

# CHAPTER 1

## FARM-LEVEL PREVENTION, EARLY DETECTION AND CONTROL OF FOOT AND MOUTH DISEASE

### Article 1.1.1

#### Purpose and General Provisions

1. The purpose of this chapter is to establish **minimum requirements** for preventing the introduction, spread, and establishment of Foot and Mouth Disease (FMD) on farms within Eswatini.
2. This chapter applies to all farms keeping animals of the following susceptible categories:
  - members of the family *Suidae*;
  - members of the subfamilies *Bovinae*, *Caprinae*, *Antilopinae* within *Bovidae*;
  - *Camelus bactrianus*;
  - and other ruminants kept under domestic or semi-domestic production systems.
3. For the purposes of this chapter, the incubation period for FMD shall be 14 days.
4. Farm-level FMD surveillance and control shall prioritize:
  - early detection of clinical signs;
  - strict biosecurity management;
  - controlled movements of animals, people, equipment and vehicles;
  - immediate reporting and isolation procedures;
  - compliance with national veterinary authority requirements;
  - reduction of risk from wildlife where relevant.

### Article 1.1.2

#### Definitions

For the purposes of this chapter:

1. **Susceptible animals:** species capable of contracting FMD as defined in Article 1.1.1.
2. **Suspect case of FMD:** any susceptible animal exhibiting:
  - sudden fever;
  - excessive salivation;
  - erosions or vesicles in the mouth, feet or teats;

- acute lameness;
  - or sudden drop in milk yield without alternative explanation.
3. **Quarantine:** separation of incoming animals for a minimum of 21–30 days in a designated area with no direct or indirect contact with resident herds.
  4. **Biosecurity plan:** documented measures to prevent transmission of FMD onto or within a farm.
  5. **High-risk visitor:** any person who has been in contact with livestock, farms, markets, dip tanks or abattoirs within the previous 48 hours.
  6. **Isolation area:** a physically separated structure or paddock used to house suspect or clinically affected animals pending inspection by the Veterinary Authority.

### **Article 1.1.3**

#### **Biosecurity Requirements for Farms**

##### ***1. Perimeter and Access Control***

Farms shall maintain:

1. continuous, stock-proof perimeter fencing;
2. a single controlled entry point for vehicles and people;
3. disinfectant wheel dips or spray races for all incoming vehicles;
4. disinfectant footbaths at all animal-handling areas, refreshed at least twice daily;
5. signage indicating restricted access.

##### ***2. Visitor Management***

The farm shall keep a Visitor Register recording:

- name, contact;
- last farm visited;
- reason for visit;
- disinfectant measures applied.

High-risk visitors shall be permitted entry only after full compliance with clothing and sanitation requirements.

##### ***3. Farm Staff Hygiene***

Farm workers shall:

- use farm-dedicated gumboots and protective clothing;
- wash and disinfect hands before and after animal handling;
- avoid wearing home clothing within animal areas.

#### 4. **Equipment and Vehicle Sanitation**

- i. All shared equipment (crushes, ropes, milking clusters, syringes, tools) shall be cleaned of organic matter and disinfected before each use.
- ii. Vehicles transporting animals or feed must be disinfected upon entry and exit.

#### 5. **Feed and Water Management**

Farms shall ensure that:

- feed and hay do not originate from FMD-infected zones unless appropriately stored ( $\geq 120$  days);
- water points are closed to wildlife and neighbouring livestock;
- no raw milk, slaughter waste, or effluent is accessible to susceptible animals.

### **Article 1.1.4**

#### **Animal Movement and Quarantine Procedures**

##### ***1. Purchasing and Introduction of New Animals***

1. No animals shall be introduced without a valid veterinary movement permit.
2. Animals must originate from farms with no suspected or confirmed FMD report in the preceding 30 days.
3. Livestock markets or auctions in infected or restricted zones shall not be used.

##### ***2. Quarantine Requirements***

All incoming animals shall undergo quarantine for 21–30 days, during which:

- animals are housed separately from the main herd;
- no equipment, feeding troughs or water points are shared;
- daily clinical examination is recorded;
- no animals may leave quarantine except for emergency humane slaughter under veterinary instruction.

##### ***3. Farm Animal Movement Register***

The farm shall maintain records of:

- all movements onto or off the farm;
- dates, identification numbers, origin and destination;
- accompanying permits.

## **Article 1.1.5**

### **Surveillance and Early Detection Requirements**

1. Farms shall implement daily visual inspection of susceptible animals for clinical signs, including:
  - fever or depression;
  - salivation;
  - vesicles or erosions in the mouth, on teats, feet or udder;
  - sudden drop in milk yield;
  - reluctance to walk.
2. Any suspect signs must be recorded in a Health Register.
3. Farm staff shall receive at least annual training on:
  - FMD recognition;
  - transmission pathways;
  - emergency response procedures;
  - personal hygiene practices.
4. Changes in herd behaviour or production (e.g., milk drop, feed refusal) shall be investigated immediately.

## **Article 1.1.6**

### **Vaccination (Where Permitted by the Competent Authority)**

1. Vaccination may only occur under the authorization of the Veterinary Authority.
2. When vaccination is authorized, the following must be recorded:
  - date of vaccination;
  - vaccine strain, batch and expiry;
  - identity of animals vaccinated;
  - vaccinator name;
  - booster intervals.
3. Vaccinated animals must be managed in accordance with national FMD zoning policies.

## **Article 1.1.7**

### **Procedures when FMD is Suspected on a Farm**

#### **1. Immediate Movement Controls**

Upon suspicion of FMD:

- all animal movements must stop immediately;
- no animals may enter or leave the farm;
- no milk or animal products may be sold or moved until cleared by authorities.

## 2. Notification

The farm owner or manager shall notify the Veterinary Authority within 24 hours (preferably immediately).

## 3. Isolation of Suspect Animals

- Suspect animals shall be moved to the isolation area.
- Staff must not handle both healthy and suspect animals on the same day unless changing clothing and disinfecting fully.

## 4. Enhanced Biosecurity

- footbaths refreshed every 6 hours;
- movement of equipment and people restricted to essential tasks only.

## 5. Milk Handling

- Milk from suspect or exposed animals shall not be sold;
- Discarding or heat treatment of milk shall follow Veterinary Authority instructions.

## 6. Cooperation with Veterinary Authority

Farms must permit:

- clinical inspection;
- sampling;
- quarantine enforcement;
- ring vaccination or stamping-out measures as required.

## Article 1.1.8

### Cleaning and Disinfection Requirements

1. Disinfection shall follow these steps:
  1. physical removal of manure, bedding and organic material;
  2. washing with detergent and water;
  3. rinsing;
  4. application of approved virucidal disinfectants (e.g. sodium carbonate, iodophors, citric acid);
  5. maintaining a minimum 10–30 minutes contact time.
2. High-risk areas requiring daily disinfection include:

- crushes and loading ramps;
- isolation paddocks;
- milking parlour entrances;
- vehicle entry points.

### **Article 1.1.9**

#### Record-Keeping Requirements\*\*

Farms shall maintain the following records for at least 5 years:

1. Visitor Register
2. Vehicle Register
3. Animal Movement Register
4. Quarantine Register
5. Vaccination Register
6. Health and Treatment Register
7. FMD Suspect Case Log (if applicable)

Records must be made available to the Veterinary Authority upon request.

## CHAPTER 2

### FMD PRODUCT SAFETY PROTOCOLS FOR DAIRY PROCESSING ESTABLISHMENTS

#### Article 2.1.1

##### Purpose and General Provisions

1. The purpose of this chapter is to establish minimum requirements for the safe collection, receipt, processing, and dispatch of milk and dairy products during periods of FMD freedom, suspicion, or confirmed outbreaks within Eswatini.
2. This chapter applies to:
  - dairy processing plants;
  - milk collection centres (MCCs);
  - bulk milk tankers;
  - any establishment receiving raw milk from susceptible species.
3. These provisions ensure:
  - prevention of FMD introduction via raw milk supply lines;
  - safe handling of milk from FMD-affected areas under authorized conditions;
  - protection of livestock populations through strict waste management;
  - traceability of all milk-based commodities;
  - compliance with WOHAI provisions on safe dairy commodities.
4. For the purposes of this chapter, heat-treated dairy products meeting WOHAI criteria (including UHT milk) are recognized as safe commodities.

#### Article 2.1.2

##### Definitions

For the purposes of this chapter:

1. **Susceptible species:** as defined under Chapter 1.
2. **Raw milk:** milk obtained directly from animals without undergoing any heat treatment.
3. **Safe dairy commodities:** products meeting WOHAI-defined parameters for virus inactivation, including UHT milk and dairy products subjected to validated time-temperature treatments.
4. **Milk supply catchment:** the set of farms supplying raw milk to a processing plant or MCC.

5. **High-risk milk:** milk originating from farms located within or adjacent to restricted or protection zones designated during an FMD outbreak.
6. **Dedicated line:** processing line used exclusively for raw or high-risk milk until fully cleaned and disinfected.
7. **Milk rejection:** refusal to receive or process milk that does not comply with hygiene, zoning, or safety requirements.

### **Article 2.1.3**

#### **Milk Supplier Approval and Procurement Requirements**

1. Processing establishments shall maintain a list of **approved farms** from which milk may be procured.
2. Approval shall require:
  1. confirmation from Veterinary Authorities that the supplying farms lie outside any FMD-infected or restricted zones, unless otherwise authorized;
  2. a signed declaration from the farmer confirming:
    - absence of FMD suspicion on the farm in the past 30 days;
    - adherence to farm-level FMD biosecurity measures under Chapter 1;
  3. maintenance of complete traceability records.
3. Milk suppliers in proximity to infected or protection zones may only supply milk under written Veterinary Authority instructions.
4. Establishments shall maintain a supplier file containing:
  - GPS coordinates;
  - herd composition and size;
  - zoning status;
  - FMD-related communication records;
  - inspection or audit findings.

### **Article 2.1.4**

#### **Milk Collection, Transportation, and Reception Controls**

1. All bulk tankers, cans, and other raw milk transport units shall:
  - undergo cleaning and disinfection between every collection route;
  - carry only milk;
  - avoid entering livestock areas on farms.
2. Prior to loading milk on-farm, the collector shall verify:

- no FMD signage or quarantine notices are displayed;
  - no suspect animals are present in milking areas;
  - the milking area is hygienic and free of prohibited waste milk practices.
3. Upon arrival at the plant or MCC, all tankers shall pass through:
    - a disinfectant wheel bath or spray;
    - a designated reception bay physically separated from processed product zones.
  4. Milk containing clots, blood, off odours, abnormal colour or temperature variations may be rejected independent of FMD considerations.
  5. If a supplying farm is identified as suspect or confirmed FMD-infected, milk collection from that farm shall cease immediately, unless authorized by the Veterinary Authority under strict handling conditions.

### **Article 2.1.5**

#### **Segregation and Handling of Raw and High-Risk Milk**

1. Establishments receiving raw milk from protection or surveillance zones shall maintain:
  - a dedicated reception line;
  - dedicated raw milk silos;
  - dedicated CIP cycles.
2. High-risk milk shall be processed only:
  - at the end of the production shift;
  - in isolation from normal production flow;
  - after all other raw milk is processed.
3. Milk from infected farms shall only be handled if:
  - explicitly authorized by the Veterinary Authority;
  - subjected to validated heat treatment parameters ensuring virus inactivation.
4. Mixing of normal and high-risk milk is prohibited.

### **Article 2.1.6**

#### **Processing Requirements and Virus Inactivation Parameters**

1. The following heat treatments are considered adequate for FMD inactivation in milk and dairy products:

- **High Temperature Short Time (HTST) pasteurization:**  
 $\geq 72^{\circ}\text{C}$  for  $\geq 15$  seconds.
  - **Double HTST treatment:**  
 $\geq 72^{\circ}\text{C}$  for  $\geq 15$  seconds *applied twice*, when handling high-risk milk.
  - **Ultra-high temperature (UHT) treatment:**  
 $\geq 135^{\circ}\text{C}$  for  $\geq 1\text{--}4$  seconds.
  - **Validated equivalent processes:**  
 alternative time-temperature combinations that achieve equal or superior virus inactivation.
2. Flow diversion valves must be operational and calibrated to prevent sub-standard product from passing.
  3. Continuous recording of temperature and holding-time parameters is mandatory.
  4. Non-compliant batches shall be reprocessed, discarded, or downgraded according to veterinary guidance.

## Article 2.1.7

### Zoning of Dairy Processing Premises

1. Processing facilities shall establish clean and dirty operational zones:
  - Dirty zones include:
    - raw milk reception;
    - tanker bays;
    - raw milk silo areas.
  - Clean zones include:
    - post-pasteurization areas;
    - filling and packaging halls;
    - storage for finished products.
2. Movement from dirty → clean zones shall only occur after:
  - changing overalls and boots;
  - washing hands;
  - disinfecting footwear.
3. Visitors and contractors shall be restricted to non-animal contact areas unless authorized.

## Article 2.1.8

## Waste Milk, Effluent, and By-Product Management\*\*

1. No raw or unpasteurized milk shall be:
  - fed to ruminants;
  - disposed of where susceptible species can access it;
  - left in open pits or evaporation ponds.
2. Waste milk intended for animal feed must be:
  - heat-treated according to Article 2.1.6;
  - authorized by the Veterinary Authority.
3. Whey, sludge, and effluent shall be disposed of in a manner preventing:
  - access by cattle, sheep, goats or pigs;
  - surface runoff to grazing areas.
4. Solid waste such as filters, disposable PPE, and packaging shall be sealed before disposal.

## Article 2.1.9

### Emergency Response Procedures for Suspected or Confirmed FMD in the Milk Supply Chain

When notified of suspicion or confirmation of FMD in the supply catchment:

1. **Immediate Actions**
  - halt collection from affected farms;
  - isolate all incoming raw milk from the relevant period;
  - suspend dispatch of unpasteurized products.
2. **Notification**
  - inform the Veterinary Authority within 24 hours;
  - provide full traceback of farms supplying the affected batch(es).
3. **Traceability and Product Recall**
  - identify all batches associated with suspect milk;
  - place them on hold pending investigation;
  - initiate recall if instructed.
4. **Enhanced Cleaning and Disinfection**
  - implement additional CIP cycles;
  - disinfect reception and tanker bay areas;
  - sanitize all equipment involved in raw milk handling.
5. **Resumption of Processing**

- may occur only after clearance by the Veterinary Authority.

## **Article 2.1.10**

### **Record-Keeping and Documentation Requirements**

Processing establishments shall maintain records for not less than 5 years, including:

1. Supplier and farm approval files.
2. Raw milk receipt logs (batch volumes, suppliers, tanker ID).
3. Tanker cleaning and disinfection logs.
4. Pasteurization/UHT temperature and time charts.
5. Segregation records for high-risk milk.
6. Waste disposal logs.
7. Visitor and contractor registers.
8. Communication records with Veterinary Authorities.
9. FMD-specific investigation files (traceability, batch holds, test results).

All records must be accessible for audit at any time.