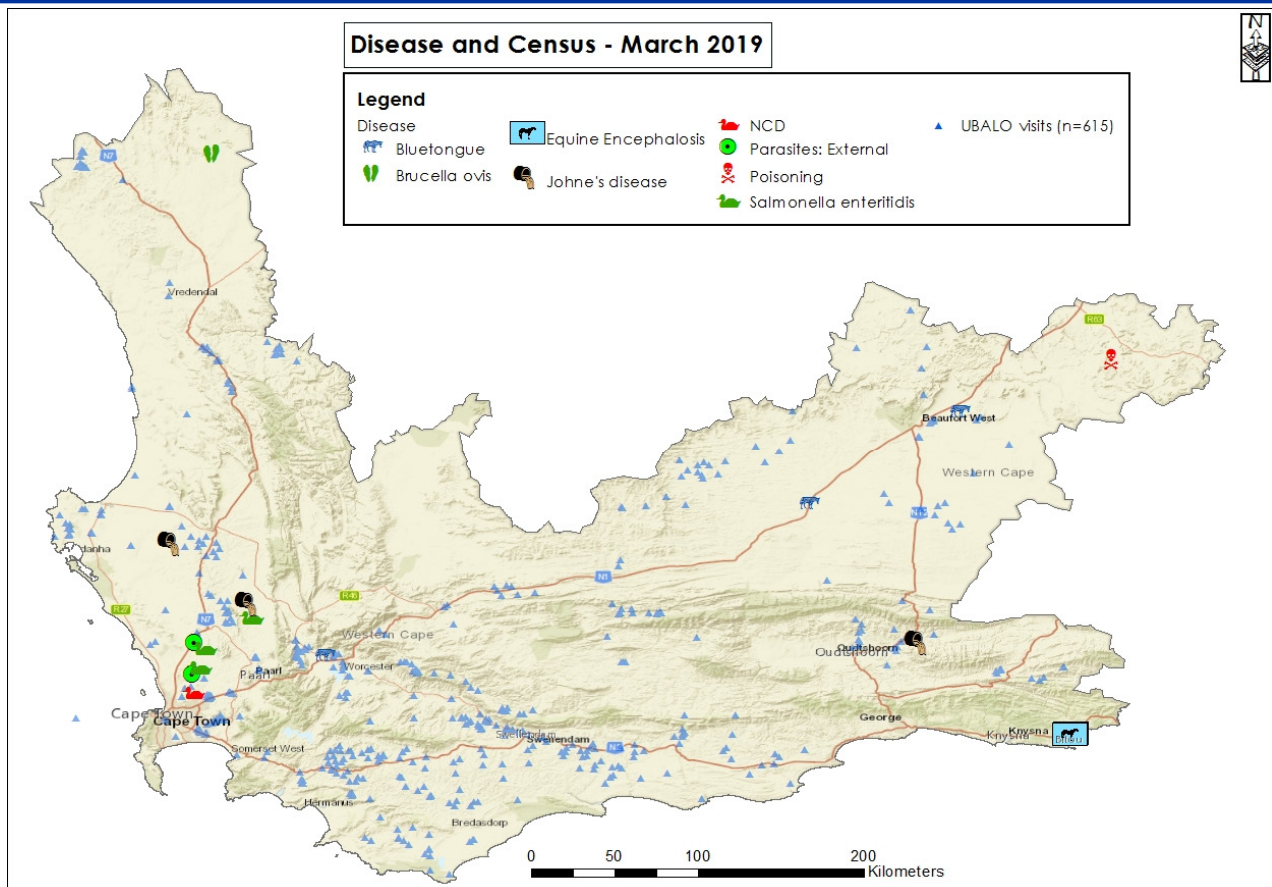


Figure 5: Erosions on a pig's snout due to FMD¹⁰



Figure 6: Ruptured FMD vesicle on cow's teat ¹¹

Disease and surveillance



Outbreak events

Bluetongue was reported on several farms, including near **Worcester** where seven **sheep** out of approximately 1000 showed oral ulcerations, swollen tongues, nasal discharge and corontis, with two later dying. The flock was of an unknown vaccination status and had all been purchased from the Caledon area in November 2018. Cases were also reported from **Leeu-Gamka**, where 20 of 1500 sheep were affected, and **Beaufort West**, where 18 clinical cases occurred in a flock of 450.

Two **equine encephalosis** virus cases were reported from **Plettenberg Bay**.

Approximately 15 wild **laughing doves** were found dead in a garden in a northern suburbs of **Cape Town**. The dead birds tested positive for virulent **Newcastle disease** and **pigeon paramyxovirus**.

Ovine Johne's disease was diagnosed on farms near **De Rust**, **Hopfield** and **Riebeek West** after sheep showed emaciation and diarrhoea.

Boot cover swabs on three broiler **chicken** farms in the **Malmesbury** area tested positive for **Salmonella enteritidis**.

Brucella ovis was detected during **ram** testing near **Kliprand**.

Sheep died of chronic **cardiac glycoside** poisoning (krimpsiekte) near **Murraysburg**

A **secretary bird** was found by a motorist near **Riviersonderend**, showing severe lethargy. It became paralysed overnight. A necropsy showed **haemorrhagic enteritis** and diarrhoea, with cachexia, pale muscles and oedema of the heart and lungs. Testing for avian influenza and Newcastle disease virus was negative.

Sheep showing signs of pruritis near **Klipheuwel** were sampled and diagnosed with **red lice** infestation.

Pigs near **Malmesbury** showed typical clinical signs of **mange**.



Figures 7 and 8: Secretary bird showing lethargy and weakness as a result of severe enteritis (Photos: W Gouws)

Epidemiology Report edited by State Veterinarians Epidemiology:

Dr Lesley van Helden (lesleyvh@elsenburg.com)

Dr Laura Roberts (laurar@elsenburg.com)

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