



Awareness on Lumpy Skin Disease among Cattle Farmers in Tirunelveli District of Tamil Nadu

M Gunaseelan* and P Thilakar

Department of Veterinary and Animal Husbandry Extension Education
Veterinary College and Research Institute
Tamil Nadu Veterinary and Animal Sciences University
Ramayanpatti, Tirunelveli District 627 358 (Tamil Nadu)

ABSTRACT

The present study was conducted to assess the level of awareness among cattle farmers about Lumpy Skin Disease (LSD) with respect to general disease, its transmission and prevention and control measures in Tirunelveli district of Tamil Nadu. The study was carried out among 150 cattle farmers who visited the Veterinary College and Research Institute, Tirunelveli from different areas of the Tirunelveli district of Tamil Nadu through personal interview by using pre-tested and semi-structured interview schedule. The awareness level was measured based on the mean score obtained by cattle farmers. The study revealed that, the respondents were more aware about Lumpy Skin Disease affecting cattle and lack awareness about disease caused by virus that causes abortion in dairy animals. Whereas, respondents had more awareness about 'introduction of infected animals to the herd', 'contaminated feed and water' can transmit disease in animals and less awareness with respect to movement of cattle and ticks, mosquitoes and flies can transmit the disease in animals. Regarding, prevention and control measures, respondents had more awareness that vaccination is the effective way to control Lumpy Skin Disease in cattle and less aware in respect of 'there is no specific treatment for Lumpy Skin Disease' and 'quarantine of newly purchased animals'.

Key Words: Awareness level, Cattle farmers, Lumpy Skin Disease, Prevention and Control.

INTRODUCTION

Lumpy skin disease (LSD) is a vector-borne disastrous viral disease affecting cattle and buffalo characterized by eruption of skin nodules, high fever, lacrimation and nasal discharge. LSD caused substantial economic losses to cattle farmers due to reduction in milk production, chronic emaciation in the affected herd, poor growth, mastitis, infertility, abortion and death in some cases (Lothe *et al*, 2022). The presence of growing numbers of naive (i.e. not immune) animals, abundance of active blood-feeding vectors, and uncontrolled animal movements are usually drivers for extensive LSD outbreaks. The primary case is usually associated with the introduction of new animal(s) into, or in close proximity to, a herd. Morbidity varies between 2 and 45 percent and the mortality rate is usually less than 10 percent. Susceptibility of the host depends on immune status, age, and breed. Generally speaking, high milk-producing European cattle breeds (Jersey and Holstein Friesian) are highly susceptible compared to indigenous African and Asian animals. Cows with high

milk production are usually most severely affected. Lumpy skin disease is host-specific, although mixed herds of cattle, sheep and goats are common, no epidemiological evidence on the role of small ruminants as a reservoir for LSDV has been reported (Tuppurainen *et al*, 2017). Disease surveillance is an important activity that provides the basis for knowing the disease burden in a country for follow-up actions to control, prevent and eventually to eradicate the disease (Kumar *et al*, 2021). Also, the use of ICT tools has the ability to provide latest information about disease outbreaks and forecasts (Jat *et al*, 2021). Training and capacity building programmes are essential to increase knowledge and awareness level of farmers (Madhu, 2020). To this essence, the current research study was carried out to assess the awareness level of the cattle farmers about Lumpy Skin Disease (LSD) and enhances the knowledge of the cattle farmers and other stakeholders regarding various control and prevention measures against LSD that can play a significant role in the containment of the disease.

MATERIALS AND METHODS

The present study was conducted from the cattle farmers who visited the Veterinary College and Research Institute, Tirunelveli belonged to different areas of the Tirunelveli district of Tamil Nadu during August 2022 to July 2023. A semi-structured and pre-tested interview schedule was developed and a total of 150 respondents were interviewed. A set of 17 questions regarding Lumpy Skin Disease (LSD) that included the important recommendations given by the experts, various published documents and reports viz., general disease awareness, transmission, and prevention and control measures against Lumpy Skin Disease (LSD) were presented to the respondents. The awareness level was measured based on the weightage of '1' and '0' applied to each correct and incorrect answer, respectively. The awareness score of general disease awareness, disease transmission and prevention and control measures of a respondent was added to explore the awareness level of cattle farmers about Lumpy Skin Disease.

The awareness mean score of respondents was calculated by the following formula

$$\text{Awareness mean score} = \frac{\text{Respondent's total obtained score}}{\text{Maximum possible score}}$$

RESULTS AND DISCUSSION

Awareness level of Lumpy skin disease related to general disease aspects

The awareness about Lumpy Skin Disease (LSD) affecting cattle had awareness mean score of 0.76 and ranked first followed by symptoms of Lumpy Skin Disease in cattle ranked second with awareness mean score of 0.70. A similar result was reported by Fedhessa *et al* (2015) that the awareness of LSD among cattle keepers was 71.64 %. Awareness about 'Lumpy skin disease is considered as economically important disease of cattle' (0.63), 'Lumpy skin disease is a disastrous disease of cattle caused by a virus' (0.58) and 'Lumpy skin disease causes abortion in dairy animals (0.40) ranked as third, fourth and fifth, respectively. The results of the study unveiled that, cattle farmers

were more aware about Lumpy skin disease affecting cattle and less aware regarding Lumpy skin disease as a disastrous disease caused by virus and causes abortion in dairy animals.

Table 1. Distribution of respondents according to their general disease awareness.

Sr. No.	General disease awareness	Awareness mean score	Rank
1.	Awareness about Lumpy skin disease affecting cattle	0.76	I
2.	Symptoms of Lumpy skin disease in cattle	0.70	II
3.	Lumpy skin disease is considered as economically important disease of cattle	0.63	III
4.	Lumpy skin disease is a disastrous disease of cattle caused by a virus	0.58	IV
5.	Lumpy skin disease causes abortion in dairy animals	0.40	V

Awareness level of Lumpy skin disease related to disease transmission

Regarding disease transmission, respondents had awareness about introduction of infected animals to the herd can transmit the disease with score of 0.76 and ranked first. Awareness about other disease transmission aspects viz., 'Contaminated feed and water can transmit disease in animals (0.72), direct contact between animals can transmit the disease (0.64), movement of cattle (0.55) and ticks, mosquitoes and flies can transmit the disease in animals (0.44) ranked as second, third, fourth and fifth, respectively. Respondents of the study area were more aware that infected animals, contaminated feed and water can transmit disease among animals (Table 2). Further, the respondents were less aware that 'movement of cattle' and 'ticks, mosquitoes and flies' can transmit the disease in animals. Long-distance dispersal of LSDV seems to occur via the movement of infected animals, but distinct seasonal patterns indicate that arthropod-borne transmission is most likely responsible for the swift and aggressive short-distance spread of the disease (Sprygin *et al*, 2019). The results indicated that cattle farmers need to be educated about restriction of cattle movement during rainy season and control measures of ecto-parasites infestations.

Awareness on Lumpy Skin Disease among Cattle Farmers in Tirunelveli District of Tamil Nadu

Table 2. Distribution of respondents according to their awareness about disease transmission.

Sr. No.	Disease Transmission	Awareness mean score	Rank
1.	Introduction of infected animals to the herd can transmit the disease	0.76	I
2.	Contaminated feed and water can transmit disease to animals	0.72	II
3.	Direct contact between animals can transmit the disease	0.64	III
4.	Movement of cattle	0.55	IV
5.	Ticks, mosquitoes and flies can transmit the disease	0.44	V

Awareness level of Lumpy skin disease related to prevention and control measures

The study further reported that with respect to the prevention and control of Lumpy skin disease; vaccination is the effective way to control Lumpy Skin Disease in cattle had awareness mean score 0.86 and ranked first. Further, prevention and control measures including ticks, flies and mosquitoes control (0.78) ranked second, followed by isolation of the Lumpy skin disease virus-infected cattle (Third), cleaning and disinfection of animal shelters (Fourth), ethnoveterinary treatment for Lumpy Skin Disease (Fifth), there is no specific treatment for Lumpy Skin Disease (Sixth) and quarantine of newly purchased animals (Seventh) in that order. Table 3 vividly shows that, respondents of the study area were more aware that vaccination is the effective way to control Lumpy skin disease in cattle and less aware about quarantine measures for newly purchased animals. Vaccination along with strict quarantine measures and vector control could be effective in preventing the spread of the Lumpy skin disease (Tania *et al*, 2020).

Table 3. Distribution of respondents according to their awareness about LSD prevention and control measures

Sr. No.	Prevention and Control	Awareness mean score	Rank
1.	Vaccination is an effective way to control Lumpy skin disease in cattle	0.86	I
2.	Ticks, flies and mosquito control measures	0.78	II
3.	Isolation of the Lumpy skin disease virus infected cattle	0.70	III
4.	Cleaning and disinfection of animal shelter	0.65	IV
5.	Ethnoveterinary treatment for Lumpy skin disease	0.62	V
6.	There is no specific treatment for Lumpy skin disease	0.50	VI
7.	Quarantine of newly purchased animals	0.48	VII

CONCLUSION

The results of the present study concluded that the majority of the cattle farmers were small farmers and well aware of Lumpy skin disease affecting cattle, and vaccination is the most effective way to control the Lumpy skin disease in cattle. Despite this, the majority of the respondents lack awareness about disease caused by virus that causes abortion in dairy animals, the movement of cattle, 'ticks, mosquitoes, and flies that can transmit the disease to animals, and the quarantine of newly purchased animals. Hence the study recommends that, there is a prompt and calamitous need to create awareness among cattle farmers about several disease transmission routes and preventive and control measures against Lumpy skin disease through intensive awareness campaigns, social media, print media, Radio/TV talks and focused training programmes. Further, continuing veterinary education is to be inculcated to field veterinarians on the latest emerging and re-emerging diseases which promotes awareness about LSD to the farmers thereby augmenting their livelihood.

REFERENCES

- Fedhessa Gnare, Eyob Hirpa, Endale Balcha, Yohannes Hagos, Misgana Duguma, Morka Amante and Debela Abdeta (2015). Assessment of Community Awareness and Retrospective Study on Lumpy Skin Disease in Guto Gida, Wayu Tuka and Gidaayana Districts, Eastern Wollega, Ethiopia. *African J Basic & Appl Sci* 7(4): 194 - 199.
- Jat J R, Punjabi N K and Bhinda R (2021). Role of ICTs in transforming agriculture as perceived by tribal farmers in southern Rajasthan. *J Krishi Vigyan* 10(1): 230-236.
- Kumar H B Chethan, Jagadish Hiremath, Yogisharadhya R, Balamurugan V, Siju Susan Jacob, Manjunatha Reddy G B, Suresh K P, Rajeswari Shome, Nagalingam Sridevi M R, Patil S S, Awadesh Prajapati, Govindaraj G, Sengupta P P, Divakar Hemadri, Krishnamoorthy P, Jyoti Misri, Ashok Kumar, Tripathi B N and Bibek Ranjan Shome (2021). Animal disease surveillance: Its importance & present status in India. *Indian J Med Res* 153: 299-310.

M Gunaseelan and P Thilakar

- Lothe K M, Gaikwad A H, Hatzade, R I, Ghode V S and Shirame K R (2022). Lumpy skin disease: A clinical study of an outbreak. *Indian J Anim Health* **61**(2): 318- 322.
- Madhu S (2020). Effectiveness of training programme on the adoption behaviour of goat farmers in Punjab. *JKrishi Vigyan* **9** (1): 109-113.
- Sprygin A, Pestova Ya, Wallace D B, Tuppurainen E and Kononov A V (2019). Transmission of lumpy skin disease virus: A short review. *Virus Res* **269**: 197637.
- Tania G, Vanita P, Diksha B, Shivani A, Mandeep S and Rajesh C (2020). A review: Lumpy skin disease and its emergence in India. *Vety Res Communic* **44**:111–118.
- Tuppurainen E, Alexandrov T and Beltrán-Alcrudo D (2017). Lumpy skin disease field manual – A manual for veterinarians. *FAO Animal Production and Health Manual*, No. 20. Rome.

Received on 10/12/2023 Accepted on 8/2/2024