



Member update on PPR and LSD

Hong Kong SAR, P. R. China

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World Organisation
for Animal Health
Founded as OIE

- ***Susceptible population***

- *Feral cattle and water buffalo in Hong Kong country parks: 860 brown cattle and 180 water buffalo (2022 population survey)*
- *1 small scale dairy farm for veterinary teaching purpose with around 50 cattle*

- ***Disease prevention and Control system***

- *No surveillance and testing before the first outbreak in 2020, via passive surveillance by monitoring of clinical disease*

- ***Risk pathway***

- *Vector?*
- *Import cattle?*





Visualize data Export data

The content of this dashboard is based on the data contained on the official reports (immediate notifications and follow-up reports, six-monthly reports and annual reports) submitted by the relevant Veterinary Services through OIE-WAHS. For visualization purposes, provided data has been aggregated in a comprehensive way. If you want to consult the detailed information, please go to the specific "Reports" section. Please note, this dashboard is refreshed every 1-2 hours.

Please make at least one filter selection to see the data
While setting the filters, please make sure to select at least one "country" or "world region" filter.

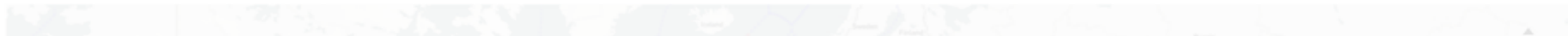
Please be aware that displaying a large quantity of data may increase the loading time

Disease	Country	Animal category	Semester																																	
			Jan-Jun-2005	Jul-Dec-2005	Jan-Jun-2006	Jul-Dec-2006	Jan-Jun-2007	Jul-Dec-2007	Jan-Jun-2008	Jul-Dec-2008	Jan-Jun-2009	Jul-Dec-2009	Jan-Jun-2010	Jul-Dec-2010	Jan-Jun-2011	Jul-Dec-2011	Jan-Jun-2012	Jul-Dec-2012	Jan-Jun-2013	Jul-Dec-2013	Jan-Jun-2014	Jul-Dec-2014	Jan-Jun-2015	Jul-Dec-2015	Jan-Jun-2016	Jul-Dec-2016	Jan-Jun-2017	Jul-Dec-2017	Jan-Jun-2018	Jul-Dec-2018	Jan-Jun-2019	Jul-Dec-2019	Jan-Jun-2020	Jul-Dec-2020	Jan-Jun-2021	Jul-Dec-2021
Peste des petits ruminants	Hong Kong	Domestic	[Green]																																	
		Wild	[Green]																																	

- No data available
- 9 No information
- 8 Never reported
- 7 Absent
- 6 Suspected limited zones
- 5 Suspected
- 4 Inf./Infest. limited zones
- 3 Inf./Infest.
- 2 Present limited zones
- 1 Present

No clinical signs or suspected case reported from private vet/animal welfare group/AFCD stray cattle team

Disease status : To view this map, please select at least one disease and one country or world region. To display the disease situation worldwide, please select all the regions in the corresponding filter.





- In October 2020, some feral cattle in Hong Kong developed multi-focal cutaneous nodules consistent with lumpy skin disease (LSD)
- In early November 2020, more similar cases were detected
- The clinical course lasted for 2–3 weeks
- Clinical signs:
 - *Skin lesions*
 - *Fever*
 - *Malaise*
 - *Anorexia*
 - *Superficial lymphadenopathy*
 - *Nasal and/or oral ulcers*

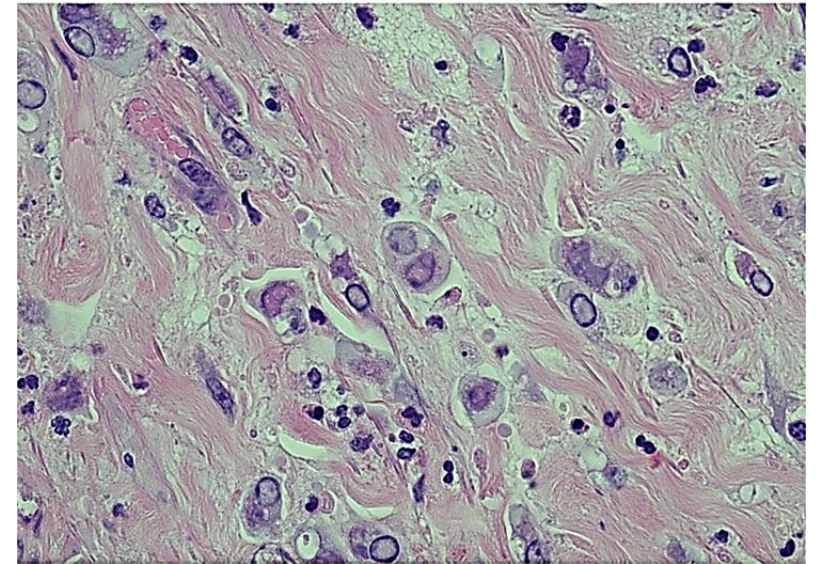
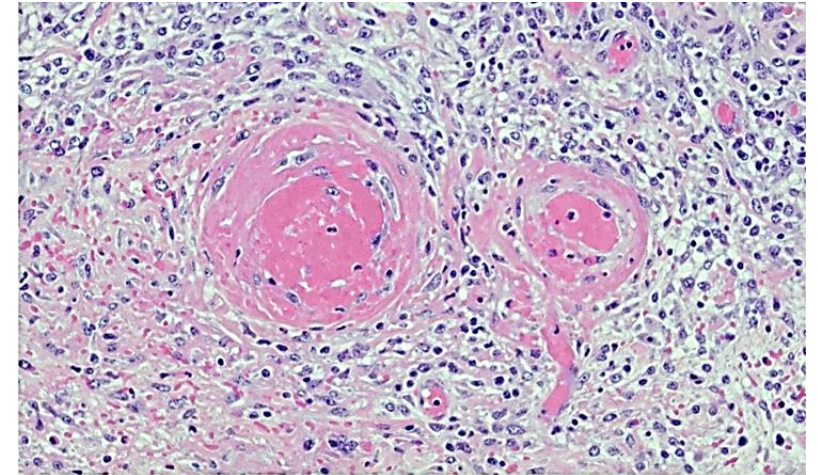


- Samples were submitted to AFCD government veterinary laboratory (Tai Lung Veterinary Laboratory, TLVL) in Hong Kong for testing, including histopathological examination
 - *Note: at this point there was no test for LSD as no LSD was detected in Hong Kong before this first case*
 - *As gross and histological pathology supported the diagnosis, samples were sent to the WOAHP Reference Laboratory at The Pirbright Institute for confirmatory testing*
- Morbidity 20-30% (only in feral cattle, no water buffalo was affected)
 - *Water buffaloes in Hong Kong seemed to be unaffected, both clinically and serologically*
- Last reported by public members in March 2021
- No suspicious cases after March 2021



Postmortem examination on euthanized severely affected cattle

- Gross findings
 - *Widespread, randomly distributed cutaneous, and subcutaneous nodules ranging from 1 to 40 mm in diameter.*
 - *Multiple superficial lymph nodes were enlarged and haemorrhagic.*
- Histopathological findings
 - *Necrotizing vasculitis that started from the deep cutaneous plexus with abundant surrounding infiltrates of predominate large histiocytes and fibroblasts.*
 - *The histiocytes frequently contained a large, prominent eosinophilic or amphophilic, intracytoplasmic inclusion bodies and had margined chromatin*



Marked, multi-focal, necrotizing, and histiocytic dermatitis with (upper) necrotizing vasculitis and (lower) intracytoplasmic inclusion bodies



- Tissue samples, including subcutaneous nodules and enlarged lymph nodes, were submitted to the WOAHA Reference Laboratory for LSD at The Pirbright Institute, UK.
- LSDV was isolated from skin samples taken from three animals and named LSDV/HongKong/2020/01 to 03.
- Whole genome sequencing and phylogenetic analysis revealed the LSD outbreak was caused by a different strain of LSDV than the LSD epidemic in the Middle East and Europe in 2015–2018.
- Test in TLVL from Oct 2020 to Jun 2023
 - *PCR: 261 tests*
 - *Serology: 120 tests*





- The mode of entry of the virus to Hong Kong is not known
 - *It was possible that LSD spread to Hong Kong through flying insects such as flies and mosquitoes*
- AFCD management plan for LSD is mainly aimed to
 - *Minimize the impact of this disease on the welfare of animals*
 - *Reduce the threat as endemic focus of LSD in Hong Kong could cause to commercial cattle in the broader region*
 - *Protect the historically valuable and irreplaceable local cattle and buffalo population*
- Prevention and control measures that had been taken into consideration
 - *Surveillance*
 - *Vaccination*
 - *Supportive treatment*
 - *Euthanasia for severe cases if necessary*

- Passive surveillance in form of observations by the AFCD cattle team, country park staff and reports of sick cattle from the public
- Serological surveillance
 - *Purpose: to see if LSD is still present in the feral population*
 - *Sampling target: all the feral cattle that were born after March 2021*
 - *Sampling period: started after October 2022*
 - *Convenient sampling: so far 23 calves/juveniles sampled*
 - *Result: No clinical sign and all seronegative*



- Feral cattle
 - *Natural herd immunity seemed to build up*
 - *No clinical cases since March 2021*
 - *Affected animals recovered*
 - *Disease was self-limiting in a majority of cases*
 - *Vaccination is not feasible in feral cattle population*
- Cattle in the one dairy farm
 - *Vaccinated with MSD Animal Health - Lumpyvax[®]*

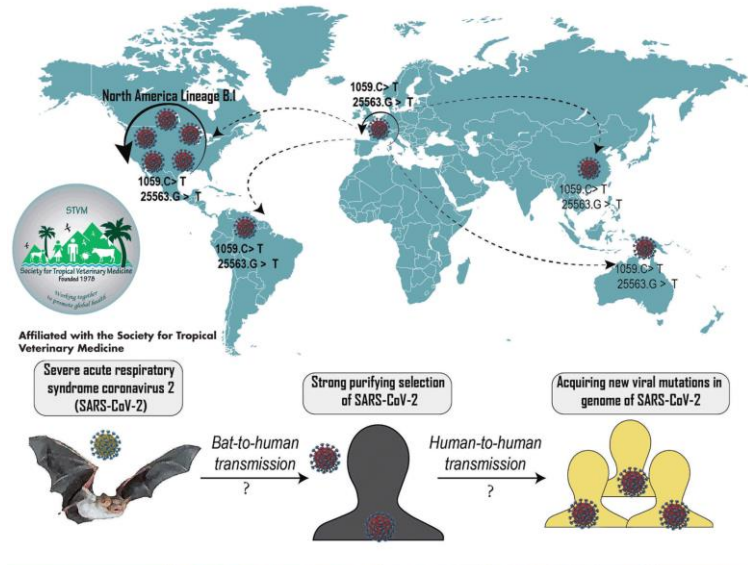




- ~~Vaccination~~
- ~~Movement control and zoning~~
- ~~Vector control~~
- All the above are not feasible due to the feral nature of the cattle population
- Stamping out?
 - *Practically feasible but public perception are of major concern*



- AFCD will provide supportive treatments to infected animals based on welfare grounds
- If an infected animal has become severely ill and its welfare has been compromised, euthanasia will be performed
- Continue convenient sampling for serological surveillance



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ORIGINAL ARTICLE

A novel strain of lumpy skin disease virus causes clinical disease in cattle in Hong Kong

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Thank you!

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