LUMPY SKIN DISEASE

Emerging Threat to Livestock Industry

ICAR-Agricultural Technology Application Research Institute (ATARI)

Zone-1, Ludhiana-141004, Punjab

Lumpy Skin Disease: Emerging Threat to Livestock Industry

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Authors:

Pragya Bhadauria
Parkash Singh Brar
Dil Md Makhdoomi
Tejbeer Singh
Brijvanita
Satbir Singh
Rohit Gupta
Rajbir Singh

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Preface

In the Indian economy, animal husbandry plays a key role. Approximately 20.5 million people directly and indirectly rely on livestock. At present, one of the major constraints of livestock and dairy industries is the spread of emerging diseases which causes a serious concern to the livestock owners. Lumpy skin disease (LSD) is one of the recently emerged devastating viral disease of cattle and buffaloes in the country causing significant economic losses.

In this context, ICAR-ATARI, Ludhiana had made an effort to summarize the current knowledge of LSD and its impact in north Indian states. Krishi Vigyan Kendras of the Zone-1 also played a significant role in curbing the disease menace with their limited resources. The recent spread of disease in the new climatic conditions as well as previously disease-free regions of the country underlines the importance of developing an in-depth understanding of the disease by all the veterinary professionals. Simultaneously, mass awareness among all the related stakeholders and preventive strategies towards control and eradication of the disease is the need of the hour for such outbreaks.

During the endeavour, first and foremost, we would like to appreciate the role of Krishi Vigyan Kendra of the Zone for their war foot efforts shown during the outbreak in their districts. We are also thankful to the intellectual inputs received from various experts from GADVASU, Ludhiana and SKUAST-Kashmir in compilation of this publication. A special gratitude to all those farmers who have provided insights' of their suffering due to this deadly disease.

We are sure this publication would enhance the awareness of the disease and the various organised community efforts should be taken care in collaborative manner to prevent its further emergence in the country.

Editorial

Introduction

India has the largest livestock population in the world and comprises 15% of the world's animal population. As per the Basic Animal Husbandry Statics report - 2021, the total livestock population is 536.76 million in India. In the Indian economy, livestock plays a key role and the sector of livestock contributes about 6.20 % of the total GDP and 31.0 % of the total GDP for agriculture (BAHS, 2021). Livestock provides livelihood to 2/3rd of rural communities in India (economic survey 2020-21). North-western region of India comprising the UTs of Jammu and Kashmir, Ladakh, Himachal Pradesh, Punjab and Uttarakhand has its own distinctive environmental beauty and elegance. Most parts of the northwest are plains and have hilly areas surrounded by the himalayan ranges, where agriculture is the prime source of livelihood. Livestock is an important component of agriculture where the majority of farmer's livelihood is based on diversified livestock species. Livestock production is the endeavor of the small holders (marginal, small and land less) and over 80 percent of all species of livestock of this region are owned by these section of farmers. In hilly and temperate regions, over 70 % of the population directly or indirectly depends on livestock as an alternative source of income. Livestock sector in north India is extremely livelihood intensive and livestock farming is an integral component of the mixed farming system.

Among various livestock, the dairy sector is the largest commodity which accounts for 5.0% of the national economy and employing almost 80 million farmers directly. The country ranked first in milk production (209.96 million tons, 2020-21), contributing 23% of global milk production. As per NDDB (2019-20) the state wise production of Pubjab was 13348 (000 tones) and the state has highest per capita milk availability of 1221 gram/day (NDDB 2019-20) as against the all India per capita milk availability of 427 gram/day (Economic Survey 2020-21).

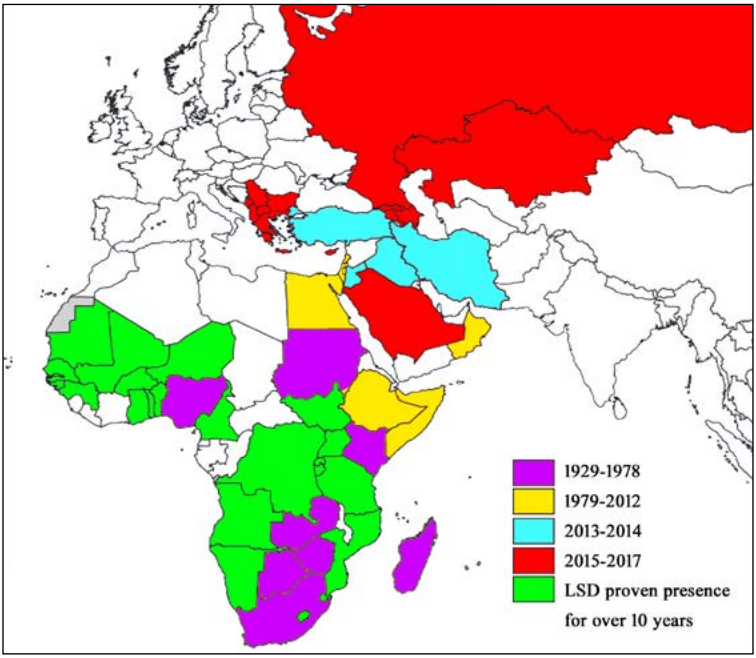
Milk production from the bovine depends on various factors i.e. quality of feed, environment variation, disease incidences etc. Outbreak of any disease makes a sharp fall in milk production and affects livestock temporarily or permanently. Out of these disease incidences, Lumpy Skin Disease (LSD) created havoc in the dairy industry of the northern states of India in the previous year.

Origin

Lumpy skin disease (LSD) is a notifiable disease, according to World Animal Health Organization (OIE), because of its rapid spread and economic losses. Historically, LSD has remained confined to Africa, where it was first noted in Zambia in 1929, and some parts of West Asia. Initially, it was thought to be either poisoning or allergic reactions to the insect bite. In 1940's, cases were reported from Zimbabwe, Botswania and South Africa also. About 8.0 million cattle were affected during this decade. In 1989, the outbreak was observed in Israel, the first case reported outside Africa. But in recent years, the disease has spread to territories beyond the endemic region. In 2013, LSD also spread to Turkey, followed by Azerbaijan (2014), Armenia (2015) and Georgia (2016) and it wreaked havoc in the Balkan and Caucasian countries along with Russia. It was once entirely confined to African countries, but since 2012 it has spread rapidly through the Middle East, Southeast Europe and West and Central Asia. However, since its arrival in Bangladesh in July 2019, LSD has been spreading across Asia as an epidemic. The disease spread to seven countries by the end of 2020 — reaching China and India in August 2019, Nepal in June 2020, Taiwan in July 2020, Bhutan along with Vietnam in October 2020 and Hong Kong during November 2020 (Risk assessment report, FAO). At least 23 countries in south, east and South-East Asia are now at risk of LSD. India too observed the first case of LSD in the same year (2019) in five districts of Odisha (Sudhakar *et al.*, 2020). In all, 182 of 2,539 cattle were affected with an apparent morbidity rate of 7.1% with no mortality. Over the next two years, sporadic cases were seen, including in Maharashtra and Gujarat. But during the previous year (2022) the disease has been reported in western and northern states as well as in island of Andaman Nicobar. The first LSD was reported in Gujarat and has spread to eight states/union territories by now. Since then, there had been several LSD outbreaks in India and the disease had spread to Rajasthan, Gujarat, Maharashtra, Punjab, Haryana, Himachal Pradesh, Uttarakhand, Uttar Pradesh, Madhya Pradesh, Jammu and Kashmir and Delhi with maximum cases reported in Rajasthan and Gujarat. The recent wave, since May-June 2022, was unusual not only for morbidity or the rate at which animals were contracting the disease, but also mortality. The outbreak of disease in 2022 had infected around 29.45 lakh cattle, caused nearly 1.55

lakhs deaths and was spread to 251 districts in 15 states of India.

For now, it looks that susceptibility to the disease is more among cattle with compromised immune systems. Stray cattle pose a high risk problem because they are comparatively weaker and have low immunity in general, very difficult to isolate. Death from LSD is reported more from drought prone area in Gujarat and Rajasthan. A very undersized number of buffaloes have been infected across the country. Exotic and high breed animals are more prone to the disease in comparison to local native breeds.



Source: OIE WAHID and EMPRES-i, 2017

What is Lumpy Skin Disease?

Lumpy skin disease is an infectious viral disease of cattle. The disease is characterized by high fever and enlarged superficial lymph nodes on the skin and peculiar multiple nodules or lumps on the skin. It can also lead to death, especially in animals that have not previously been exposed to the virus or have low immunity. It is transmitted by blood-sucking insects, such as certain species of flies, mosquitoes and ticks. LSD is a highly host-specific

disease. It primarily affects cows and a less extend in buffalo. Morbidity rate is higher in Cattle than Buffalo. It affects calves and heifers more as compared to adult animal in the case of cattle. Some LSDV strains may replicate in cattle and sheep, but till date no epidemological evidence on role of small ruminants as a resevoir for LSDV has been reported.

Causative Agents

Lumpy skin disease (LSD) is a viral infection caused by the lumpy skin disease virus (LSDV) of the capripox virus genus in the poxviridae family. LSD virus is identical to sheep pox virus (SPV), and goat pox viruses (GPV) which are closely related although differ phyto-genetically. LSD virus is also known as Neethling virus.

Transmission

- The virus transmission occurs through the movement of animals or unrestricted movement of stray animals. Infected animals excrete viruses in saliva as well as in nasal and ocular discharges. It can remain in saliva for 11 days (after the development of fever). The virus can be found in skin nodules even after 33 days of infection.
- The virus primarily transmitted by arthropod vectors like common biting flies (*Stomoxys and Biomjie*), mosquitoes (*Aedes and Culex*) and some ticks (*Rhiphicephalus appendiculatus* and *Ambylomma hebraem*) are mainly responsible for its spread. The multiplication of vectors during the monsoon months causes faster spread of the disease.

Stable Fly

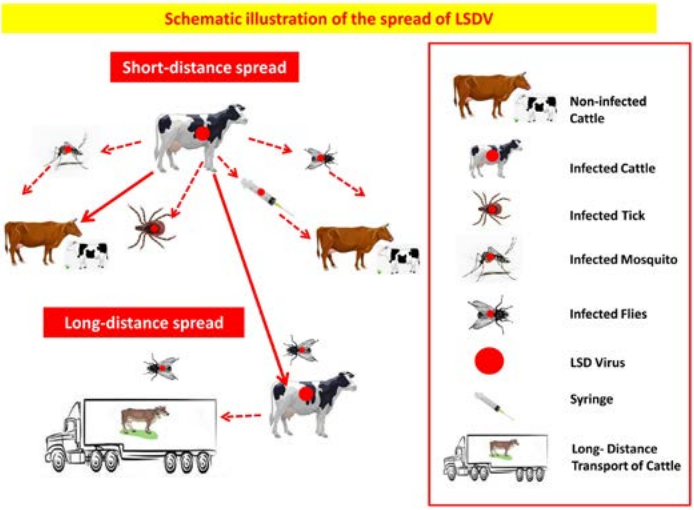
Tick

Mosquito

Common Fly

- The virus also persists in the semen of infected bulls, so natural mating and artificial insemination can also spread the disease. Thus, it is advisable to use bulls after 22 days of intervals for mating.

- Disease can also spread from females to calves with skin nodules; suckling calves can get infection from milk and from skin nodules in teat. Virus remains in the skin nodules for 33 days.
- LSDV remains viable in infected tissue of animals for around 120 days, for 35 days in dried crust and 18 days in hides at the farm.



Source: 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. Food and Agriculture Organization of the United Nations (FAO).

Risk factors

- Risk factors associated with the spread of LSD include warm and humid climate, conditions supporting an abundance of vector populations. The poorly ventilated sheds in the villages and urban dairies adjoining animal keepers' residences and the open grazing areas provide suitable conditions for the growth of wide range of blood-feeding arthropod vectors.
- The herd size, vector populations, distance to the water bodies, migration of herd, transport of infected animals into disease-free areas, common pasture have all been considered as other risk factors which may increase the disease prevalence. Furthermore, the wind direction and its speed also contribute to the virus expansion.

- Cattle markets where purchasing and selling of animals is being carried out by the farmers is another risk factor. At these markets, animals mix freely without effective biosecurity controls and purchased livestock results in the regular and frequent entry of new animals to the villages.
- All breeds and stages of the animals, as well as both sexes, are susceptible to the LSD. Other factor responsible for disease spreads are environment, management, common water sources, sex and age of the livestock.

What are the Symptoms of LSD in Animals?

- The symptoms of the disease aren't restricted to the mere appearance of skin nodules. In most of the cases, diseased animals are experienced severe pain, limbs swelling, loss of appetite and fever along with bleeding from the nodules.
- Initially lacrimation, nasal and ocular discharge and excess salivation is observed.
- Enlarged lymph nodes mainly sub scapular and pre femoral lymph node which are easily palpable.
- The disease affects mainly the legs of cattle, which get swollen, followed by high fever (>104°F) which persists for a week.
- Sharp reduction in milk yield.
- Skin lesions or nodular skin is highly characteristic symptom of this disease. Soft blisters like nodules on the body can be seen after 48 hours of febrile condition. Size of lesion varies from 10-50 mm diameter. The number of lesions varies from few in mild cases to multiple in severe cases. Predilection sites are skin of the head, neck, perineum, genitalia, udder and limbs. Gradually some nodules open up like a deep wound in the skin. The infected animal takes a week to get rid of this after a proper treatment of disease that starts with developing of scabs in the centre of the nodules and take a month to heal.
- Blindness occurs in worst cases due to ulcerative lesions in cornea in one or both eyes.

- Secondary bacterial infection in joints and legs leads to lameness in severe case, pneumonia and mastitis also observed.
- Subclinical infection is mainly observed in the field conditions.
- During post mortem examination, pock lesions can be found on the entire digestive and respiratory tract and on every internal organ.
- Pregnant cows may abort and remain in anoestrous for several months.

Pic 1: Severely affected cow with skin lesions covering the entire body

Pic: 2 Animals with Moderate Cases

Pic: 3 Animals with Mild Cases

Pic 4: Lesions on head & Neck

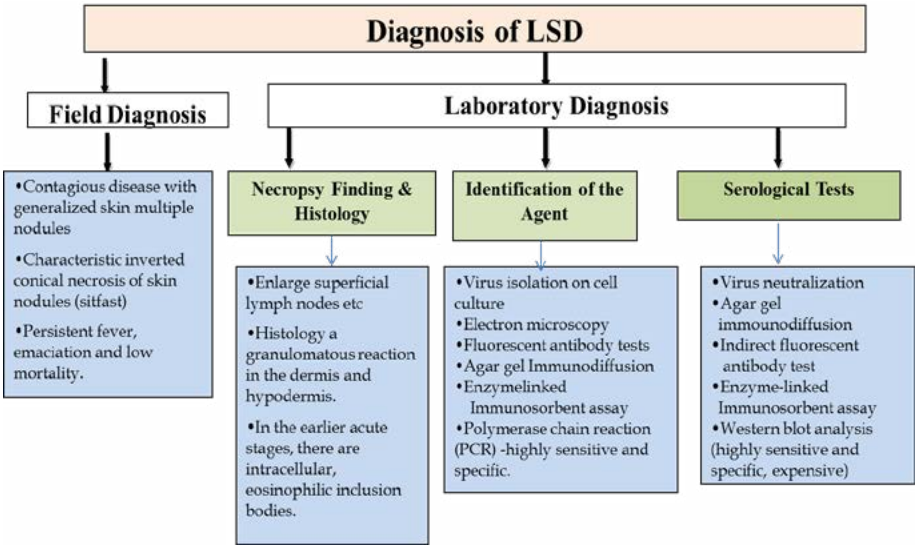
Pic 5: Lesions on udder and teat

Pic 6: Lesions on limbs


Pic 7: LSD in Calves


Pic 8: Recovered animal


Fig:1 The diagnostic procedures for lumpy skin disease



Sources: K. A. Al-Salihi, (2014). Lumpy Skin disease: Review of literature. MRSVA. 3 (3), 6-23.

Differential Diagnosis

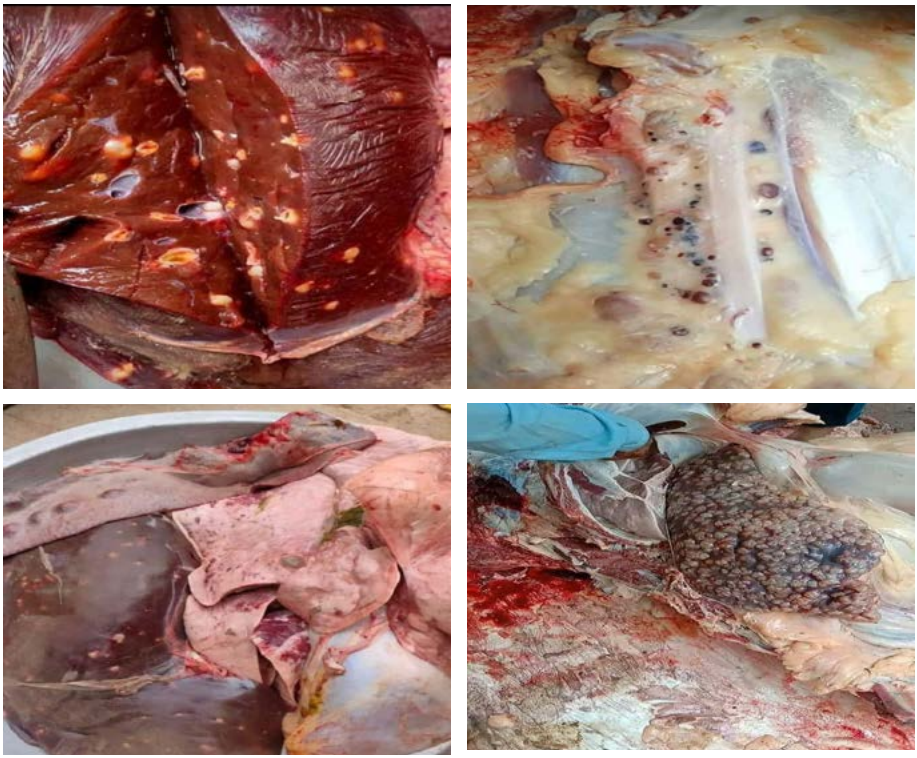
Many diseases show similar signs as that of lumpy skin disease. Making a candid diagnosis to ensure the paramount preventative measures for susceptible livestock herd become important for a veterinarian. LSD can be confused with many diseases like Pseudo-lumpy-skin disease, Bovine viral diarrhoea/mucosal disease, Demodicosis (Demodex), Bovine malignant catarrhal fever, Rinderpest, Besnoitiosis, Oncocercariasis, Insect bite allergies, Pseudo cowpox, Photosensitization, Urticaria, Contageous TB, Vaccinia/Cowpox Virus.

Zoonotic Aspects of LSD

There is no scientific proof so far that lumpy skin disease is a zoonotic disease which can spread from animals to humans or vice versa. During infectious period, the LSD virus may be transmitted to suckling calves through contaminated milk, or from skin lesions in the teats. However, there is no evidence regarding transmission of the LSD infection to humans through milk. However, it is recommended to carry out the basic food

hygiene principles e.g., proper boiling of the milk in order to stay safe from many of the other foodborne pathogens.

Pic 9: Post Mortem Findings



Measures for Prevention of Disease

- **Control of animal movement**

  In order to control lumpy skin disease, the movement of animals to and from the infected area should be completely restricted. This will check the transmission/spread of LSD. Cattle markets located within 10 km radius of the epicenter of infection should be closed. Ensure strict control of animal movement from affected areas to free areas and to local animal markets. When a particular area is found affected with disease, all trade of live cattle, participation in animal fairs, shows etc. should be banned immediately.

- **Restriction of affected animals and persons dealing with LSD livestock**

  Any livestock suspected of nodular skin disease along with fever should be isolated from the rest of the herd. If pox like lesions is observed in many animals simultaneously at the farm, take advice from a local veterinarian as soon as possible. In villages and affected regions, the infected animals should be kept isolated from healthy animals and barred from common grazing and thus to prevent direct contact with healthy animals. The movement of herdsmen to and from the infected premises should also be banned. The caretaker, who is attending to the diseased animals, should be kept away from the healthy herd.

- **Biosecurity measures**

  Escalate the surveillance against LSD in the affected area and in peripheral villages. Immediately isolate sick animals from the healthy animals. Based on the symptoms, treatment of infected animal should be started immediately with all precautionary measures. Liquid feed, soft feed and fodder should be advocated in the infectious cases. Personal protective equipment (PPE) should be used during attending the infected case or for the disposal of carcasses. Use separate shoes and clothes when in contact with infected animals to save other animals at the farm. Avoid visiting at other farms and do not allow anyone to your farm to stop the spread of disease. Disinfection of premises should be done at regular intervals. Ectoparasiticidal drugs can also be administered to the healthy animals on the onset of infection on the surrounding farms.The persons dealing with the infected animal should wear gloves and face masks and carry out hygienic and disinfection measures at all times. The information regarding unusual disease symptoms in local cattle should be immediately sent to the nearby veterinary hospital/ dispensary. Hygiene practices should be followed at the animal farm and by the people in areas where animals are infected. Veterinarians should visit regularly to the infected farm for curing the all infected animals. All precautionary hygienic measures should be taken by the veterinary field staff to avoid the further advancing of the disease to other farms. If mortality happens in infected case, carcass should be disposed off with deep burial observing all hygienic measures.

- **Hygiene and Sanitary measures**

Disinfect the farm with 5% Formalin (500 ml in 10 liter of water) to minimize the risk of disease transmission. Efforts should be made to alleviate the LSD vector population in the infected areas. Limiting vector breeding sites like standing water, slurry or manure by improving drainage system, various insecticides hinders breeding of flies and mosquitoes especially during evening time. LSD vector (flies, ticks, mosquitoes, midges, fleas) can also be control through application of insecticide, chemical agents and some other repellents in the infected premises and on the livestock skin. To bring down the mechanical transmission of LSD, healthy animal should also be applied with insect repellent. Thorough cleaning and disinfection of affected personnel, premises and contaminated environment including vehicles plying through the affected animal holdings should be carried out with appropriate chemicals/disinfectants [Ether (20%), chloroform, formalin (1%), phenol (2%/15 minutes), sodium hypochlorite (2–3%), iodine compounds (1:33 dilution), quaternary ammonium compounds (0.5%)].Cattle-shed must be regularly disinfected and infected cattle should be separated from the healthy stock.

- **Immunization measures**

Large scale immunization of cattle along with restriction on the movement of animals is a very effective measure to control the disease epidemic. Live attenuated LSDV vaccines provide good protection in cattle if 80% vaccination coverage is attained. Here upon, substantial

vaccination coverage (80–100%) is requisite for the successful control of the disease. Antigen of LSD virus is very similar to goat and sheep pox virus, so goat pox vaccine has been tried and tested on the cattle in the country. It takes approximately three weeks for the development of full immunity from the vaccine against the LSD. Through the response of vaccine, both humoral and cell mediated immunity developed against the pox viruses. However, animals which might be in their incubation period or infected should be strictly avoided for vaccination as majority of available vaccines are live attenuated, so there is risk of recombination virus and vaccine strains. Hence, suspected cows are left out of the vaccination process as per the established protocol. Animals which are at least 5 to 6 km from an infected area must be administered with doses. During vaccination virus may be incubated in some animals, in such cases clinical symptoms may be appear after less than 10 days of vaccination. In practice, all animals above 4 months of age need to be vaccinated including small calves and pregnant cows with goat pox vaccine @3 ml. Newly purchased animals, or any cattle supposed to moving somewhere, should be immunized with vaccine at least 28 days before the movement is commenced. Ring vaccination strategy should be adopted in regional vaccination campaigns in the affected and non affected areas. Pox vaccination provides immunity up to two to three years; however there is need of experiment for the validating the immunity period of post vaccination in the cattle. Due to some safety reasons and for preventive measures, the manufacturers of vaccine suggest annual vaccinations of the animals. A database of particular animal should be prepared, which would include data on animal ID/ No., health records, movement history and vaccination details. During previous year, on 16th September, 2022, the homologous live-attenuated LSD vaccine "Lumpi-ProVacind" technology, jointly developed by the scientists of ICAR-NRC on Equines and ICAR-Indian Veterinary Research Institute, Izatnagar (IVRI), was transferred to Biovet Pvt. Ltd., Karnataka for its commercialization. Lumpi-ProVacind is safe in animals and induces LSDV-specific antibody and cell-mediated immune response, besides providing complete protection against lethal LSDV challenge. Lumpi-ProVacind is used in the animal for the prophylactic immunization against the LSD. Homologous live-attenuated LSD

vaccines generate immunity for minimum one year post vaccination. A single dose of the pox vaccine usually contains 103.5 TCID50 of live-attenuated Lumpi Skin Disease Virus (Ranchi strain). The vaccine has great demand in India. The need of the hour is to commercialize this indigenous vaccine and expand its production. The veterinary field staff and vaccinators should be well trained for vaccination drives which also including storage, cold chain maintenance and preparation of vaccine, dosing, injection and record keeping of animals.

Source: IVRI, Izatnagar website

- **Therapeutic measures**

There is no prescribed medicine for LSD. However; symptomatic treatment of infected animals may be done to prevent secondary bacterial infections. Affected animals can be managed/ cured with commercially available antipyretics like vetalgin, meloxicam, ketoprofen, etc. However, if fever persists or the animal shows nasal discharge, antibiotics like ceftiofur, enrofloxacin, sulphonamides, dicrysticin can be administered to check secondary infection. Administration of anti-inflammatory and anti-histamine preparation may also be considered in severe cases. Application of anti-allergic and antiseptic ointments with fly-repellent properties can also be used on nodules as advice by the veterinarian. Affected animals can be treated at the farm itself;

they cannot be transported to hospitals or polyclinics, as high fever/ hyperthermia often develops in these animals due to high environmental temperature and humidity. Feeding of liquid feed, soft feed and fodder and succulent pasture is recommended for the infected animals. Relying on neem leaves feeding and producing smoke on burning neem leaves may be used to avoid an outbreak at farms.

Pic 10: Treatment of LSD affected animals

- **Ethno-veterinary Medication**

Ethno veterinary medicine is a practice of using the active compounds in the medicinal plants as treatment for diseases. The use of medicinal plants to manage the clinical conditions can reduce the loss due to the decreased productivity, expenses incurred in allopathic medicine, and the other side effects of allopathic medicine. There are numerous region specific EVM amiable for treating the disease. However, National Dairy Development Board (NDDB) suggested few of the effective oral and topical ethno-veterinary formulation to treat the disease is mentioned here.

1. Oral treatment for the first 3 days of infection

Ingredient	Quantity
Betal leaves	10 nos.
Black Pepper	10 nos.
Crystal Salts	10 grams
Jaggery	required volume

- Proper grinding the above said ingredients, make a paste after adding jaggery in it.
- For first 3 days paste should be fed to affected animals in every 3 hours of interval.
- Feed three dose every three hours for the first day (Day 1)
- From the second day onwards feed three doses daily for 2 weeks (Day 2 onwards)
- Each dose to be prepared freshly

2. Oral treatment 3 to 14 days of infection

Ingredients	Quantity
Garlic	2 nos.
Coriander leaves	15 grams
Cumin seeds	15 grams
Holy basil (tulsi)	1 hand full
Clove leaves	15 grams
Black Pepper	15 grams
Betal leaves	5 nos.
Shallots (small onions)	2 nos.
Turmeric powder	10 grams
Neem leaves	One hand full
Jaggery	required volume

- Grind the above ingredients well, mix them up with jaggery
- Feed the paste to the animal in 3 times in a day (morning, evening and night).

- Prepare dose freshly daily

3. Topical treatment for open wound

Ingredients	Quantity
AcalyphaIndica leaves (Kuppi, Kuppaiment)	One hand full
Garlic tooth	10 nos
Neem leaves	One hand full
Holy basil (tulsi)	One hand full
Turmeric powder	10 grams
Heena leaves	One hand full
Coconut oil	500ml

- Grind the above ingredients and boil them in 500ml coconut oil.
- After cleaning the wound oil should be apply on the wound when oil get sufficient cool.

If encounter with maggots: Anona leaf paste or camphorated coconut oil is very effective for the first day only if maggots are there in wound.

➢ **Breeding Measures**

Vaccinated breeding bulls do not shed virus in semen. Moreover, vaccination inhibits the excretion of virus in semen when these bulls were challenged. However, semen should not be collected and processed for frozen semen production and distribution from the animals showing clinical signs of LSD. The blood and semen from infected and clinically cured animals shall be subjected to agent detection by PCR with negative results before use for AI/natural service. The samples of the infected animals may be sent to nearby diagnostic labs or central laboratory in Bhopal for testing.

➢ **Carcass Disposal Measures**

Proper disposal of the carcasses also plays an important role in controlling the spread. According to World Organization for Animal Health (WOAH) proper disposal of the carcasses can include incineration

or burning of the bodies at high temperatures, along with disinfection of premises. Ensure proper burial of dead animals, carcasses of affected animals should be disposed of through incineration or buried in a 6x6x6 ft^3 pit with lime.

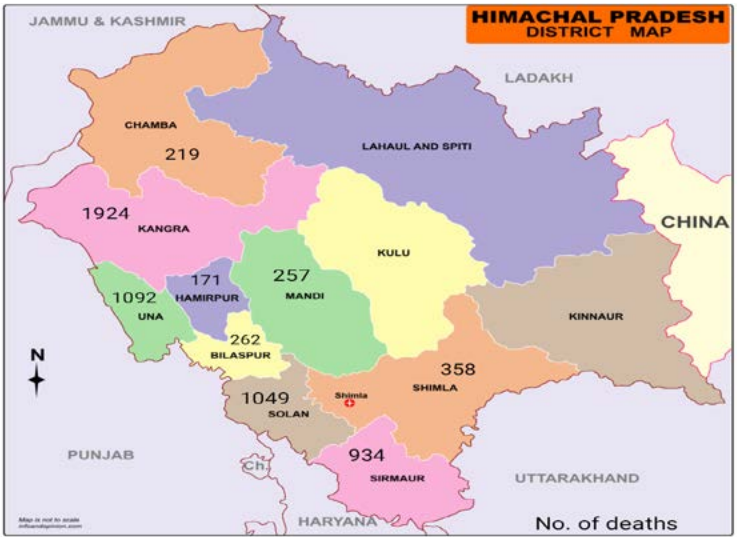
Pic 11: Carcass disposal by deep burial method

Economic Losses

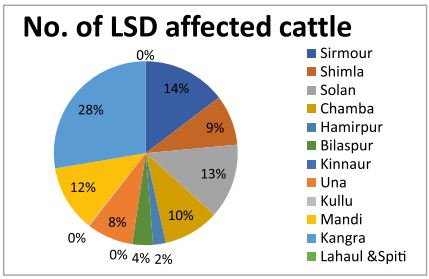
The outbreak of the Lumpy skin disease posed severe, broad and long-term effects on the livestock industries. The impact of the disease on the livestock and the farmers can be assessed quickly, but it is very difficult to quantify it in the paucity of accurate data. The expenses of an animal disease outbreak can roughly be divided into direct loss, which includes loss of milk, reproductive failure, treatment cost and preventive cost (vaccination, sanitization, vector control etc.). However, indirect losses encompass labor costs, disposal cost, transportation costs, damage to hide, reduction in selling value and reduction in drought power. Sometimes due to information scarcity, impacts of the other direct losses like infertility, abortion, reduced body weight and culling were not considered during the quantification of the total loss. Impact analysis becomes utmost important to the policy maker and farmer in calculating losses due to a particular disease outbreaks. Zone-1 consists of Punjab, Himachal Pradesh, Uttarakhand and UTs of Jammu, Kashmir and Ladakh. As per the reports, the State of Punjab severely suffered

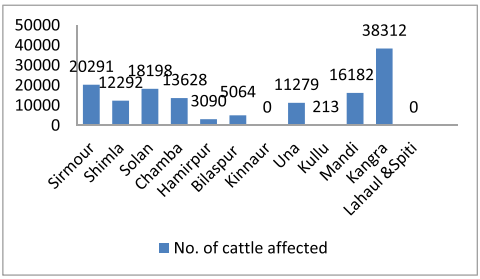
from the menace of Lumpy Skin Disease, followed by Himachal Pradesh. Comparatively fewer cases were reported in the UTs while sporadic cases were observed in the state of Uttrakhand..

In Punjab, initially the cases of LSD were suspected in the first week of July which was sent to Northern Regional Disease Diagnostic Laboratory (NRDDL) Jalandhar and later to which were further send to National Institute of High Security Animal Diseases (NIHSAD) in Bhopal for confirmatory diagnosis of the disease. Subsequently, after second week of the month, several cases were reported due to sudden death of certain cattle. Henceforth, LSD cases officially reported in the second fortnight of July 2022. As per press release (January 2023) Times of India, maximum cases of LSD were reported in Patiala (31908) followed by Hoshirapur (20983), Jalandhar (8819), Mansa (8744) and Sangrur (8091) with an average of 3000-7000 in the remaining districts. However maximum deaths were reported in Bathinda (2345) followed by Moga (2272), Ludhiana (2140), Sangrur (1938), Shri Muktsar Sahib (1216) and Patiala (1125) in Punjab. It was found that there were many reasons behind the outbreak such as sale-purchase of animals from adjoining districts, transportation and free movement of stray animals within and outside the state. Favorable environmental conditions for blood sucking insects were also involved in spreading of disease.



In Himachal Pradesh, on 18th June 2022, the first case of Lumpy skin disease was reported in Village Cheli Chounala, Shimla-Rural, Panchayat Maliana, District Shimla, Himachal Pradesh (Name of the epicenter). On 22nd June 2022 sample was submitted for analysis to NIHSAD Bhopal and by 29th June 2022, the confirmation of LSD was made. The animal affected was a Holstein Friesian cross brought from neighboring state of Punjab, which later on died due to the progression of Lumpy skin disease. Subsequently, the disease had spread to Solan, Kangra, Una, Chamba, Mandi, Sirmaur, Hamirpur and Bilaspur districts. Kangra was the most affected amongst all the districts of Himachal Pradesh. As per the data of Department of Animal Husbandry Himachal Pradesh, a total of 138549 cases in the state have been reported till 31st December 2022. The total deaths accounted due to LSD till date was 11019 in the state. So far 118230 cases have recovered and there are 9300 active cases of LSD in the state. The current vaccine requirement is about 320000 doses, whereas 559435 vaccine doses are presently available in the state. No cases were reported in district Kinnaur, Kullu and Lahaul & Spiti of the state till September 2022.





Source: Information on Lumpy Skin disease (LSD) during 2022 as on dated 31-12-2022 Deputy Director, Epidemiology Lab, Shimla-1

Direct Losses

1. Production losses

LSD outbreaks not only affect the microeconomics but also the macroeconomics. Loss of milk production is a major recurring loss in any disease which impacts the microeconomics of the farm. The repercussions due to production losses negatively regresses the farm economy. Punjab's total milk production from bovine is around 30 million lit/day, out of this 12.5

million liters being sold in the market. Punjab has around 2.5 million of cattle population. Dairy farmers have been affected badly due to the contagious nature of the disease. In Punjab, the dairy sector is facing biggest crisis so far and LSD had caused a huge monetary loss to the cattle owners. Dairy farmers dependent on the sale of milk were the worst-hit due to reduced selling because of people apprehension of not consuming milk from LSD infected cow. Many of the small farmers left the business because of losses and others were fighting with the disease doing vaccination and symptomatic treatment to save the life of animals which proved to be very costly. On the other hand, farmers were not registering cases and were hiding them to cope up their profit margin. Infection of the LSDV in the cattle reduced milk production during the illness period and sometime milk production remained low even after the recovery of the animals. The production loss incurred due to decreased milk production of the animals affected from LSD.

Due to the LSD outbreak state had witnessed about 15-20 percent loss in milk production. The milk production of the infected animals in the state reduced by 80% in first 15 days of morbidity and even after recovery from the disease the milk production was down up to 50% causing huge economic losses to the dairy farmers (depending on severity of disease). The milk production has decreased considerably and is not going to improve soon. Most of the infected cows were recovered in usual manner, although reduction in milk yield in lactating cows had been seen for several weeks. In a study it has found that about 35 percent of farm has loss 1 to 3 liters of milk per day per animal due to LSD outbreak. The economic loss due to loss of milk production per affected cow during entire course of LSD was estimated to be INR 8898.31. According to the experts, to that extent, there may be no immediate impact on milk production (as LSD hasn't also been reported much in buffaloes); the production will remain low for the coming 2-3 years as affected animals will not reproduce. Taking into account the official data (Press Trust of India, 2022), the overall economic loss due to LSD was estimated to be INR 18337.76 crores (USD 2217.26 million) at national level. In case of Punjab, for the same period the losses incurred due to LSD was estimated to be INR 1135.26 crores (USD 137.26 million).

Pic 12: Farmers with dead animal in Punjab

2. *Mortality*

There are several poor people who rear 2-3 bovines to earn their living and many such farmers have suffered huge losses due to the death of their cattle. In Punjab, the morbidity rate was usually up to 50% and mortality rate around 1-5% was observed. The mortality loss per head was highly variable between breeds, animal categories and districts. In some district like Shaheed Bhagat Singh Nagar (Nawashahar) 60 to 65 % mortality was observed in calves and heifers due to their low immunity. In another case study, it was observed that about INR 56400.00 has been lost by farmer due to death of his cattle. The per head mortality loss of local cattle was low (due to higher disease resistance) as compared to Holstein-Friesian local cross cattle (much more susceptible to LSD). HF cross bred immunity status is always in challenged condition because of their high yielding capacity, that's why they are more prone to get infection and in serious case succumbed to it. Adult animal with low immunity or co-morbidity like *Theileriosis* or *Babesiosis* were severely affected as compared to other animals and lead to higher mortality rates. Animals having high lactation number were also mostly affected as compared to others and abortion was also seen in them. Indiscriminate use of antibiotics and steroid by quacks caused major losses at most of the dairy farms due to lack of awareness about the disease which lead to sharp decrease in milk production (70-80%) in some farms. According to information obtained from Directorate of Animal Husbandry Department (Punjab), 17,575 cattle had died till September 15, 2022, while 1,74,052 cattle got affected by LSD in the state during the same period. Although,

the farmers claim the figure was very high as most of the cases which are treated by quacks and by owner himself are not registered in civil veterinary hospitals. The disease was rampant among cattle lodged in various shelter homes as compared to those owned by farmers. A majority of the mortality cases were reported from the *gaushalas,* because the virus spread quickly amongst the cattle due to shortage of space. An overall financial loss of Rs. 35000 to 80000 (depending on its milk production and breed of animal) per dead animal recorded which is a big loss for a farmer whose livelihood depends on crop-livestock or livestock production. Experts are suggesting that cows affected with LSD will not yield to its full potential for at least one year. In Himachal Pradesh farmers have suffered economic losses to the tune of approximately Rs. 65 crore. Out of which Rs. 32 crore losses alone are due to mortality of 11019 animals.

Pic 13: Farmers with dead animal in HP

3. Disposal of Dead Animal

One of the major issue reported was the disposal of carcasses, which was very expensive, costing between Rs.2,000 and Rs.3,000 per carcass, making it unaffordable for farmers. Those who disposed off the dead cattle jacked up their prices and started charging Rs.3,000. Carcasses were not buried as per the guidelines which lead to further spread of the disease. It became very difficult for dairy farmer to dispose-off carcass properly. As per the media reports, many farmers in villages disposed their animal carcasses in tributary channels of Sirhind canal and Kotbhai channel near Mehma Bhagwana village in Bathinda, which were further increasing the risk of disease spread in larger area. In Muktsar residents disposed the cattle carcasses near roadsides and in most of the cases these were thrown in the

open areas. However, disposing carcasses in water bodies is a dangerous trend and certainly a cause of concern. Farmers were reporting that neither the state government nor the district administration has been serious about the LSD that has already claimed the lives of thousands of animals so far.

Pic 14: Disposal of carcasses in water bodies and in open area

4. Livestock Trade

As far as the livestock business is concerned, animal traders' animals were also affected due to restriction of movement of animals. Feed industry was also hit badly by LSD due to low production resulting into less demand of feed by the animal owners. There was severe scarcity of medicine at shops, or getting vaccines and medicines at much higher prices from the medical shops. There was no proper plan for disposal of carcasses and cattle dying due to the disease. Earlier, the carcasses were skinned by professionals and it was sold in the leather industry, earning about Rs. 500-600 per animal. But after the LSD incidence cattle hide become perforated and has lost its value due to high grades of nodules scabs, ulcers and scars on it which made them unsuitable for leather industries. Due to the reduction in the quality of the animals, the effect was seen in the overall trade of live animals and animal products. Because of LSD milk, meat and leather industry became a big sufferer and was affected with heavy financial losses during the LSD outbreak in the regions.

5. Losses due to Treatment and Medication

It consists of diagnosis, medication and vaccination costs along with extra labor cost for seeking treatment of infected animals. Many herd owners in the region used public veterinary services to get their animals vaccinated

which is free of cost for contagious and trans-boundary animal diseases like LSD. Farmers were treating LSD infected animals with their own expenses while the treatment cost per animal was around Rs.500 to more than Rs. 3000 (depending on severity and duration of disease). It has reported that, Punjab state had spent about Rs.1.37 crore on the treatment of the LSD-affected cattle in the period of epidemic. Treatment of the affected animals is also one of the major contributors to the disease economics. The mean treatment cost using antibiotics per animal was estimated to be INR 3724.45.

Action Taken by Animal Husbandry Department of the States

To control the viral spread of Lumpy skin disease, the state governments banned the movement of cattle from other states along with cattle trade and fairs till the situation normalized. Veterinary officers and livestock inspectors are involved in carry out intensive survey; treatment and vaccination work in the affected areas. Block Development and Panchayats Officers and Executive Officers had been directed to spread awareness besides giving timely information, if any case was reported to the team for further action. They should also ensure fogging in all gaushalas situated in their respective areas. The State Animal Husbandry Department is following the ring vaccination procedure and prioritizing vaccination to healthy cattle lodged in close proximity with infected ones. Punjab Govt. has informed to procure 3.3 lakh doses of goat pox vaccine to effectively tackle the lumpy skin disease in the state. In Punjab, the department had constituted three rapid response teams, which were headed by veterinary officers, to ensure a round-the-clock surveillance of the disease. A door-to-door awareness campaign had been launched to make livestock owners aware of the disease and to take preventive measures such as controlling animals' movement and maintaining hygiene. The samples of infected animals were collected by rapid response teams from different villages and sent to the Regional Disease Diagnostic Centre (RDDL), Jalandhar for confirmation of the disease incidence followed by National Institute of High Security Animal Diseases (NIHSAD) in Bhopal. Containment zones had been set up to control the disease and necessary steps were taken to prevent the disease by isolating the diseased livestock. Fogging and fumigation in areas with many of dairy farms in the cities were also done by the State Animal Husbandry Department.

The sate veterinary university of Punjab, Guru Angad Dev Veterinary and Animal Sciences University (GADVASU), Ludhiana also led a massive campaign against Lumpy skin disease during its epidemic condition in the state of Punjab. Various activities like Awareness camps, Field days, Panel discussion etc. on LSD were organized by different departments of GADVASU, Ludhiana. Publications of literature/advisories in newspapers, magazines, e-magazines were also published for broader awareness of the disease among the farmers. Video messages were recorded and spread through social media sharing to reach the campaign to the unreached farmers. Phone calls of the sufferer were attended through its Pashu Palak Tele Advisory Kendra (PPTAK) application and solved the issues regarding LSD. Training camps for field staff being organized by the university to make them aware for advance treatment and preventive measures of the LSD outbreaks.

Action Taken by Krishi Vigyan Kendra of Zone-1

There are 72 Krishi Vigyan Kendra's under ICAR-ATARI, Zone-1 and about 45 of their KVKs have Subject Matter Specialist of Animal Science. The efforts taken by different KVKs to combat the deadly spread of Lumpy skin disease were as follow-

1. Massive Awareness Programmes

Regular surveys and awareness camps were organized in Gaushalas, Gausadan, Gaudham etc., along with awareness programs conducted at the village level. KVKs also ran awareness campaigns against Lumpy skin disease at on campus and off campus in various adopted villages. During the Kisan Sammelan organized by the Department of Agriculture, Una in village Takka, around 200 farmers were made aware of the management of the disease and measures being taken by the concerned departments. KVK Tarantaran conducted an interactive session on LSD with panchayat members in the adopted Model village named Kotbudha.

KVK Tarn Taran

KVK Muktsar

KVK Faridkot *KVK Jalandhar*

KVK Pathankot

KVK Ropar

KVK Bathinda

KVK Fatehgarh Sahib

KVK Bathinda

KVK Nawanshahr

KVK Hoshiarpur

KVK Muktsar

KVK Ferozpur

KVK Nawanshahr

KVK Rajouri

KVK Anantnag

KVK Pulwama

KVK Ganderbal

KVK Mohali

KVK Una

KVK Budgam

KVK US Nagar

KVK Kulgam

KVK Sirmour

KVK Mandi

2. Short Duration Training Programmes

Krishi Vigyan Kendras (KVKs) had conducted one-two day training programmes for progressive dairy farmers, with special reference to prevention and control measures for Lumpy skin disease. Along with these trainings, special sessions on LSD were also included in skill development training programs. KVK Kullu conducted participatory survey in nearby villages of Kullu district to educate farmers about Lumpy skin disease and

record cases in these areas. A total of ten lectures under various training programs were given to spread awareness about the disease. Regular advice regarding precautions and treatment of LSD was provided to the farmers. In KVK Gandarbal (J&K) the Subject Matter Specialist (AS), being a virologist delivered an expert lecture on "*Lumpy skin disease: prophylactic vaccination and biosecurity control measures*" during a one-day workshop organized by directorate of extension SKUAST-Kashmir for the field veterinarian of Animal Husbandry Department, Jammu and Kashmir.

KVK Bathinda

KVK Faridkot

KVK Hoshiarpur

KVK Muktsar

KVK Sangrur

KVK Tarn Taran

KVK Patiala

KVK Una

KVK Ganderbal

KVK Bandipora

KVK Pulwama

KVK Reasi

3. Collaborative Efforts

Concrete efforts for the control of Lumpy skin disease like awareness campaign,vaccination drive, distribution of medicines and supplements to control the secondary infection are being made in collaboration with department of animal husbandry were organized by KVK in collaboration with all the allied departments under the chairmanship of Deputy Commissioner along with Dept. of Animal Husbandry by many of the KVKs. KVK Fatehgarh Sahib prepared and distributed pamphlets regarding preventive measures related to the disease in association with ATMA in different villages of the district. KVK Samba (Jammu) has conducted several on-campus and off-campus programs to create awareness among the dairy farmers for preventive and treatment measures against the disease in collaboration with the Faculty of Veterinary Sciences and Animal Husbandry, R.S. Pura and Department of Animal Husbandry, Samba. KVK, Tarn Taran in collaboration with Punjab State Farmers and Farm Worker's Commission, Mohali and the Department of Horticulture had organized State Level Pear Mela. During the fair Dr. Inderjeect Singh, Vice Chancellor, GADVASU, Ludhiana addressed the farmers regarding the seriousness of the disease and Mr. Laljeet Bhullar, Cabinet Minister, Livestock, Govt. of Punjab, suggested farmers to seriously follow advisories from the KVK to curb the disease menace. KVK, Barnala and SAS Nagar were leading the campaign in massive ways by organizing an animal health camps at their respective districts.

4. Mass Media Coverage

Massive awareness of Lumpy skin disease through media coverage was carried out by various means, including radio talks on All India Radio (AIR), Bathinda in Punjab and adjoining states. KVK Faridkot conducted three film shows for dairy farmers regarding LSD, with special reference to biosecurity at their dairy farm. KVK Mandi and other KVKs also did publication of newspaper articles related to LSD. Useful literature and videos related to LSD were posted on various social media platforms like Facebook, Whatsapp. In J&K, for wide publicity of information regarding the disease, 600 pamphlets literature were distributed among people at Degree College, higher secondary schools, three schools, mosques and villages by KVK Kulgam. KVK Rajouri in Jammu conducted awareness regarding LSD on local news channels.

जागरूकता शिविर आयोजित

नाहन। कृषि विज्ञान केंद्र सिरमौर की ओर से धौलाकुआं गांव में लंपी त्वचा रोग पर पशुपालकों के लिए जागरूकता शिविर का आयोजन किया गया। केंद्र की पशुपालन वैज्ञानिक डॉ. हर्षिता सूद ने बताया कि यह वायरल रोग मवेशियों में तेजी से फैल रहा है। मच्छर, मक्खी, जूं, बीमार पशु की लार और दूषित खानपान से पशुओं के बीच यह रोग फैलता है। उन्होंने बताया कि गोशाला की नियमित सफाई और पशुओं की सघन निगरानी करें। संवाद

Dairy farmers suffer losses due to outbreak of Lumpy Skin Disease

GJ REPORT

JAMMU, AUG 18: Krishi Vigyan Kendra (KVK) Jammu in collaboration with Faculty of Veterinary Sciences and Animal Husbandry, R S Pura, SKUAST-Jammu and Department of Animal Husbandry, J&K today organised a press conference on Lumpy Skin Disease (LSD) to aware the livestock farmers about the disease.

Prof. M.S. Bhadwal, Dean, highlighted the problems associated with the outbreak of the disease in Jammu province of UT of J&K in particular. The dairy farmers are in great stress and have suffered losses due to the outbreak of this disease in dairy animals. He informed that various therapeutic and preventive measures are being taken by the state department of Animal Husbandry and SKUAST-Jammu to curb and minimize the effects of this disease. He informed that a Quick Response Team (QRT) of SKUAST-Jammu has visited many disease-affected areas and dairy clusters, and prescribed treatment along with preventive measures. The University has set up a toll free No. 18001807196 to advise and help the farmers. He advised farmers not to panic, and contact quick response team of the University for any help. Dr Altaf Ali, Chief Animal Husbandry, Jammu said that a Rapid Response Teams (RRT) of veterinary doctors block wise has been constituted to supervise and monitor this outbreak.

Dairy farmers are advised to restrict the movement of animals to different places as it can further spread disease to other areas. Farmers are also advised to adopt vector (flies, mosquitoes and ticks) control measures to and around the sheds of animals and vaccinate healthy livestock.

Thirty-four block level teams at various VAS centers with their phone numbers has been formed. A call center has been established with no 18001807205 to help the farmers. Dr. Rajiv Singh, Head, Division of Veterinary Medicine, said that an outbreak of skin disease among dairy animals from various districts of the Jammu division has been reported. Cattle are primarily affected.

The major symptoms of the disease include multiple nodules all over the body, swelling of limbs and lymph nodes, fever, lameness, decreased milk production, discharges from the eyes and nose, edema, pneumonia, and abortion in pregnant animals. The clinical signs resemble Lumpy skin disease which is an infectious viral disease caused by the Capripox virus of Poxviridae family.

KVK Jammu and faculty of Veterinary Sciences and Animal Husbandry of SKUAST-Jammu addressing the media on Thursday.

2 PALAMPUR • SATURDAY • 3.9.2022

लंपी रोग के प्रति सतर्कता बरतें पशुपालक

मच्छरों, मक्खियों और जूं से फैलता है रोग

कृषि विज्ञान केंद्र के वैज्ञानिकों ने जारी की एडवाइजरी

लंपी रोग की सूचना 2019 में ओडिशा में मिली थी

रोग की कैसे करें पहचान

रोग से बचाव कैसे करें?

KVK Mandi

Kashmir Images

CITY & TOWNS LOCAL BUSINESS NATION WORLD SPORTS OPINION

Added on May 1, 2019 Images News Network

KVK organizes LSD programme at Ganderbal

GANDERBAL. Krishi Vigyan Kendra (KVK), Ganderbal, organized a Live Stock Development (LSD) programme at Paheinoor, today, in which a scientist-farmer interaction and animal clinical camp was held, besides, broiler birds, area specific mineral mixture developed by SKUAST was distributed among farmers.

Member Legislative Assembly, Kangan, Mian Altaf Ahmad was the Chief Guest on the occasion.

Addressing a well-attended gathering of farmers Mian Altaf impressed upon farmers to take full advantage of the latest technology and techniques of agriculture and livestock farming from the top experts from SKUAST-K.

KVK Ganderbal

Awareness Camp on LUMPY SKIN DISEASE

ਕ੍ਰਿਸ਼ੀ ਵਿਗਿਆਨ ਕੇਂਦਰ ਲੰਗੜੋਆ ਦੀ ਟੀਮ ਵਲੋਂ ਮਝੋਟ ਵਿਖੇ ਵਿਸ਼ੇਸ਼ ਜਾਗਰੂਕਤਾ ਕੈਂਪ

KVK Nawanshahar

KVK Budgam conducts awareness programme on Lumpy Skin Disease

KVK Budgam

पंजाब केसरी

लंपी स्किन रोग पर जागरूकता कार्यक्रम आयोजित

दैनिक जागरण

सोमा कृषि विज्ञान केंद्र में लंपी बीमारी की रोकथाम के उपाय बताए

KVK Samba

धौलाकुआं में लंपी पर जागरूकता शिविर

पांवटा साहिब। कृषि विज्ञान केंद्र सिरमौर द्वारा गांव धौलाकुआं में लंपी त्वचा रोग पर एक दिवसीय जागरूकता शिविर का आयोजन किया गया। इस अवसर पर कृषि विज्ञान केंद्र की पशुपालन वैज्ञानिक डाक्टर हर्षिता सूद ने उपस्थित किसानों को इस बीमारी के प्रति जागरूक करते हुए बताया कि यह वायरल रोग मवेशियों में तेजी से फैल रहा है। मच्छर, मक्खी, जूं, बीमार पशु की लार व दूषित खान-पान से पशुओं के बीच यह रोग फैलता है। इस रोग का कोई इलाज न होने के कारण गौशाला की नियमित सफाई व पशुओं की सघन निगरानी ही इस रोग की रोकथाम व नियंत्रण का सबसे प्रभावी समाधान है। पशुशाला को कीटाणु, मच्छर-मक्खी रहित व परिसर में जैव सुरक्षा उपायों के अपनाने पर जोर दिया गया। किसानों को इस बीमारी के लक्षण, बचाव व उपचार के साथ-साथ पशुओं के वैज्ञानिक रूप से प्रबंधन के बारे में मूलभूत जानकारी उपलब्ध करवाई गई। पशुओं में इस बीमारी के कोई भी लक्षण दिखने पर पास के पशु चिकित्सालय व औषधालय से संपर्क करने की सलाह दी गई। कृषि विज्ञान केंद्र सिरमौर की पशुपालन वैज्ञानिक डा. हर्षिता सूद ने बताया कि लंपी त्वचा रोग के प्रभावी नियंत्रण के लिए कृषि विज्ञान केंद्र प्रभावित क्षेत्रों में जागरूकता शिविरों का आयोजन करेगा, ताकि नुकसान को कम किया जा सके।

KVK Sirmour

Lumpy skin disease alarm in Una, 47 cattle infected in 2 days

Rajesh Sharma

UNA, AUGUST 6

Lumpy skin disease (LSD) has infected 47 head of cattle in 27 villages of Una district in the past two days. The viral infection is threatening to spread in the coming days owing to humid weather.

Deputy Director, District Animal Husbandry, Dr JS Sen said that the first LSD case was detected on August 4. "Blood samples of infected animals have been sent to the ICAR-National Institute of High Security Animal Diseases, Bhopal, for analysis and confirmation of the disease," he added.

Dr Sen said that the animals were being treated for secondary infections and symptoms such as fever. He added that the department was ready for any emerging situation. Disinfectants were being sprayed around cattle sheds, he added.

Dr Rakesh Bhatti, District Nodal officer for LSD, said that there had been no animal mortality in the district due to the infection. He added that as per the World Organisation for Animal Health, the mortality rate of the LSD was only 1.3 per cent. The disease does not spread to humans and remains confined to cows and buffaloes.

The nodal officer said, "The virus spreads from one animal to another by fleas and flies that feed on blood of the cattle. The bite causes hypersensitivity in skin, leading to the formation of lumps. Minute insects even stick to human clothing and travel to newer locations, making it difficult to contain the disease."

Bhatti said, "Block-level teams have been constituted and infected animals are being separated from the healthy ones, while the villagers are being sensitised about the disease. Our LSD bulletin is being updated every 30 minutes and we are closely monitoring the situation."

He said that cross-breed varieties of cows were more susceptible to the LSD virus. He urged farmers to immediately contact the nearest government animal health institution if their cattle showed symptoms such as fever, lumps on the skin, reduction in milk production or difficulty in swallowing.

A visit to a cattle shelter house in Kotla Kalan village near the town revealed that two stray cattle there were infected with the LSD and the management committee of the shelter had requested the department for assistance.

A cow infected with lumpy skin disease in Una. TRIBUNE PHOTO

DOESN'T SPREAD TO HUMANS

- Cattle develop symptoms like fever, lumps on the skin, reduction in milk production or difficulty in swallowing
- The virus spreads from one animal to another through fleas and flies that feed on blood of the cattle
- The disease does not spread to humans

KVK Una

06 Aug 2022 Hoshiarpur Edi...
https://epaper.punjabijagran.com

ਪੱਫੜੀ ਰੋਗ ਤੋਂ ਬਚਾਅ ਲਈ ਪਸ਼ੂ ਪਾਲਕ ਹੋਣ ਜਾਗਰੂਕ : ਡਾ. ਮਹਿੰਦਰ

ਰਾਜਾ ਸਿੰਘ ਪੱਟੀ, ਚੱਬੇਵਾਲ

ਪਸ਼ੂਆਂ ਵਿਚ ਤੇਜ਼ੀ ਨਾਲ ਫੈਲ ਰਹੇ ਪੱਫੜੀ ਰੋਗ (ਲੰਪੀ) ਨਾਮਕ ਚਮੜੀ ਰੋਗ ਤੋਂ ਬਚਾਅ ਲਈ ਪਸ਼ੂ ਪਾਲਕਾਂ ਦਾ ਜਾਗਰੂਕ ਹੋਣਾ ਬੜਾ ਜ਼ਰੂਰੀ ਹੈ, ਨਹੀਂ ਤਾਂ ਪਸ਼ੂ ਪਾਲਕਾਂ ਨੂੰ ਵੱਡੇ ਨੁਕਸਾਨ ਨੂੰ ਝੇਲਣਾ ਪੈ ਸਕਦਾ ਹੈ।

ਇਸ ਸਬੰਧੀ ਬ੍ਰਿਸੀ ਵਿਗਿਆਨਕ ਕੇਂਦਰ ਬਹੋਵਾਲ ਦੇ ਡਿਪਟੀ ਡਾਇਰੈਕਟਰ ਡਾ. ਮਹਿੰਦਰ ਸਿੰਘ ਬੈਨ ਨੇ ਇਕ ਵਿਸ਼ੇਸ਼ ਮੁਲਾਕਾਤ ਦੌਰਾਨ ਦੱਸਿਆ ਕਿ ਲੰਪੀ ਸਕਿਨ ਡਿਜ਼ੀਜ਼ ਜਾਂ ਚਮੜੀ ਦੀਆਂ ਗੰਠਾਂ ਦੀ ਬਿਮਾਰੀ ਮੱਛਰਾਂ ਤੇ ਗਾਵਾਂ ਵਿਚ ਵਿਸਤਾਰ ਕਾਰਨ ਹੋਣ ਵਾਲੀ ਘਾਤਕ ਬਿਮਾਰੀ ਹੈ ਜੋ ਅੱਜ ਕੱਲ ਕਾਫੀ ਫੈਲੀ ਹੋਈ ਹੈ ਅਤੇ ਮਨਾਸਾਰੀ ਦਾ ਰੂਪ ਧਾਰਣ ਕਰ ਰਹੀ ਹੈ। ਇਹ ਬਿਮਾਰੀ ਇਕ ਪਸ਼ੂ ਤੋਂ ਦੂਜੇ ਨੂੰ ਸੰਪਰਕ ਰਾਹੀਂ ਫੈਲਦੀ ਹੈ। ਇਸ ਬਿਮਾਰੀ ਮੌਕੇ, ਮੌਸੀਆਂ ਤੇ ਵਿੰਡਰ ਦੀ ਇਸ ਨੂੰ ਫੈਲਾਉਣ 'ਚ ਮਦਦਗਾਰ ਸਾਬਤ ਹੋਣਾ ਹੈ ਅਤੇ ਮਾਰਚ ਤੋਂ ਅਗਸਤ ਤੱਕ ਇਸ ਬਿਮਾਰੀ ਦਾ ਪ੍ਰਕੋਪ ਵਧੇਰੇ ਹੁੰਦਾ ਹੈ। ਇਹ ਬਿਮਾਰੀ ਨਾਲ ਗ੍ਰਸਤ ਪਸ਼ੂ ਨੂੰ 2-3 ਹਫ਼ਤੇ ਲਗਾਤਾਰ ਬੁਖ਼ਾਰ ਹੁੰਦਾ ਹੈ ਤੇ ਪੂਰੇ ਸਰੀਰ ਦੀ ਚਮੜੀ ਉੱਤੇ 2-5 ਸੈਂਟੀਮੀਟਰ ਦੀਆਂ ਸਖ਼ਤ ਗੰਠਾਂ ਉੱਭਰ ਆਉਂਦੀਆਂ ਹਨ। ਇਨ੍ਹਾਂ ਗੰਠਾਂ 'ਤੋਂ ਸੁੱਜੀਆਂ ਪੌਣੀਆਂ ਪੀਕ ਨਿਕਲਦੀ ਹੈ ਜਾਂ ਇਹ ਇਹ ਚਮੜੀ ਰਾਹੀਂ ਰਸ ਆਉਂਦੀ ਹੈ ਅਤੇ ਇਥੇ ਇੰਫੈਕਸ਼ਨ ਹੋ ਜਾਂਦੀ ਹੈ ਜਿਸ ਕਾਰਨ ਪਸ਼ੂ ਨੂੰ ਤਕਲੀਫ ਹੁੰਦੀ ਹੈ ਅਤੇ ਪਸ਼ੂ ਖ਼ੁਰਾਕ ਕਮਜ਼ੋਰ ਹੋ ਜਾਂਦਾ ਹੈ। ਇਸ ਬਿਮਾਰੀ ਦੇ ਲੰਫਟ ਸਨੇਹੀ ਹਰਕੀਜ਼ ਚਮੜੀ ਦੀ ਬਿਮਾਰੀ ਨਾਲ ਮਿਲਦੇ ਹਨ ਅਤੇ ਟੈਸਟਾਂ ਰਾਹੀਂ ਇਨ੍ਹਾਂ ਦਾ ਪੜਤਾਲ ਸਕਾਰਾਤਮਕ ਨਾ ਸਕਦਾ ਹੈ ਇਸ ਦੇ ਨਾਲ ਕਈ ਕਈ ਦੀਆਂ ਹੋਰ ਇਕਸਾਰੀਆਂ ਜਿਵੇਂ ਕਿ ਮੂੰਹ, ਸਾਹ ਨਲੀ ਮਿਲਦੇ ਅਤੇ ਪ੍ਰਜਣਨ ਅੰਗਾਂ ਵਿਚ ਜਖਮ, ਕਮਜ਼ੋਰੀ, ਇੰਫੈਕਸ਼ਨ (ਰੋਕਿਆ ਪੁੰਸਣੀ ਦਾ ਇੰਸ) ਦੀ ਸੰਭਿਕ, ਠੰਡਾ ਵਿਚ ਪਾਣੀ ਭਰਨਾ, ਦੁੱਧ ਵਿਚ ਕਮੀ, ਖੰਘ ਛੰਨਣਾ, ਪਸ਼ੂ ਦਾ ਘਾਬ ਹੋਣਾ ਤੇ ਕਿਸੇ ਕਿਸੇ ਪਸ਼ੂ ਦੀ ਮੌਤ ਆਦਿ ਦੀ ਹੋ ਸਕਦੀਆਂ ਹਨ। ਹਾਲਾਂਕਿ ਬਿਮਾਰ ਪਸ਼ੂ ਦੀ ਬਿਮਾਰੀ ਨਾਲ ਮਿਲਦੇ ਹਨ ਅਤੇ ਟੈਸਟਾਂ ਰਾਹੀਂ ਇਨ੍ਹਾਂ ਦਾ ਪੜਤਾਲ ਸਕਾਰਾਤਮਕ ਨਾ ਸਕਦਾ ਹੈ।

ਇਲਾਜ ਸਬੰਧੀ ਧਿਆਨ ਦੇਣ ਯੋਗ ਗੱਲਾਂ

ਇਲਾਜ ਲਈ ਮਾਹਿਰ ਡਾਕਟਰ ਦੀ ਸਲਾਹ ਲੈਣੀ ਚਾਹੀਦੀ ਹੈ ਅਤੇ ਬਿਮਾਰ ਪਸ਼ੂਆਂ ਨੂੰ ਇਲਾਜ ਲੈਣਾ ਵੀਂ ਕਰਨ ਰੱਖਣਾ ਚਾਹੀਦਾ ਹੈ। ਬਿਮਾਰ ਜਨਾਵਰਾਂ ਦੇ ਇਲਾਜ ਵਿਚ ਸੋਡ ਅਫ਼ਲਾਜ ਐਂਟੀਬਾਇਓਟਿਕ ਦਵਾਈਆਂ ਖਾਸ ਕਰਕੇ ਸਫ਼ਾਰ ਸਮੂਹ ਦੀਆਂ ਦਵਾਈਆਂ ਦੀ ਵਰਤੋਂ ਕੀਤੀ ਜਾ ਸਕਦੀ ਹੈ। ਇਸ ਦੇ ਨਾਲ ਸੁਖਾਵ ਅਟਾਊਟ ਦੀ ਦਵਾਈ ਦਿੱਤੀ ਜਾ ਸਕਦੀ ਹੈ। ਜੇਕਰ ਪਸ਼ੂ ਦੇ ਸਰੀਰ 'ਤੇ ਜਖਮ ਹੋਣ ਤਾਂ ਮਲਮ ਲਗਾਉਣੀ ਚਾਹੀਦੀ ਹੈ। ਇਸ ਤੋਂ ਇਲਾਵਾ ਜਖਮ ਨੂੰ ਕਲਣ ਲਈ ਪਸ਼ੂ ਨੂੰ ਵਿਟਾਮਿਨ ਦੀ ਪੂਰਕ ਦੇਣੀ ਚਾਹੀਦੀ ਹੈ। ਪਸ਼ੂਆਂ ਨੂੰ ਨਰਮ ਚਾਰਾ ਤੇ ਅਜਾਨੀ ਨਾਲ ਜਖਮ ਹੋਣ ਵਾਲੀ ਦੇਰ ਦੇਣੀ ਚਾਹੀਦੀ ਹੈ।

ਕੀਤਾ ਜਾਗਰੂਕ

- ਪਸ਼ੂਆਂ 'ਚ ਰੋਗ ਦਾ ਫੈਲਣਾ ਚਿੰਤਾ ਦਾ ਵਿਸ਼ਾ
- ਪਸ਼ੂ 'ਚ ਰੋਗ ਦੇ ਲੱਛਣ ਦਿਸਣ 'ਤੇ ਤੁਰੰਤ ਮਾਹਰਾਂ ਦੀ ਲਵੋ ਸਲਾਹ

2-3 ਹਫ਼ਤਿਆਂ ਵਿਚ ਠੀਕ ਹੋ ਜਾਂਦਾ ਹੈ, ਪਰ ਦੁੱਧ ਦੀ ਪੈਦਾਵਾਰ ਕਾਫੀ ਸਮੇਂ ਤਕ ਘਟੀ ਰਹਿੰਦੀ ਹੈ ਅਤੇ 1-5 ਫੀਸਦੀ ਪਸ਼ੂਆਂ ਦੀ ਮੌਤ ਵੀ ਹੋ ਜਾਂਦੀ ਹੈ।

ਪਸ਼ੂਆਂ ਨੂੰ ਬਿਮਾਰੀ ਤੋਂ ਬਚਾਉਣ ਦੇ ਤਰੀਕੇ : ਬਿਮਾਰੀ ਤੋਂ ਬਚਾਅ ਲਈ ਗੋਟ ਪੈਕਸ (ਮਾਤਾ) ਵੈਕਸੀਨ ਨਾਲ ਮੱਛਾਂ ਤੇ ਗਾਵਾਂ ਦਾ ਟੀਕਾਕਰਣ ਕਰਨਾ ਚਾਹੀਦਾ ਹੈ। ਬਿਮਾਰ ਪਸ਼ੂਆਂ ਨੂੰ ਤੰਦਰੁਸਤ ਪਸ਼ੂਆਂ ਤੋਂ ਅਲੱਗ ਕਰ ਦਿਉ ਤੇ ਬਾਕੀ ਪਸ਼ੂਆਂ ਨੂੰ ਫੀਨਾਏ ਸਪਰੇਅ ਵਿਚ ਨਾ ਆਉਣ ਦਿਉ। ਮੇਲੇ, ਮੰਡੀਆਂ ਜਾਂ ਪਸ਼ੂ ਮੁਕਾਬਲਿਆਂ ਵਿਚ ਪਸ਼ੂਆਂ ਨੂੰ ਲਿਜਾਣ ਤੋਂ ਪਰਹੇਜ਼ ਕਰੋ ਅਤੇ ਬਿਮਾਰੀ ਦੇ ਲੱਛਣ ਦਰਸਾਉਣ ਵਾਲੇ ਪਸ਼ੂਆਂ ਨੂੰ ਨਾ ਖਰੀਦੋ। ਪਸ਼ੂ ਪਾਲਕ ਜਾਂ ਜਾਨੇ ਇਕ ਹੀ ਫਾਰਮ 'ਤੇ ਕੰਮ ਕਰਨ ਤੇ ਦੱਖਣੀ ਫਾਰਮਾਂ 'ਤੇ ਨਾ ਜਾਣ ਅਤੇ ਖਾਸ ਤੌਰ 'ਤੇ ਆਪਣੇ ਸਰੀਰ ਦੀ ਸਫਾਈ ਵੱਲ ਧਿਆਨ ਦੇਣ। ਜਿਹੜੇ ਸਾਨੂ ਇਸ ਬਿਮਾਰੀ ਤੋਂ ਉੱਕਰ ਗਏ ਹੋਣ, ਉਨ੍ਹਾਂ ਦੇ ਖੂਨ ਤੇ ਦੀਕਸ਼ ਦੀ ਲੈਬੋਰੇਟਰੀ ਵਿਚ ਕਰੀਜ਼ੀ ਜਾਂਚ ਜਰਨੀ ਚਾਹੀਦੀ ਹੈ। ਜੇ ਜਾਂਚ ਦੇ ਨਤੀਜੇ ਠੀਕ ਹੋਣ ਤਾਂ ਪੁਸ਼ ਤੋਂ ਬਾਅਦ ਹੀ ਇਨ੍ਹਾਂ ਦੇ ਦੀਕਸ਼ ਦੇ ਠੀਕ ਹਫ਼ਤਾਉਣੇ ਚਾਹੀਦੇ ਹਨ।

KVK Hoshiarpur

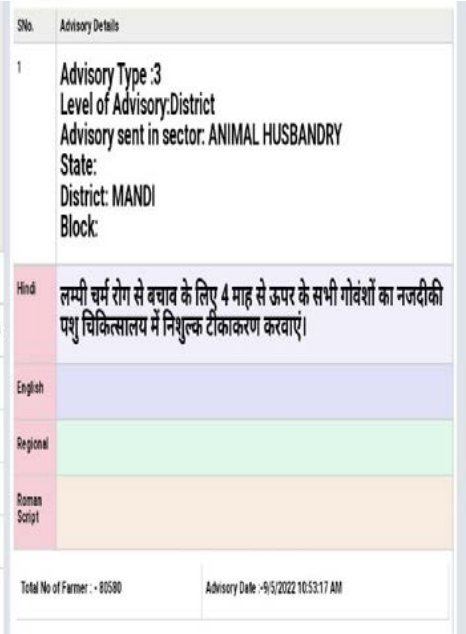
SKUAST KASHMIR
KRISHI VIGYAN KENDRA, KULGAM
P.O. Gopal Pora, Kulgam (J&K) – 192 233.
Ph/FAX: 01931 213492 ; Mob: 7006853560
Email: kvkkulgam@gmail.com

KVK Kulgam Conducts Awareness Campaign on Lumpy Skin Disease (LSD)

Under the directions and guidance of the worthy Director Extension, SKUAST Kashmir, Prof Dil Mohammed Makhdoomi, KVK Kulgam conducted awareness campaign on the Lumpy Skin Disease (LSD) of animals from 24-08-2022 to 02-09-2022. For wide publicity of information regarding the disease, the relevant literature was distributed among 630 people/farmers in district Kulgam. In the campaign one degree college, two higher secondary schools, three schools, three Mosques and 12 villages were included. Awareness programmes were organized in villages; Modergam, Mirhama, Chawalgam, Chatabal, Kilam, Dadargund, Bapora, AgrooDewsar, Pombay & Adijin, where Sr. Scientist & Head KVK Kulgam, Dr. Manzoor Ahmad Ganai and Subject Matter Specialist Animal Sciences- KVK Kulgam, Dr. Shahid Ahmad deliberated and stressed upon timely scientific measures for control of the disease and advised people/farmers to follow the quarantine measures as suggested during the awareness programme. Dr. Shahid Ahmad identified cows with Lumpy Skin Disease Symptoms at Bapora and Zehipora Agroo Kulgam. Dr Abdul Shakoor and Dr. Haseeb ur Rehman were a part of campaign and advised the farmers to follow instructions as advised by scientists of Kendra and/or Animal Husbandry Department of the District during the awareness programmes.

KVK Kulgam

KVK Kulgam



KVK Mandi

KVK Sirmour

KVK Mandi

निवारण

मवेशियों में लंपी स्किन डिजीज

रोहित गुप्ता*, अर्पण उपाध्याय** और **प्रज्ञा भदोरिया*****

पशुपालन विशेषांक

"20वीं पशुगणना के अनुसार देश में गोधन की आबादी 18.25 करोड़ है, जबकि भैसों की आबादी 10.98 करोड़ है। इस प्रकार दुनिया में भैंसों की संख्या भारत में सर्वाधिक है। यह भी सच है कि देश की एक बड़ी आबादी पशुपालन से जुड़ी हुई है। पशुपालन का देश की अर्थव्यवस्था में भी बहुत बड़ा योगदान है। यदि कोई भी रोग महामारी का रूप लेकर पशुओं को ग्रसित करता है, तो इसका सीधा असर उनके उत्पादन पर पड़ता है। इससे पशुपालकों को काफी नुकसान उठाना पड़ सकता है।"

इलाज के संबंध में ध्यान रखने योग्य बातें

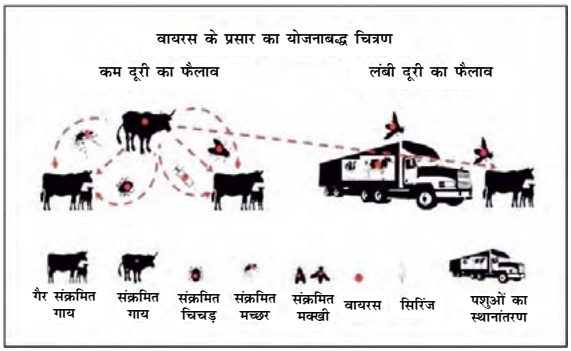
यह रोग विषाणु से फैलता है, जिसके कारण इस रोग का कोई विशिष्ट इलाज नहीं है। संक्रमण की स्थिति में अन्य रोग से बचाव के लिए पशुओं का इलाज करना चाहिए:

- रोगी पशुओं को इलाज के दौरान अलग ही रखना चाहिए
- रोगी पशुओं के बचाव के लिए जरुरत अनुसार एंटीबायोटिक दवाइओं का उपयोग किया जा सकता है
- दवाइयों का उपयोग डाक्टर की सलाह अनुसार ही करना चाहिए
- यदि पशुओं को बुखार है, तो बुखार घटाने की दवाई दी जा सकती है
- यदि पशुओं के ऊपर जख्म हो, तो उसके अनुसार दवाई लगानी चाहिए
- पशुओं की खुराक में नरम चारा एवं आसानी से पचने वाले दाने का उपयोग करना चाहिए

लंपी स्किन डिजीज (एलएसडी) या ढेलेदार त्वचा रोग वायरल रोग है, जो गाय-भैसों को संक्रमित करती है। इस रोग में शरीर पर गांठें बनने लगती हैं, खासकर सिर, गर्दन और जननांगों के आसपास। धीरे-धीरे ये गांठें बड़ी होने लगती हैं एवं घाव बन जाते हैं। पशुओं को तेज बुखार आ जाता है और दुधारू पशु दूध देना कम कर देते हैं। मादा पशुओं में गर्भपात भी देखने को मिलता है एवं कई बार तो पशुओं की मौत भी हो जाती है। एलएसडी वायरस मच्छरों और मक्खियों जैसे कीटों से आसानी से फैलता है। इसके साथ ही यह दूषित पानी, लार एवं चारे के माध्यम से भी पशुओं को संक्रमित करता है। गर्म एवं नमी वाला मौसम इस रोग को और ज्यादा तीव्रता से फैलने में सहयोग करता है। ठंडा मौसम आने पर इस रोग की तीव्रता में कमी भी आ जाती है।

*सहायक प्राध्यापक, कृषि विज्ञान केंद्र, जालंधर (पंजाब); **विषय वस्तु विशेषज्ञ, कृषि विज्ञान केंद्र, झांसी (उत्तर प्रदेश); ***वैज्ञानिक, भाकृअनुप-कृषि प्रोद्योगिकी अनुप्रयोग अनुसंधान संस्थान जोन-1, लुधियाना (पंजाब)

यह रोग सर्वप्रथम जामिबिया में वर्ष 1929 में पाया गया। इसका संक्रमण अफ्रीका, यूरोप, मध्य एशिया एवं रूस में होने के बाद भारत के पशुओं तक पंहुचा है। भारत में सबसे पहले यह रोग वर्ष 2019 में पश्चिम बंगाल में देखा गया था। पिछले दो वर्षों में यह रोग तमिलनाडु, कर्नाटक, ओडिशा, केरल, असोम, छत्तीसगढ़ और मध्य प्रदेश जैसे राज्यों के पशुओं में देखा गया है। इसके कारण काफी भारी संख्या में मवेशी इसकी चपेट में आ गए हैं। अब इस रोग को विश्व पशु स्वास्थ्य संगठन द्वारा तेजी से फैलने वाले रोग की सूची में रखा गया है। इसके अनुसार अगर किसी भी देश को इस रोग के बारे में पता चलता है, तो उसे विश्व पशु स्वास्थ्य संगठन को जल्द से जल्द सूचित करना चाहिए।



5. Online Consultancies

Consultancies regarding treatment, prevention and control measures of Lumpy skin disease were carried out by almost all the KVKs to the livestock owner. Telephonically the queries of the dairy farmers are being addressed individually. While farmers were also covered in group for cross learning of the disease through WhatsApp groups. Mobile Advisories regarding prevention and control measures were also delivered through M-Kisan Portal and Agromet Advisory Bulletin as well. KVK Mandi issued LSD advisory to about 80,580 farmers of district on M-Kisan Portal.

KVK Mandi

KVK Mansa

KVK Hoshiarpur

KVK Ropar

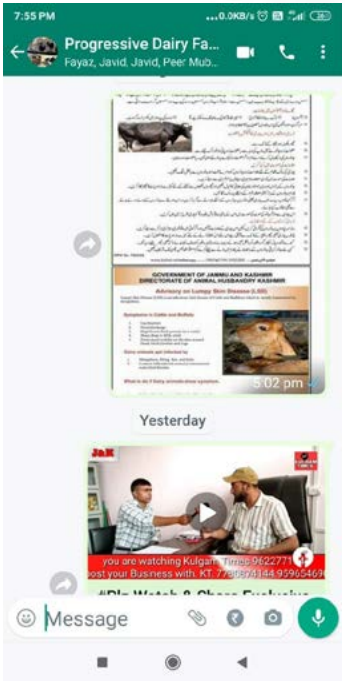
KVK Ropar

KVK Moga

KVK Hoshiarpur

KVK Pathankot

KVK Tarn Taran



KVK Kulgam

KVK Barnala

6. Diagnostic Field Visits

Field visits were conducted to diagnose the suspected case of Lumpy skin disease and for best possible treatment for the infected animals by the Animal Scientist of the KVKs. During the diagnostic visits, the veterinary pharmacists posted in Veterinary dispensaries were also advised for proper line of treatment in the affected cases. The livestock owners were given ecto and endo-parasiticidal drugs so as to take precautionary measures by reducing vectors. The rural masses were also addressed about the specific symptoms of the disease along with differential diagnoses from other diseases.

KVK Barnala

KVK Jalandhar

KVK Muktsar

KVK Pathankot

KVK Sangrur

KVK Tarn Taran

KVK Ropar

KVK Mohali

KVK Bathinda

KVK Hoshiarpur

KVK Rajouri

KVK US Nagar

KVK Bandipora

KVK Sirmour

Epilogue

Livestock sector plays a vital role in Indian economy and have a multi-faceted role in providing livelihood and nutritional support to more than 60% of the rural population of the country. However, this live asset is facing a number of challenges; including recent outbreak of Lumpy skin disease (LSD) that demands serious attention to refocus our lens to view livestock health and productivity holistically. Lumpy skin disease (LSD) is not a normal viral outbreak. The recent spread of the disease starting from the month of June 2022 into the disease-free areas indicates its epidemiological and economic significance. According to the cattle owners, the disease induces weight loss, reduced milk production, draft power loss, mortality, market instability, infertility, abortion, culling, and hide quality losses. The morbidity rate is usually upto 50% and mortality rate is usually around 1-5% and an overall financial loss of Rs.35,000 to 80,000 (approx.) per dead animal recorded during the current outbreak is a big loss for a farmer whose livelihood depends on livestock production.

A coordinated effort is needed in all direction for effective control of the disease. The virus is transmitting through flies and mosquitoes that's why the departments of rural and urban development along with animal husbandry should work together to ensure proper sanitation in the affected regions. With the increase in vector population during the hot-humid season on an urgency basis, concerted vaccine-cum-awareness drive on the lines of the fight against Covid-19 should also be adopted. Secondly, stepping up of immediate supply of goat pox vaccines to the susceptible regions across the country. For the time being, only goat pox vaccine has been approved by the authority for administering in to the cattle against LSD. The possibility of sheep pox vaccines can also be explored in near future. Simultaneously, in this concern the government must expedite the large-scale commercialization and production of the Indian Council of Agricultural Research's (ICAR) recently-developed live attenuated homologous vaccine that is said to provide full protection against LSD.

Till that time, LSD outbreaks control strategies includes mass awareness of LSD restriction of animal movement, isolation of infected animals, monitoring of stray animals, cleaning and disinfection of the premises and insect control and finally safe disposal of carcasses should be fully executed. Preventive vaccination in mission mode should also be undertaken in high risk areas like border area of affected districts and states and affected animals should be identified documented.

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भाकृअनुप
ICAR

ICAR-Agricultural Technology Application Research Institute (ATARI)
Zone-1, Ludhiana-141004, Punjab