LUMPY SKIN DISEASE (LSD) 2016

- An infectious, eruptive, occasionally fatal viral disease of cattle, closely related to the pox viruses
- Spread by biting insects and characterized by nodules on the skin and other parts of the body
- Traditionally found in Africa, now spread to several countries in the Middle East and European countries

Epidemiology

Morbidity: 5-45%
Mortality: <10%

Host range
- Natural infection: Cattle and Domestic Asian buffalo
- Experimental infection: Giraffe and Impala
- Clinical disease: Arabian Oryx (Saudi Arabia), Springbok (Namibia) and Oryx (South Africa)

Transmission
- Principle method: Mechanical transmission by arthropod vector such as mosquitoes and flies
- Minor source: Direct contact or Ingestion of contaminated feed and water
- Possible route: Experimental inoculation with material from coetaneous nodules or blood

Prevention and Control

Treatment
- No specific treatment
- Strong antibiotic therapy to avoid secondary infection

Sanitary prophylaxis
- Free countries: import restrictions on livestock, carcasses, hides, skins and semen
- Infected countries
  - Strict quarantine to avoid introduction of infected animals into safe herds
  - Isolation and prohibition of animal movements (in case of outbreaks)
  - Slaughtering of all sick and infected animals (as far as possible)
  - Proper disposal of dead animals (e.g. incineration)
  - Cleaning and disinfection of premises and implements
  - Vector control in premises and on animals
- With the exception of vaccination, control measures are usually not effective
- Vector control in ships and aircraft is highly recommended

Medical prophylaxis
- Homologous live attenuated virus vaccine (Neethling strain)
  - Immunity conferred lasts up to 3 years.
- Heterologous live attenuated virus vaccine(Sheep or goat pox vaccine)
  - It may cause local or severe reactions.
  - Follow manufacturer's instructions.
  - Not advised in countries free from sheep and goat pox.
- No new generation recombinant capripox vaccines available for commercial purpose.

For more detailed information, please refer the Chapter 2.4.13. Lumpy skin disease in the OIE Manual of Diagnostic Tests and Vaccines for Terrestrial Animals.

Aetiology

Classification

Family *Poxviridae* – Genus *Capripoxvirus* – 1 serotype of Lumpy Skin Disease Virus (LSDV)

Diagnosis

Incubation period
- Not reported under field conditions
- The onset of fever: in 6-9 days from inoculation
- Fist skin region: appeared in 4-20 days at the inoculation site

Clinical findings
- Nodules with congestion, haemorrhage, oedema, vasculitis and necrosis
- Enlargement of lymph nodes with lymphoid proliferation, oedema, congestion and haemorrhage
- Pox lesions of mucous membranes of both digestive and respiratory tract
- Oedema and areas of focal lobular atelectasis in lungs
- Pleuritis with enlargement of the mediastinal lymph nodes
- Synovitis and Tendosynovitis with fibrin in the synovial fluid

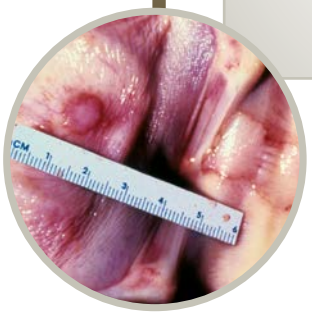
OIE standards on trade

General provisions
- Incubation period: 28 days
- Susceptible animals: cattle (*Bos indicus* and *B. taurus*) and water buffalo (*Bubalus bubalis*)
- Veterinary Authorities should require the conditions relevant to the LSD status of the cattle of the exporting country to authorise import or transit of the commodities.

LSD free country
- LSD is notifiable in the country
- No case of LSD has been confirmed for at least the past three years
- No vaccination against LSD has been performed for at least three years
- The commodities are imported in accordance with chapter 11.11 of the *Terrestrial Animal Health Code*.

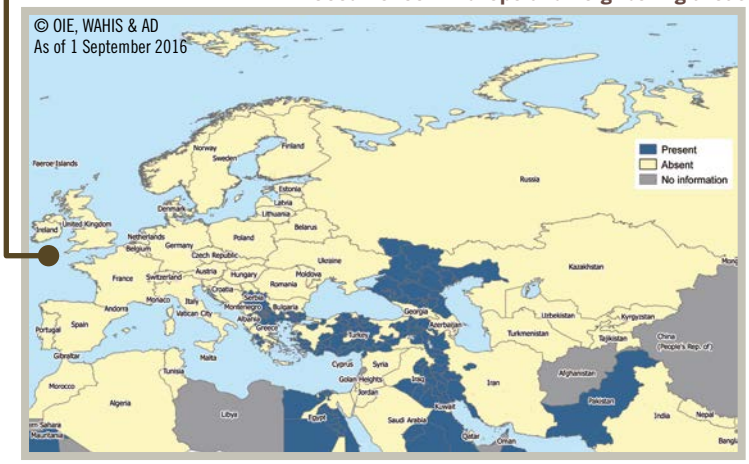
For more detailed information, please refer to the Chapter 11.11. Lumpy skin disease in the OIE Terrestrial Animal Health Code.

Cow, shoulder. Early skin lesions of lumpy skin disease. © PIADC (OIE Atlas of Transboundary Animal Diseases)



Cow, glottis and epiglottis. Multiple circular, raised, flattened nodules in the mucosa. © PIADC (OIE Atlas of Transboundary Animal Diseases)

Occurrence in Europe and neighboring areas



Diagnostic techniques

Method	Purpose					
	Population freedom from infection	Individual animal freedom from infection prior to movement	Contribute to eradication policies	Confirmation of clinical cases	Prevalence of infection – surveillance	Immune status in individual animals or populations post-vaccination
Agent identification*						
Virus isolation	+	++	+	+++	+	N/A
Antigen detection	++	++	++	++	++	N/A
PCR	++	+++	++	+++	++	N/A
Detection of immune response						
VN	++	++	++	++	++	++
IFAT	+	+	+	+	+	+

* A combination of agent identification methods applied on the same clinical sample is recommended.
+++ (recommended method); ++ (suitable method); + (used in some situations, but cost, reliability, or other factors severely limits its application); N/A (not applicable)
PCR (polymerase chain reaction); VN (virus neutralisation); IFAT (indirect fluorescent antibody test).

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