Member's Update on FMD, PPR and LSD

Chinese Taipei

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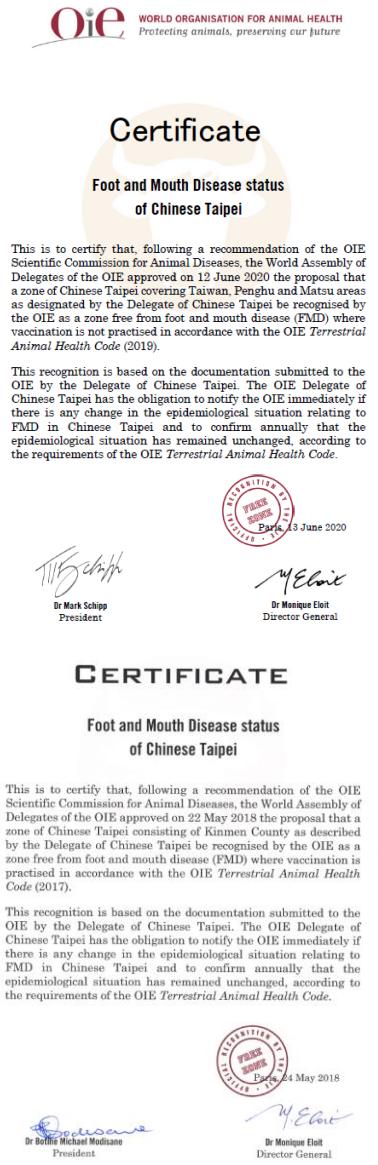
Tokyo, Japan

Disease situations

FMD

- Has been **recognized as free from FMD by WOAH.**
- June 2020, **FMD free area** without vaccination for Taiwan, Penghu, Matsu
- June 2018, **FMD free area** with vaccination for Kinmen
- FMD is one of the **notifiable listed-A diseases** in Chinese Taipei. All **confirmed and suspected animal have to be culled**, and **vaccination against FMD is prohibited.**



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Certificate

Foot and Mouth Disease status of Chinese Taipei

This is to certify that, following a recommendation of the OIE Scientific Commission for Animal Diseases, the World Assembly of Delegates of the OIE approved on 12 June 2020 the proposal that a zone of Chinese Taipei covering Taiwan, Penghu and Matsu areas as designated by the Delegate of Chinese Taipei be recognised by the OIE as a zone free from foot and mouth disease (FMD) where vaccination is not practised in accordance with the OIE *Terrestrial Animal Health Code* (2019).

This recognition is based on the documentation submitted to the OIE by the Delegate of Chinese Taipei. The OIE Delegate of Chinese Taipei has the obligation to notify the OIE immediately if there is any change in the epidemiological situation relating to FMD in Chinese Taipei and to confirm annually that the epidemiological situation has remained unchanged, according to the requirements of the OIE *Terrestrial Animal Health Code*.

Paris, 13 June 2020

Dr Mark Schipp
President

Dr Monique Eloit
Director General

CERTIFICATE

Foot and Mouth Disease status of Chinese Taipei

This is to certify that, following a recommendation of the OIE Scientific Commission for Animal Diseases, the World Assembly of Delegates of the OIE approved on 22 May 2018 the proposal that a zone of Chinese Taipei consisting of Kinmen County as described by the Delegate of Chinese Taipei be recognised by the OIE as a zone free from foot and mouth disease (FMD) where vaccination is practised in accordance with the OIE *Terrestrial Animal Health Code* (2017).

This recognition is based on the documentation submitted to the OIE by the Delegate of Chinese Taipei. The OIE Delegate of Chinese Taipei has the obligation to notify the OIE immediately if there is any change in the epidemiological situation relating to FMD in Chinese Taipei and to confirm annually that the epidemiological situation has remained unchanged, according to the requirements of the OIE *Terrestrial Animal Health Code*.

Paris, 24 May 2018

Dr Bernard Vallat
President

Dr Monique Eloit
Director General

World Organisation for Animal Health

Disease situations

PPR

- Has been **recognized as free from PPR by WOAH.**
- PPR is one of the **notifiable listed-A diseases** in Chinese Taipei. All **confirmed and suspected cattle have to be culled**, and **vaccination against PPR is prohibited.**
- Without the protection of vaccine-induced immunity, PPR is easy to be identified during **active and passive monitoring in goat farms, slaughterhouses, and rendering plants.**
- The confirm diagnosis for handling suspected PPR cases and some samples for the border inspection is **backed up with VRI**. **No suspected PPR case** has been reported or confirmed (including domestic and imported animals).

Global strategy for control and eradication

Implementing the strategy

Official Disease Status

PPR free Members

Members recognised as **free from PPR** according to the provisions of Chapter 14.7. of the *Terrestrial Code*:

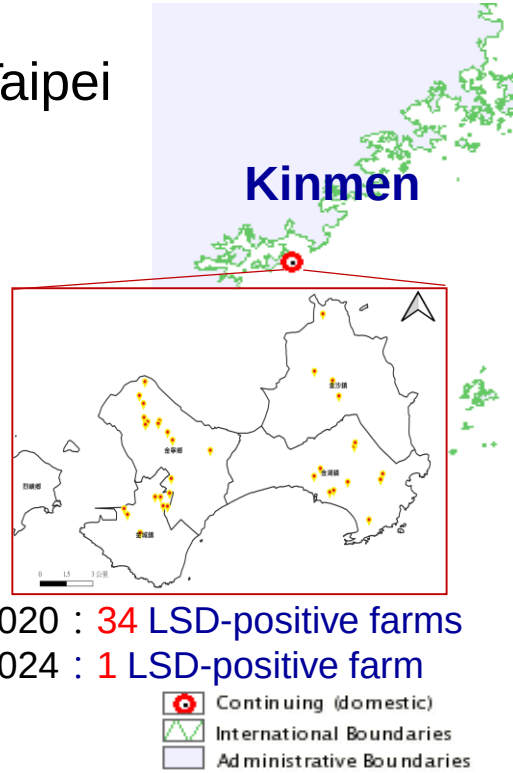
Argentina	Denmark	Liechtenstein	Portugal (3)
Australia	Ecuador	Lithuania	Romania
Austria	Estonia	Luxembourg	Russia
Belgium	Eswatini	Madagascar	Singapore
Bolivia	Finland (1)	Malta	Slovakia
Bosnia and Herzegovina	France (2)	Mauritius	Slovenia
Botswana	Germany	Mexico	South Africa
Brazil	Greece	New Caledonia	Spain (4)
Canada	Hungary	New Zealand	Sweden
Chile	Iceland	North Macedonia (Rep. of)	Switzerland
Chinese Taipei	Ireland	Norway	The Netherlands
Colombia	Italy	Paraguay	United Kingdom (5)
Croatia	Korea (Rep. of)	Peru	United States of America (6)
Cyprus	Latvia	Philippines	Uruguay
Czech Republic	Lesotho	Poland	

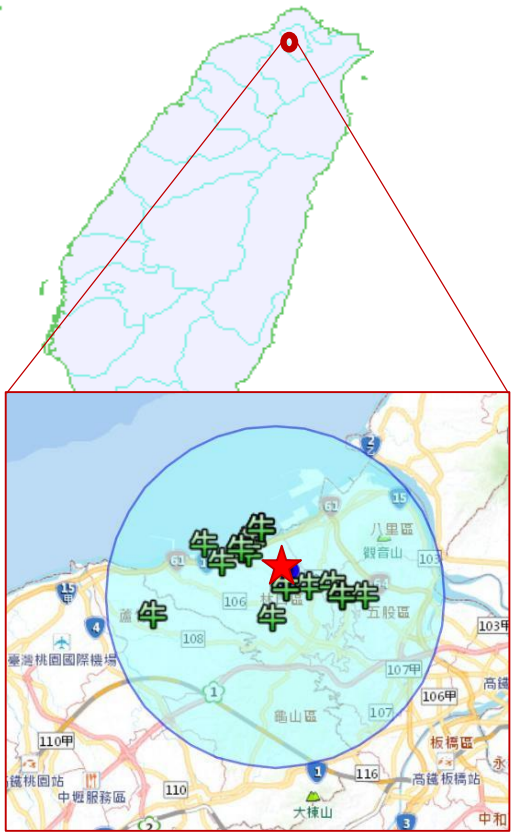
Chinese Taipei

Disease situations

LSD is one of the notifiable listed-A diseases in Chinese Taipei

- **In Kinmen**
  - ✓ **34 farms** were confirmed and 269 confirmed and suspected cattle were culled, then remaining 6,342 cattle were vaccinated in 2020.
  - ✓ **1 farm** was confirmed and 7 confirmed and suspected cattle were culled, then remaining 4,708 cattle were vaccinated in 2024.
  - ✓ **At present only newborn 6-month-old calves must be vaccinated.**
- **In New Taipei City**
  - ✓ **Only 1 LSD case in Taiwan main island** was confirmed by PCR diagnosis on April 15, 2021.
  - ✓ Index farm killed and disposed of 31 cattle. There are 12 cattle farms located within 10 km radius from the index farm, the cattle were all in good health at that time.
  - ✓ Completed health inspection and LSD vaccination of total 167,650 cattle in 2021.
- **In Taiwan, Penghu and Matsu**, there have been **no LSD cases** since **2021**; hence, **LSD vaccination ceased in 2022**.





Disease prevention and control

- Early warning
  - Raise the level of vigilance and also strengthen inspections at borders and promote awareness to the public
- Surveillance
  - **For FMD**
    - ✓ VNT
    - ✓ NSP reactors followed by clinical investigation and antigen detection
    - ✓ Surveillance of wild cloven-hoofed animals
- On-site and ante- and post-mortem inspections
  - **For FMD, PPR & LSD**
    - ✓ Strengthen on-site inspection and guidance regarding biosafety on pig, cattle, sheep and goat farms
    - ✓ Strengthen **ante- and post-mortem inspections** in slaughterhouse
- Movement control and antigen detection
  - NSP positive for FMD
  - Suspicion clinical signs for PPR & LSD

Disease prevention and control

- A vaccination team was composed of 50 members, including the staff from Local Animal Disease Inspection Authorities (LADIAs), the teachers and students of veterinary colleges, and private veterinarians.
- Based on the risk of epidemics, vaccines or antigen banks are maintained in reserve, including 1 million doses of FMD vaccine (700,000 doses of serotype O and 300,000 doses of serotype A), 900,000 doses each of serotype A and O in the FMD antigen bank, 120,000 doses of SGP vaccine, and 180,000 doses of LSD vaccine (including 50,000 physical doses and 130,000 doses stored in the vaccine bank.

Laboratory capacity

For FMD:

- Active Surveillance
  - Clinical inspections (On-farm)
  - Serological testing: 600 pig farms and 300 ruminant farms per year 15 serum samples per farm based on epidemiological principle
  - Clinical inspections (Auction market)
  - Serological testing for NSP antibody on a daily basis 1-2 animals per original farm around 20 thousand samples/year in total
- Passive surveillance
  - Clinically suspected cases are traced back to the original farm to conduct:
    - ✓Follow-up serological and virologic sampling and testing

Laboratory capacity

For PPR:

- **Antigen detection:** real-time RT-PCRs based on WOAH Manual of Diagnostic Tests and Vaccines for Terrestrial Animals, **CHAPTER 3 . 8 . 9, have been set up and applied (N gene, Bao *et al*., 2008 & Kwiatek *et al*., 2010)**

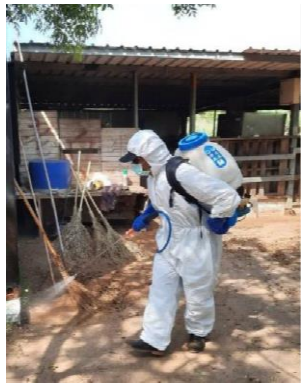
For LSD:

- **Antigen detection:**
  - ✓ A **real-time PCR** based on WOAH Manual of Diagnostic Tests and Vaccines for Terrestrial Animals, CHAPTER 3.4.12, has been set up and applied (ORF 068, Balinsky *et al*., 2008).
  - ✓ A dual **DIVA real-time PCR to differentiate between virulent and vaccine strains of LSD** has been developed as an in-house method.
- **Virus isolation**: by primary sheep testicle (not for routine diagnosis)
- **Whole genome sequencing**: complete coding sequence of LSDV/KM/Taiwan/2020 isolate (GenBank accession number OL752713) obtained by NGS technique (Huang *et al*., 2022)

Challenge and possible solutions

- Comprehensive vaccination campaign and multi-sectors cooperation is crucial to the control of the diseases outbreak, which depends on early detection and rapid response.
- Strengthen the cleaning and disinfection (C&D) measure and vector control in all cattle farms and relevant ports.
- Continue to strengthen multi-sectoral collaboration and join international conference and learning the experiences.






Proposal for future activities

- Vector sampling: conducted in the cattle farms for LSDV early warning monitoring
- Vector control: Strengthen guidance for livestock owners to hang bug zappers for 24-hour light trapping, and weeding the surrounding environment of the all cattle farms to reduce the chance of hiding the vector
- Strengthening the quarantine measures for imported cattle and goats at the border
- Enhancing public awareness, prevention, inspection, surveillance, early warning and laboratory diagnosis for FMD, LSD and PPR susceptible species.





Thank you

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