

An investigation: Pigs fed whey from foot-and-mouth disease positive herds

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In Bonnievale, ongoing monitoring of a pig farm feeding whey from a foot-and-mouth-disease (FMD) positive dairy cattle herd revealed snout lesions (Fig. 1). During further investigation, it was observed that these lesions were localized to the same spot on each pig's snout. It was concluded that the lesions resulted from physical trauma caused by scratching against the rough surface of their feeding troughs, rather than FMD infection.

Research indicates that the foot-and-mouth disease virus can survive in casein but not in acid whey by-products. During manufacturing, whey constituents such as α -lactalbumin, β -lactoglobulin, and lactose typically undergo continuous heating, precipitation, and solubilization at extreme pH levels. These processes, along with the negligible fat and casein content of whey, suggest a minimal risk of FMD virus transmission through properly manufactured whey products derived from sweet or acid whey (Blackwell, 1978).

However, concerns arise when whey from FMD-positive herds is fed to pigs daily, as this practice poses a significant risk to cloven-hooved animals in the surrounding area, should an outbreak occur. Such an outbreak can lead to severe production losses in pigs, especially in intensive farming systems, as well as in dairy cattle (Knight-Jones & Rushton, 2013). Moreover, outbreaks can disrupt both regional and international trade (Nkunjana, 2022).

It is essential to monitor for clinical signs of FMD in these scenarios. Typical signs include (Queensland Government, 2024):

- Fever (pyrexia)
- Severe foot lesions causing lameness
- Vesicles on pressure points of limbs
- Vesicular lesions on the snout
- Abortions
- Decreased production rates or average daily gains

References:

Blackwell, J.H. (1978) 'Potential transmission of foot-and-mouth disease in whey constituents', *Journal of Food Protection*, 41(8), pp. 631–633. doi:10.4315/0362-028x-41.8.631.

Queensland Government. (2024) *Foot-and-mouth disease*, *Business Queensland*. Available at:



Figure 1: Vesicular snout lesion due to physical trauma from feed trough design (S. Anders)

<https://www.business.qld.gov.au/industries/farms-fishing-forestry/agriculture/biosecurity/animals/diseases/guide/foot-mouth> (Accessed: 24 January 2025).

Knight-Jones, T.J.D. and Rushton, J. (2013) 'The economic impacts of foot and mouth disease – what are they, how big are they and where do they occur?', *Preventive Veterinary Medicine*, 112(3–4), pp. 161–173. doi:10.1016/j.prevetmed.2013.07.013.

Nkunjana, T. (2022) *An analysis of South Africa's pork industry amid rapid ...* Available at: https://www.namc.co.za/wp-content/uploads/2022/04/DAFF-NAMC-TRADEPROBE-ISSUE-NO-88-FEBRUARY-2022_Edited.pdf (Accessed: 24 January 2025).

Outbreak events

Four cases of wildlife **rabies**, confirmed by laboratory testing, occurred in January:

- ⇒ A **bat-eared fox** came onto a farmyard near **Piketberg** and was killed by dogs. All the dogs had full vaccination records and were vaccinated again in response.
- ⇒ At Three Anchor Bay Beach in **Cape Town**, a **Cape fur seal** was reported by a member of the public appearing lethargic and repeatedly throwing back its head. It was later seen chasing people and aggressively biting and shaking a shirt. The seal was captured and died soon after. No human or animal contacts were reported.
- ⇒ On Witsand Beach in **Cape Town**, a **Cape fur seal** was reported trying to bite a dog and chasing after and biting kites. She was found dead on the following day.
- ⇒ A juvenile **Cape fur seal** showed abnormal aggressive behaviour and bloodshot eyes in **St Helena Bay**.

A colt near **Paarl** presented with ataxia, but no other clinical signs and no abnormalities in haematology results. PCR testing detected **West Nile virus**. The **horse** has recovered since and the owner plans to vaccinate all horses on the premises.

Dead-in-shell **chicks** from a hatchery in the **Malmesbury** area tested positive for **Salmonella Enteritidis**.

Typical lesions of **lumpy skin disease** were seen on the hind legs of a **cow** in **Mamre**. The farmer had vaccinated the herd of 40 cattle in 2024 and vaccinated again in response to the case. No further cases of lumpy skin disease occurred.

Ostriches on a farm near **Oudtshoorn** tested **H5 avian influenza** seropositive on a routine test. Follow-up samples taken resulted in negative PCR test results, and further positive H5 reactions on serological testing.

Bluetongue in **sheep** was reported by private veterinarians near **Calitzdorp** and **Paarl**. Clinical signs seen included lethargy, fever, swollen faces, coronitis, bloody and crusty noses, lesions on the inside of the mouth, foam at the mouth and nose, and refusal to eat. The affected flocks were not vaccinated and the owners were advised on vaccination programmes to follow in the future.

Eighteen **cattle** from six different herds near **De Doorns** were reported dead. Affected animals showed signs of lethargy, inappetence, poor coat condition, hypersalivation, and red-discoloured urine. Peripheral blood smears and EDTA blood samples were collected for microscopic examination. Microscopy confirmed the presence of **Babesia** piroplasms within erythrocytes (Fig. 2). Affected cattle were treated with imidocarb dipropionate (Imidox) and vitamin ADE, while dip spray was applied to control external parasites and limit disease spread. Farmers were advised to implement monthly prophylactic dipping.

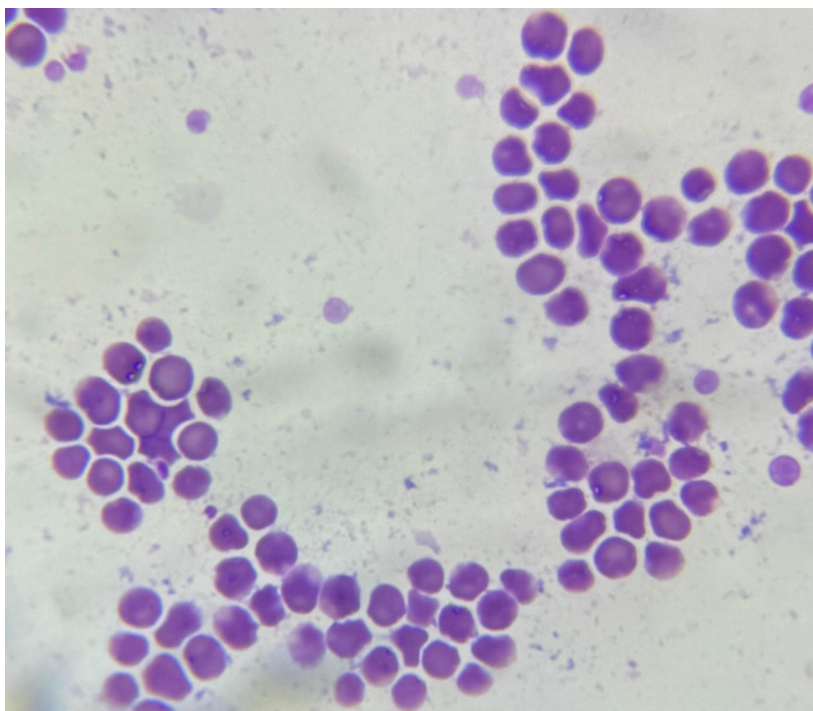


Figure 2: *Babesia* parasites observed within the blood smears of cattle from herds exhibiting typical clinical signs of redwater (S. Anders)

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