

Lumpy Skin Disease: emerging outbreak in India

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Abstract

Lumpy skin disease is a viral infection of cattle. Originally found in Africa, it has also spread to countries in the Asia recently. Clinical signs include fever, lacrimation, hypersalivation, and characteristic skin eruptions. Over 97,000 cattle died in India's lumpy skin disease outbreak. Gujarat was the first state to report cases of LSD. Attenuated vaccines may help control outbreaks. This outbreak causes direct economic loss in milk production and Gujarat reported a dip in milk collection amounting to approximately 1,00,000 liters per day

Introduction

Lumpy skin disease is an infectious, eruptive, occasionally fatal disease of cattle characterized by nodules on the skin and other parts of the body. Secondary bacterial infection often aggravates the condition.

Over 97,000 cattle died in India's lumpy skin disease outbreak in the three months from July to September 23, 2022, Cattle in 15 states across India were impacted in three months, beginning with outbreaks in Gujarat and Rajasthan. More than 65 percent of the 18,50,000 cases reported on September 21 came from Rajasthan. In Rajasthan, there were reportedly around 50,000 fatalities. According to the most recent livestock census, India had 192.5 million cattle.

Etiology: a virus of the family Poxviridae, also known as Neethling virus.

Host: Giraffes, water buffalo, and impalas have all been reported to have LSDV, which primarily affects cattle and zebus. Although all age groups are susceptible to the disease, young calves and cows in their prime lactation have more severe clinical signs.



Transmission: High humidity and temperature are related to LSDV outbreaks. Although outbreaks can happen at any time of year, they are typically more common during the wet summer and autumn months, particularly in low-lying locations or close to water. The disease is carried mechanically by mosquitoes and flies like the *Stomoxys*, *Biomya fasciata*, *Tabanidae*, *Glossina*, and *Culicoides*. Lumpy skin disease outbreaks are typically sporadic because the vector populations are influenced by animal movements, immunological condition, and wind and rainfall patterns.

Blood, nasal discharge, lacrimal secretions, semen, and saliva are among ways in which the virus might spread. Suckling calves can also contract the disease from milk that has been infected.

Clinical signs: Infected cattle develop

- High body temperature (>40.5°C)
- Lacrimation
- Nasal discharge and hypersalivation
- Nodule development
- Raised, circular, firm, coalescing nodules – Common on head, neck, udder, perineum, legs – Cores of necrotic material called “sit-fasts”
- Decreased milk yield
- Enlargement of superficial lymph nodes.
- Rhinitis, conjunctivitis
- Lameness
- Abortion and sterility

Diagnosis: Histopathology, virus isolation, or PCR

The disease may be confused with the less clinically important **pseudo-lumpy skin disease**, which is caused by a herpesvirus (bovine herpesvirus 2).

Treatment and prevention: Attenuated virus vaccines may help control spread.

Quarantine restrictions have proved to be of limited use. Vaccination with attenuated virus offers the most promising method of control.

Administration of antibiotics to control secondary infection and good nursing care are recommended, but the large number of affected animals within a herd may preclude treatment. The goat pox vaccine has proven effective in a recent outbreak in India. The goat pox vaccine is produced by the Veterinary Biological Research Institute in Telangana, Indian immunological, and Hester Biosciences in India.



Recent outbreak in India

In November 2019 lumpy skin disease in the country was confirmed in a lab. In places like Odisha, it was mostly isolated to occasional incidences. The disease differed between the outbreaks in 2022 and 2019, according to comparisons and analyses. Between December 2019 and January 2021, states like Kerala each recorded 30 to 40 cases. In August 2020 cases were reported from Assam.

In April 2022, Gujarat was the first state to report incidents. Gujarat banned the transportation of cattle in some districts as of late July 2022 and on 14 September cattle transport in Mumbai was banned and health certification is needed for movement further, On 20 August Panchkula district also banned inter-district transport. The first incidence in Maharashtra was recorded on August 4 in the Jalgaon district. Rajasthan restricted livestock fairs on August 6th. On 23 September Uttar Pradesh initiated more bans in movement of cattle. Even though it had no known cases of the disease, states like Chhattisgarh started taking preventive action. Delhi started free vaccinations on 26 September.

Impact

The value of the dead cattle and related losses, such as a decline in milk output and a reduction in yield in infected cattle, are included in the direct economic loss. Movement restrictions add to the indirect losses. Gujarat reported a decrease in milk collection in August 2022 of about 100,000 liters per day in some areas. In August 2022, the amount of milk collected in Rajasthan dropped by almost 20%; by September, the amount collected had dropped by 500,000–600,000 liters per day. In some places collection has fallen to zero in Rajasthan.

References

- Sharma, Harikishan (26 September 2022). [*"Lumpy skin disease: Nearly 1 lakh cattle deaths, toll almost double in three weeks"*](#). *The Indian Express*.
- Munjal, Diksha (20 September 2022). [*"Explained | What is lumpy skin disease in cattle? Does it affect milk we consume?"*](#). *The Hindu*. ISSN 0971-751X.
- Kulkarni, Abhimanyu (14 September 2022). [*"What Is Lumpy Skin Disease And How India Is Fighting It: 10 Points"*](#). NDTV.
- [*"Lumpy Skin Disease: Ban on livestock transport from 14 districts"*](#). *The Indian Express*. 27 July 2022. <https://www.fas.usda.gov/data/india-outbreak-lumpy-skin-disease-cattle-raises-alarm-cattle-rearing-communities-state-gujarat>
- <https://www.thenationalnews.com/world/2022/09/30/lumpy-skin-disease-kills-100000-cattle-in-india/>
- <https://www.bbc.co.uk/news/world-asia-india-62474457.amp>

