

Lumpy Skin Disease: An Emerging Challenge for Cattle

Ankita Bhosale¹, Snehal Misal², Prashant Rokade³

Introduction:

Lumpy Skin Disease (LSD) has emerged as an important health problem affecting cattle in many regions. The disease is characterized mainly by fever and multiple firm nodules on the skin. Although death rates are generally low, LSD can cause considerable economic losses through reduced milk production, weight loss, reproductive problems, treatment expenses and damage to the value of affected animals.

Understanding how the disease spreads and recognizing the signs early can help farmers take timely action and reduce its impact.

What Causes Lumpy Skin Disease?

Lumpy Skin Disease is caused by **Lumpy Skin Disease Virus (LSDV)**, which belongs to the genus *Capripox virus* and family *Poxviridae*. The disease mainly affects cattle and can also affect water buffaloes.

The disease was first recognized in Africa and subsequently spread to several other parts of the world, including Asia. Its

occurrence has become an important concern for cattle farmers because of its effect on animal health and productivity.

How Does the Disease Spread?

LSD is mainly spread by **blood-feeding insects**. Biting flies, mosquitoes and ticks can mechanically carry the virus from an infected animal to a healthy animal.

The risk of transmission may increase during warm, humid and rainy periods when insect activity is higher. Wet surroundings, stagnant water and poor sanitation may further favour insect populations.

Disease transmission may also occur through close contact and contaminated equipment. Shared feeding or watering facilities, contaminated materials and improper reuse of needles can contribute to the spread of infection.

Recognizing the Clinical Signs

The most characteristic sign of LSD is the development of **firm, raised nodules on the skin**. These may occur on different parts of

Ankita Bhosale¹, Snehal Misal², Prashant Rokade³

¹ Division of Livestock Production Management, ICAR-National Dairy Research Institute, Karnal- 132001, Haryana, India.

² Division of Animal Genetics and Breeding, ICAR-National Dairy Research Institute, Karnal- 132001, Haryana, India.

³ Assistant Professor, Department of Veterinary Pathology, M.B. Veterinary College Dungarpur, RAJUVAS, Bikaner 314001, Rajasthan, India

the body, including the head, neck, back, legs, udder and genital region.



LSD infected Cow

Other common signs include:

- ☞ Fever
- ☞ Loss of appetite
- ☞ Weakness and depression
- ☞ Enlarged lymph nodes
- ☞ Nasal and eye discharge
- ☞ Excessive salivation
- ☞ Swelling of the limbs
- ☞ Pain and difficulty in movement
- ☞ Reduction in milk production

In severe cases, skin nodules may become damaged, develop ulcers and eventually form scabs. Recovery can take considerable time, particularly when complications occur.

Effects on Milk Production and Animal Health

LSD can have a significant effect on the productivity of cattle. Fever, pain, reduced feed intake and general weakness may result in a noticeable decline in milk production.

Affected animals may also lose body weight and require a prolonged recovery

period. Skin lesions can become infected with secondary microorganisms, further affecting the animal's health and welfare.

Therefore, even when the disease does not result in death, its effects can continue for weeks and may reduce the overall productivity of the animal.

Impact on Reproduction and Farm Income

LSD can also interfere with reproductive performance. In affected animals, reproductive problems such as abortion and prolonged absence of normal reproductive activity may occur.

In bulls, the disease may affect reproductive performance and can sometimes result in temporary or permanent infertility.

For farmers, these health problems can translate into significant economic losses. Reduced milk production, weight loss, lower animal value, reproductive failure, treatment costs and damage to hides can all affect farm income.

Diagnosis of Lumpy Skin Disease

The clinical appearance of skin nodules can raise suspicion of LSD, but similar signs may occur in other diseases. Therefore, laboratory confirmation is important, particularly during outbreaks.

Samples such as material from skin nodules or scabs can be collected for laboratory examination. **Polymerase Chain Reaction (PCR)** is an important method used

for detecting LSD virus. Other diagnostic methods, including virus isolation and selected serological tests, may also be used.

Early confirmation helps veterinary authorities and farmers implement appropriate disease-control measures.

Prevention and Control Measures

There is no simple direct antiviral treatment that eliminates LSD from an affected animal. Management therefore focuses mainly on **preventing transmission, protecting healthy animals and providing supportive care to sick animals.**

Effective control requires several measures to be used together rather than relying on a single method.

Role of Vaccination

Vaccination is one of the important tools for reducing the impact and spread of LSD. Vaccination programmes should be carried out according to the recommendations of the concerned veterinary authorities.

Maintaining good vaccination coverage among susceptible cattle can help reduce disease occurrence and its associated losses.



Lumpy Skin Disease Vaccination

Importance of Farm Biosecurity

Good farm hygiene can reduce the chances of disease transmission. Farmers should:

- ☞ Keep animal sheds clean and dry.
- ☞ Dispose of manure and waste properly.
- ☞ Reduce stagnant water around the farm.
- ☞ Clean and disinfect equipment regularly.
- ☞ Avoid unnecessary movement of animals.
- ☞ Avoid sharing equipment between sick and healthy animals.
- ☞ Use needles responsibly and avoid inappropriate reuse.

Control of Insect Vectors

Since blood-feeding insects play an important role in transmission, reducing their population around livestock premises is an important part of disease management.

Proper manure management, removal of stagnant water and maintaining clean surroundings can help reduce insect breeding sites. Appropriate insect-control measures should be used under veterinary guidance.

What Farmers Should Do When LSD Is Suspected

Farmers should pay attention to sudden fever, skin nodules, reduced milk production and other unusual changes in their cattle.

When LSD is suspected:

Observe → Isolate → Inform → Control

The affected animal should be separated from healthy animals as far as practical. The farmer should immediately inform a veterinarian or animal health worker for proper examination and further action.

Early reporting is important because timely intervention can help reduce the spread of disease within the herd and to neighbouring farms.

A Practical Approach to LSD Management

Successful control of LSD requires cooperation between farmers, veterinarians, laboratories and animal husbandry authorities.

A practical approach includes:

**Vaccination + Insect Control + Biosecurity
+ Early Detection + Proper Animal Care**

Sick animals should receive adequate water, nutritious feed, shade and appropriate wound care. Veterinary treatment may also be required to manage pain, secondary infections and other complications.

Technology and surveillance can further support early detection and disease monitoring, but farmer observation and veterinary examination remain essential.

Conclusion: Prevention Is Better Than Losses

Lumpy Skin Disease is not simply a skin problem. It can affect **animal health, milk production, reproduction and farm income.**

Farmers can reduce its impact through regular vaccination, good farm hygiene, insect control, early recognition of signs and timely veterinary intervention. Working together, farmers and animal health professionals can help protect cattle health and reduce the economic burden of LSD.

Early detection and prevention are the key steps in managing Lumpy Skin Disease.**References**

1. Das, M., Chowdhury, M.S.R., Akter, S., Mondal, A.K., Uddin, M.J., Rahman, M.M., Rahman, M.M. An Updated Review on Lumpy Skin Disease: Perspective of Southeast Asian Countries. *J. Adv. Biotechnol. Exp. Ther.* 2021, 4, 322–333.
2. Yilmaz, H. Lumpy Skin Disease: Global and Turkish Perspectives. *Approaches Poult. Dairy Vet. Sci.* 2017, 1, 11–15.
3. Khan, Y.R., Ali, A., Hussain, K., Ijaz, M., Rabbani, A.H., Khan, R.L., Abbas, S.N., Aziz, M.U., Ghaffar, A., Sajid, H.A. A Review: Surveillance of Lumpy Skin Disease (LSD) a Growing Problem in Asia. *Microb. Pathog.* 2021, 158, 105050.
4. Akther, M., Akter, S. H., Sarker, S., Aleri, J. W., Annandale, H., Abraham, S., & Uddin, J. M. (2023). Global



Burden of Lumpy Skin Disease,
Outbreaks, and Future Challenges.
Viruses, 15(9), 1861.

