

Foot-and-Mouth Disease (FMD) Biosecurity and Risk Mitigation at Abattoirs.

September 2024



agriculture, land reform
& rural development

Department:
Agriculture, Land Reform and Rural Development
REPUBLIC OF SOUTH AFRICA

The Director: Animal Health (Animal Diseases Act, 1984 (Act No. 35 of 1984) and the National Executive Officer (Meat Safety Act, 2000 (Act No. 40 of 2000) remind abattoir owners of their responsibility in disease control and reporting. To fulfil this responsibility, abattoir owners and managers must enforce stringent biosecurity measures to mitigate risks and intensify both ante-mortem and post-mortem inspections to identify any possible lesions associated with the current Foot-and-Mouth Disease (FMD) challenges in South Africa. These actions are crucial to prevent the unintended spread of the virus from their establishments and to enhance the robustness of passive surveillance in the country.

Recommendations include:

1. Access Control:

- Restrict access to the lairages, slaughter floor, processing area, chillers, and despatch areas of the abattoir to authorised personnel only and establish controlled entry and exit points.
- Access restrictions must be enforced on all areas where animals, carcasses, meat/meat products and/or packaging material are handled and stored, as well as all change rooms and other facilities used by personnel and incoming and outgoing trucks.

2. Visitor Control:

- Implement strict visitor protocols, which must include cleaning and disinfection procedures, requirements for protective clothing, and restricted access to lairages.
- Maintain a daily visitor log, including the last contact with livestock. For abattoirs in which animals under restriction for FMD are being slaughtered, all personnel must refrain from any contact with cloven-hoofed livestock for 5 days after every red-cross-permit slaughter event.
- Disinfection of visitors who have entered the restricted areas as indicated under section 1 above, before exiting the abattoir premises.

3. Perimeter Fencing:

- Erect secure perimeter fencing around the establishment to prevent unauthorised access, and entrance of stray livestock. Ensure that all gates remain locked when not in authorised use.

4. Livestock Management:

- Prevent animals from coming into contact with other animals whose health status is unknown. As far as practically possible, different consignments of animals should be separated by empty lairage areas.
 - Ensure proper identification and traceability measures are in place, and keep these records for no less than three years. This includes accurate records of the landmarks and any other identification of every animal received, including the retention of ear tags in batches for every consignment.
 - Each slaughter batch must be accompanied by a Declaration of Health as per section 11(1)(j) of the Meat Safety Act, 2000, read together with regulation 79(2) of the red meat regulations No. R1072 of 17 September 2004.
 - Part VI (section 79 (2) of the Red Meat Regulations. This declaration must be signed by the owner or manager of the animals and contain relevant contact details.
 - The registered inspector at the abattoir must conduct an ante-mortem inspection for every batch of animals. Report any suspicious signs to the Assignee Veterinarian, and immediately report them to the responsible local VPH and AH State Veterinarians. These animals must be slaughtered last, under supervision of the Assignee Veterinarian or State Veterinarian, with thorough cleaning and disinfection after slaughter. Maintain records of these inspections. **Refer to pictures below for clinical signs.**
5. **Biosecurity Signage:** Install clear signage at entry points and throughout the facility to reinforce biosecurity protocols for both staff and visitors. In addition, quarantine signs must be in place whenever animals under restriction for FMD are being received or slaughtered at the abattoir.



6. **Biosecurity Training:**

- Provide regular training and education to staff on the importance of biosecurity measures and the correct protocols to follow. This must include appropriate caution during contact with animals outside the abattoir.

- Communicate the abattoir risk mitigation measures with the livestock suppliers
7. **Personnel Hygiene:** Enforce strict hygiene protocols for all staff, including handwashing, the use of change rooms, and the wearing of personal protective equipment (PPE) such as boots and clean overalls. Used PPE and clothing must not be removed from the abattoir except for professional cleaning.
8. **Vehicle and Equipment Disinfection:** Ensure that **ALL** vehicles and equipment entering and exiting the premises (as described under section 1) are thoroughly cleaned, disinfected, and sanitised. As an additional measure, spray the wheels and undercarriage of livestock vehicles. Maintain records of all disinfection activities.
- The WOAH Technical Disease Card for FMD recommends the following active ingredients for virus inactivation:
 - Sodium hydroxide (2%)
 - Sodium carbonate (4%)
 - Citric acid (0.2%)
 - Acetic acid (2%)
 - Sodium hypochlorite (3%)
 - Potassium peroxymonosulphate/sodium chloride (1%)
 - Chlorine dioxide
 - Please consult your supplier for more information. Only registered products must be used. Given the current risk of FMD, the package insert of the product should indicate that it is registered specifically for inactivation of FMD the virus.
9. **Bird and Rodent Control:** Implement effective control measures to prevent the spread of the virus by birds and rodents, as the virus can be carried on their feet, fur, or feathers.
10. **Collaboration with Veterinary Authorities:** Work closely with veterinary authorities to report any suspected cases of FMD and implement control measures in line with national regulations and guidelines.



Meat Inspection at Abattoirs

Disease reporting, active clinical surveillance, and epidemiological investigations are vital components of a surveillance system designed to detect FMD promptly. Meat inspections at both high-throughput and low-throughput abattoirs are conducted by

meat inspector under the supervision of veterinarians. It is essential that these inspections and records include surveillance for signs of FMD, particularly in designated facilities and affected provinces. Assignees must ensure that feet are presented for inspection, and heads and tongues are examined in accordance with the Red Meat Regulations. inspection, and heads and tongues are examined in accordance with the Red Meat Regulations. There must be proper correlation of all parts of the carcass to enable proper traceability. There must be adequate lighting that complies with the requirements of the red meat regulations for inspection purposes.

Any suspicious lesions or other suspect findings must be reported immediately to the responsible State Veterinarian.

Risk of FMD Transmission in FMD Infected and Vaccinated Cattle

The highest risk FMD infected animals are those that are in the last phases of their incubation period before or with very early clinical signs, because they carry a large amount of FMD virus in their blood that will contaminate the abattoir.

During active disease, FMD infected animals carry most of the virus in the lesions around the mouth and feet. That is why the heads (including the tongues) and feet have to be removed and either processed to inactivate the virus or disposed of safely from any animal slaughtered up to 6 months after Day 0.

FMD vaccination forms part of the integrated control strategy within specific areas and has been successfully implemented in various outbreaks over the past years. Animal-to-animal transmission remains the most common mode of transmission. Vaccination not only provides protection against signs of disease and reduces viral loads thus decreasing the risks of transmission. Keep in mind that FMD vaccinated animals can still become infected, but will be less detectable because of reduced clinical signs.

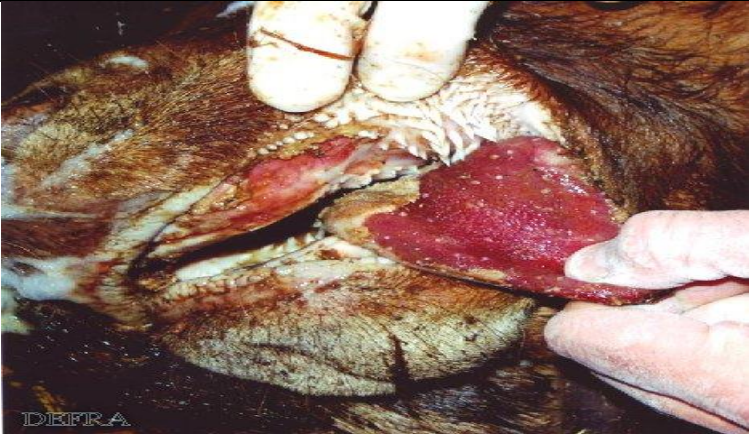
FMD vaccinated animals may be presented at FMD designated abattoirs with a red cross permit from 14 days after Day 0 being the date of the last animal receiving its first FMD vaccination or the last day of new clinical symptoms, whichever comes last. Additional risk mitigation measures are enforced at abattoirs designated for the slaughter of animals from premises that are under restriction for FMD. Because these animals from FMD quarantined premises, whether vaccinated or not, may still pose an FMD risk, the additional risk mitigation include deboning and deglanding of carcasses, carcass maturation and destruction of offal until 6 weeks after Day 0, while heads, feet, and tongues have to be removed and either processed or safely disposed of until 6 months after Day 0.

The cleaning and sanitation of livestock vehicles remain the most critical control measure to mitigate any risk of further spread and should be implemented at all abattoirs country-wide.

Pictures of various foot and mouth disease-infected animals displaying various lesions:

Fresh lesions	Old lesions
	
Hoof lesions	





Oral blisters and muzzle lesions



Teat Lesions

Image 1,3, 5 Source: <https://vetmed.tamu.edu/fadr/diseases/foot-and-mouth-disease/>

Image 7: <https://www.cfsph.iastate.edu/thelivestockproject/foot-and-mouth-disease-fmd/>

Image 2,4, 6 and 8. Pictures from various outbreaks in RSA

Image 9 <https://storage.googleapis.com/airr-consumer-production-2ccfbb0/2022/06/2ce5c38a-tem-fmd.jpg>

Image 10 https://influentialpoints.com/Gallery/Foot-and-mouth_disease_virus.htm