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# Explained: Why the Lumpy Skin Disease continues to spread among cattle

Lumpy Skin Disease: Since the first case was reported on April 23 in Kutch, the disease has spread to 26 of Gujarat's 33 districts and has claimed more than 4,000 cattle heads. Why is the infection spreading and what is being done to tackle it?

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**NewsGuard**


Cattle infected by Lumpy Skin Disease are taken care of by volunteers at a temporary isolation shelter at Gandhidham in Gujarat. (Express Photo: Nirmal Harindran)

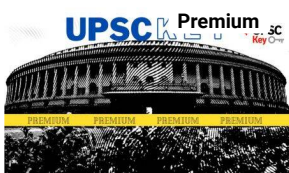
Since the first LSD case was reported on April 23 this year in Kutch, the disease has spread to 26 of Gujarat's 33 districts and has claimed more than 4,000 cattle heads. In Rajasthan, around 27,000 cattle heads have reportedly succumbed to the virus. Since 2019, outbreaks of the disease have been reported in 20 states of India.

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## The LSD virus

LSD is caused by the lumpy skin disease virus (LSDV), which is a virus of the *capripoxvirus* genus in the *poxyviridae* family. Sheeppox virus and goatpox virus are the other members of the genus *capripoxvirus*. The LSDV mainly affects cattle — cow and its progeny, and the Asian water buffaloes. According to a 2021 report of the Food and Agriculture Organisation (FAO) of the United Nations, LSD outbreaks occur in epidemics several years apart. As per the report, the existence of a specific reservoir for the virus is not known, nor is it known as to how and where the virus survives between epidemics.

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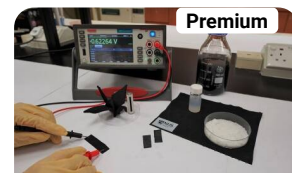
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## Prevalence

According to the FAO report, LSD was long restricted to sub-Saharan Africa. However, over the past decade, it spread to the Middle East and Turkey. From 2015 onward, it has impacted the Balkan (southeast Europe) countries, Caucasus (eastern

Andhra Pradesh, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Jharkhand, Karnataka, Kerala, Maharashtra, Madhya Pradesh, Manipur, Odisha, Tamil Nadu, Telangana, Uttar Pradesh and West Bengal.

## Outbreaks in Gujarat

There were **small outbreaks** in Kheda, Anand in 2020 and 2021, but the state government managed to control them. The state animal husbandry department treated infected cattle and gave goat pox vaccine to healthy animals in peripheral areas and no casualty were reported back then. However, in 2022, since the first case was reported from Kaiyari, a village on the Indo-Pak border in Lakhpat taluka of Kutch on April 23, the LSD has virtually swept the entire state, infecting cattle of all breeds with buffaloes remaining safe largely. **As of August 23, the number of officially reported cases stood at 1.11 lakh and 4281 deaths. Thus, the fatality rate is around 4 percent.**

However, government officers concede actual figures of infections and deaths could be higher as not every dairy farmer or cattle-herder is reporting infections among his herd and in some cases, prefer to contact private veterinarians for treating their cattle instead of seeking government help via helpline No. 1962. Gujarat government officers claim the infectious disease entered the state from Rajasthan where the number of cases reportedly stands at 11 lakh and casualty 27,000.

## How it spreads

The LSDV spreads through blood-sucking vectors like ticks and mites like houseflies, mosquitoes, etc. It also spreads through contaminated water, fodder and feed. Mosquito and housefly infestations remain at their peak during the monsoon, and veterinary scientists and government officers blame a very wet July for the rapid spread of the infection in Gujarat this year.

Scientists have been advising isolation of infected animals from the healthy ones in an attempt to contain the spread of the virus. However, **there is a problem of feral cattle in Gujarat — the state where cow slaughter is prohibited — and scientists say these free-ranging cattle could also be a reason for rapid spread of LSD.**

**in two months, says animal husbandry minister**

## Symptoms

LSDV attacks the circulatory system of an animal and causes vasculitis or inflammation of blood vessels and lesions in various organs like liver, lungs, spleen, lymph nodes etc, says Prof RM Patel, head of the department of medicine in College of Veterinary Science and Animal Husbandry (CVSAS), Dantiwada, an affiliate college of state government-run Kamdhenu University (KU).

In turn, it causes epidermis, making the outer surface of the skin to get separated from dermis – the inner layer of the skin. This, in turn, leads to formation of lumps or nodules on an animal's body. Fever, increased mucus secretion, loss of appetite etc are among other symptoms.

## How does it lead to death

Prof Patel's team has conducted post-mortem on eight carcasses in Kutch and Banaskantha and found that the virus had caused necrotic vasculitis or death of living tissues in local areas and fibrosis in various organs of infected cattle. Such a situation leads to failure of various organs, and eventually death.

Also, the nodules may burst due to outer pressure or friction as skin covering such nodules is very thin. Such open wounds make animals susceptible to secondary – bacterial and protozoal – infections and development of maggots and can prove fatal. Animals may also develop bronchopneumonia, impairing their respiratory system. Prof Patel says the animal falls in a vicious cycle as it loses stamina due to loss of appetite and due to edema (swelling caused by accumulation of excess fluid in body tissues) in brisket and in turn, the disease becomes worse.

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## Risk to indigenous breeds



including 1.49 crore cattle (1.14 crore of indigeneous breeds and 35.19 lakh exotic) and 1.10 crore buffaloes. So, the majority are of indigenous breeds like Kankrej, Gir, Sahiwal, etc. but the state also has a sizable population of exotic/crossbred Jersey and HF cows. Kankrej, the coveted indigenous cattle breed of Gujarat known for being resistant to diseases and parasites, has been the worst hit by LSD.

However, Prof DV Joshi, dean of CVSAH, Dantiwda says that it could be due to the larger population size of this breed in the state. LSD infection has spread among Gir, another important cattle breed in Junagadh, Amreli, Jamnagar among other places. Prof Joshi says the higher mortality rates among these breeds could be due to genetic or hereditary susceptibility.

### Government response

The state government has been ring-vaccinating healthy cattle heads in the five-km radius of an outbreak by administering them goat pox vaccine. Officers say LSD being a viral disease, there is no specific cure once an animal contracts the virus and therefore vaccination is the most effective tool. As of August 23, the government had vaccinated 47.53 lakh cattle heads and around 87,000 cattle heads have already recovered from LSD. Animal husbandry department has been providing free treatment to infected cattle and has been appealing to dairy farmers and cattle-herders to contact it via its helpline number 1962.

Veterinarians are also administering drugs to alleviate symptoms of LSD in cattle. The government has facilitated setting up isolation centres for feral cattle in urban areas while prohibiting cattle fairs and exhibitions and transportation of cattle in the affected areas. On August 3, the government also set up a seven-member task force headed by Kamdhenu University (KU) vice-chancellor Prof Naresh Kelawala.



## Why the infection continues to spread

Prof Kelawala says the taskforce has been focusing on why there were no casualties in the previous outbreaks in the state and why the mortality rate is high in the current wave.

“We have visited Kutch, Jamnagar, Devbhumi Dwarka and other places, collected samples of infected animals and sent them to Gujarat Biotechnology Research Centre (GBRC) for genome sequencing of the virus to ascertain if there is a new mutant of LSDV at play,” Prof Kelawala said. He added that another reason could be the interplay between LSDV’s incubation period of around eight to 10 days when animals do not display any symptoms and around three-weeks’ time that the vaccine takes to give protection to a cattle. According to him, it takes around 21 days post the administration of vaccine dose to achieve immunity.

## Economic impact

In cases of aggravated symptoms, cows stop producing milk and pregnant cows suffer miscarriages. Valamji Humbal, vice-chairman of Gujarat Cooperative Milk Marketing Federation (GCMMF), that markets dairy products under brand name Amul, concedes their cow milk collection has gone down. He says that in August, it had reduced by around five percent in Kutch, the worst affected district. Amul also raised prices of milk on August 17, but Humbal denies that LSD is the reason. Besides, Kankrej bullocks are a prized breed among farmers and loss of any bullock in the mid of Kharif season can affect agricultural yields indirectly.