

## Outbreak of Lumpy Skin Disease (LSD) in cattle – A recent epidemic in Jaffna district

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### 1. Introduction

Lumpy Skin Disease (LSD) is an economically devastating disease in cattle caused by Lumpy Skin Disease Virus (LSDV). The principal mode of transmission is by haematophagous arthropod vectors such as flies (*Stomoxys calcitrans*), mosquitoes (*Aedes aegypti*) and hard ticks (*Rhipicephalus* and *Amblyomma* species) (Sprygin et al., 2019). LSDV is host specific that affects only cattle and buffaloes with a high morbidity rate (Hasib et al., 2021) and a low mortality rate between 1-3 % (Rahman, 2020). All the cattle populations irrespective of breed, age and sex are susceptible to LSDV (Salib & Osman, 2011). The first case of LSD was identified in Zambia in 1929. Earlier LSD was confined to African continent only. However, it was spread to Asian and European countries later (Rahman, 2020).

LSD is manifested by cutaneous nodules, fever, anorexia, salivation, rhinitis and oedema of different parts of the body. The major economic impacts of LSD are mastitis, reduction in milk yield, abortion in pregnant animals and mortality. Therefore, LSD is enlisted as a notifiable disease by the World Organisation for Animal Health (OIE) due to its trans-boundary spread, threat to animal health and economy (Hasib et al., 2021). There is no published information available about the LSD outbreak in this region. Therefore, this study reports the clinical features and impacts of LSD in cattle.

### 2. Materials and Methods

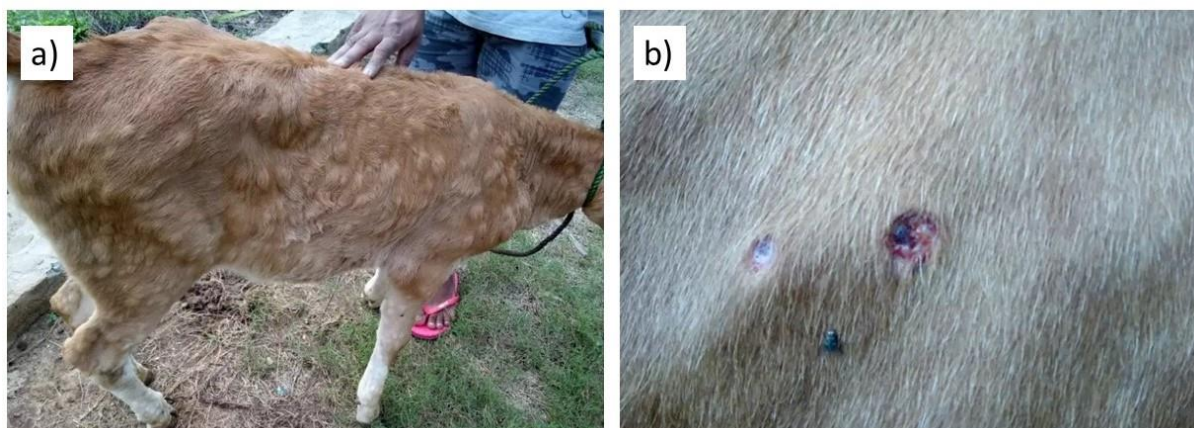
The study area, Jaffna, is a district that belongs to Northern province, Sri Lanka. This region was totally free from previous LSD outbreaks. The present study was conducted on 235 cattle presented to the Veterinary Surgeon's Office with the characteristic clinical signs of LSD. These animals were clinically examined and relevant details such as breed, sex, age and physiological status were gathered using a pre-structured questionnaire. The data were analysed and presented as the percentage of infected cattle.

### 3. Results and Discussion

The infected cattle showed the characteristic signs such as cutaneous nodules (Figure 1-a), salivation, rhinitis, anorexia, fever, and swelling of limbs, brisket, ventral abdomen and subcutaneous tissue at the early stage of the disease. The significant commonality found in the majority of the affected population was cutaneous nodules which were distributed randomly all over the body. They initially appeared in small sizes and later developed into large nodules in different sizes (10-50 mm in diameter) and number range from a few to hundred. In few animals, some nodules were coalesced into large irregularly circumscribed nodules. Nodular lesions were hyperaemic and painful which involved skin, subcutaneous tissue and musculature depending on the severity of the illness.

In severe cases, these lesions persisted for two weeks and with the disease progression, considerable number of nodules became necrotic with a deep scab formation. However in some cases, the nodules were ulcerated and prone to secondary bacterial infection (Figure 1-b). Oedema of limbs, brisket, dewlap and subcutaneous tissue was a prominent feature observed

in the affected cattle resulting in lameness and difficulty in lying down. Ruptured swellings with oozing of pus attracted flies and ended up in myiasis.



**Figure 1. Clinical signs of the cattle affected by LSD; (a) Skin nodules and (b) Well-circumscribed ulcers on skin**

The study found that cattle belong to different breeds, ages and sexes were affected with LSD which was also evidenced in other studies conducted in different countries (Salib & Osman, 2011). Lactating cows were the highly affected group (58.7%) in this study, which could be due to the physiological changes and affiliated immunosuppression in dairy cows (Ingvarlsen & Moyes, 2015; Rahman, 2020). This subsequently resulted in dropped milk yield which was a detrimental impact to dairy farmers. The prevalence of LSD was low in bulls with 4.3% of the study population. This finding is in line with a study conducted in Bangladesh which reported that the lowest prevalence was observed in bulls of 5% (Hasib et al., 2021). The calves, heifers and dry cows were infected with 17.9%, 8.5% and 10.6%, respectively (Table 01).

**Table 01. Classification of LSD infected cattle according to age and sex**

Category	Percentage (%)
Calves	17.9
Heifers	8.5
Lactating cows	58.7
Dry cows	10.6
Bulls	4.3

#### 4. Conclusions

Cattle under the study showed skin lesions as a marked sign with salivation, rhinitis and oedema of body parts. All the cattle regardless of age, sex and breed were infected with similar clinical presentation. The lactating cows were mostly affected while a low incidence was noticed in bulls. Lameness, milk reduction and mortality were the economic impacts encountered in the studied population. Early detection of the disease is pivotal to implement preventive measures like movement restriction, vector control and vaccination programs which could decelerate the spread of the disease and downgrade the adverse consequences of LSD in livestock sector.

## 5. References

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