Maintenance of FMD free status in Singapore

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PREVENTION ACTIVITIES TO MAINTAIN FMD FREE STATUS

Surveillance for early detection

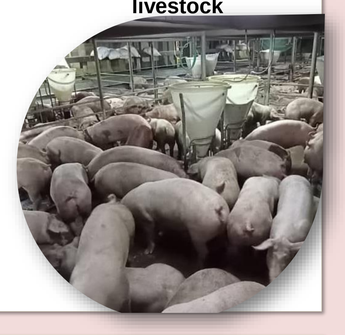
- Compulsory reporting of FMD cases under the Animals and Birds Act
- Surveillance of local farmed ruminant populations, local wild boar population and captive susceptible zoological animals (syndromic and serological)

Wild boar biosurveillance

Strict biosecurity measures and risk assessment

- Stringent risk-based set of veterinary import conditions for importation of live susceptible animals (swine, sheep) and animal products (meat or meat products), including bilateral zoning and compartmentalisation arrangements, aligned with WOAH guidelines
- Accreditation system for importation of meat and meat products
- Routine inspection supported by ops technology (e.g. live remote inspection using CCTVs) for timely and sensitive detection of diseases

In-Vessel CCTV for monitoring of imported livestock



Maintenance of laboratory capabilities

- Maintenance of laboratory capabilities for FMD diagnostic work in the event of FMD detection
- FMD inter-laboratory proficiency testing programmes ongoing
- ISO/IEC 17025:2017 accreditation since 2005

Laboratory testing

Coordinated disease response & control

- Structured emergency response system in place to deal with animal disease incidents, such as FMD outbreaks
- Regular training and simulation exercises are conducted to build capacities in dealing with animal disease incidents

Field Investigation

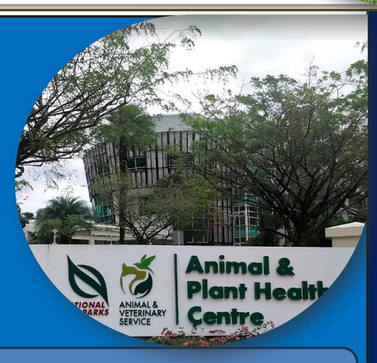
PREPAREDNESS & CONTINGENCY PLANNING

- Laboratory testing workflows and protocols in place for FMD diagnostics in the event of FMD detection
- Training and capability building for field and laboratory investigation
- Structured emergency system for disease outbreaks, supported by a command structure that includes relevant government agencies and industry stakeholders

Field and laboratory investigation → Movement restriction → Stamping out, disposal and disinfection → Surveillance

Strategies for disease outbreak response

- Disposal of carcasses and related in-contact material by incineration; and thorough cleaning and decontaminating of the premises and all related equipment and vehicles.



Laboratory capabilities for FMD

a. Real-time RT-PCR (pan-FMDV based on amplification of 3D and 5'UTR genes) (for screening, detection & identification)
b. NSP cELISA (for serological screening & detection)
c. Solid-Phase Competitive ELISA, Serotype O (for typing of antibody)
d. Solid-Phase Competitive ELISA, Serotype A (for typing of antibody)
e. Solid-Phase Competitive ELISA, Serotype Asia 1 (for typing of antibody)
f. Antigen Detection and Serotyping ELISA for O, A, C, Asia1, SAT1 and SAT2
g. Whole Genome Sequencing (WGS) and bioinformatics for whole genome analysis of FMDV

CONSTRAINTS & SOLUTIONS

	Challenges	Recommendations
1	While Singapore is free from FMD, there is a constant need to ensure that contingency plans and its concept of operations are fit-for-purpose	• Continue review of contingency plans by applying lessons arising from simulation exercises and related outbreaks of TADs (e.g. ASF in 2023) • Work with relevant government agencies and industry stakeholders on refining contingency planning, including biowaste disposal • Continue review of national legislation related to control of FMD and other animal diseases
2	Potential disruptions to Singapore's food security through outbreaks of FMD overseas as Singapore depends heavily on import of livestock for food	• Continue to maintain import control measures in accordance with WOAH's TAHC for FMD and strengthen pre-border early warning mechanisms for imports
3	Continual training is needed to keep field and laboratory investigation staff well-trained and updated in identification of clinical signs, epidemiology and investigation protocols	• Continue regular training and capability building activities, including inter-laboratory proficiency testing programmes, for field and laboratory investigation staff

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