

LEPTOSPIROSIS: A HIDDEN THREAT TO LIVESTOCK AND HUMAN HEALTH

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ABSTRACT

Leptospirosis is an important bacterial disease that affects livestock and humans, particularly during the rainy season when waterlogging, flooding, and poor sanitation favor the survival and spread of the bacteria. The disease can cause fever, abortions, infertility, reduced milk production, and significant economic losses in livestock, while also posing a serious public health risk. Early recognition, timely veterinary care, vaccination, rodent control, and proper farm hygiene are essential for preventing disease outbreaks. Delayed diagnosis may result in abortions, infertility, reduced milk production, and even death in severe cases (Rehan et al., 2023; Sadler et al., 2026). This article highlights the causes, transmission, clinical signs, economic and zoonotic importance, and practical prevention and control measures of leptospirosis to help farmers protect their animals, improving farm productivity, and safeguarding human health.

KEYWORDS: Leptospirosis, Livestock, Monsoon, Vaccination, Zoonosis

INTRODUCTION

Leptospirosis is caused by Gram negative, spiral-shaped bacteria belonging to the genus *Leptospira*. It is a zoonotic disease, meaning it can spread from animals to humans. The bacteria survive well in warm, moist environments such as stagnant water, muddy soil, ponds, and waterlogged fields, making the rainy season the most favourable period for disease transmission (Rehan et al., 2023). Many infected animals show only mild signs or no signs at all, yet they continue to shed the bacteria through their urine. These carrier animals silently contaminate the farm environment and become a continuous source of infection for other animals and people.

WHY IS LEPTOSPIROSIS MORE COMMON DURING THE MONSOON?

Heavy rainfall washes urine from infected animals and rodents into ponds,

canals, grazing lands, and drinking water sources. The bacteria remain alive in wet soil and stagnant water for several weeks.

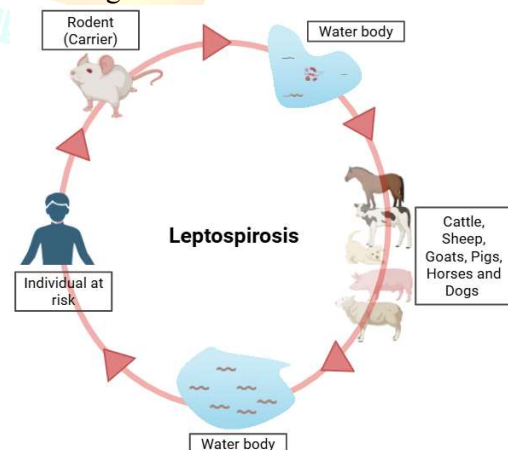


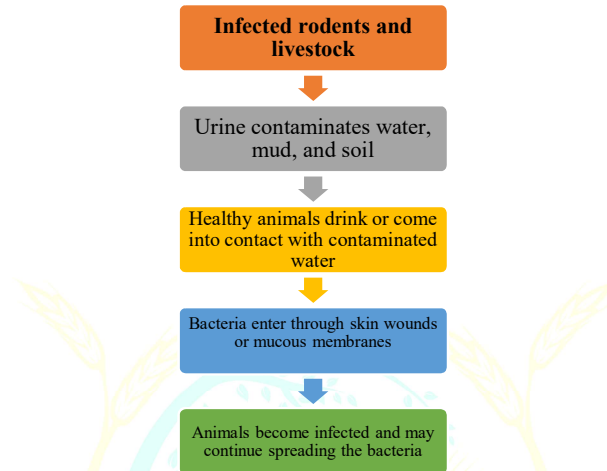
Fig. 1: Transmission of Leptospirosis (Created in Biorender app)

Livestock become infected when they drink contaminated water or when the bacteria

enter the body through small cuts in the skin or through the eyes, nose, or mouth. (Fig. 1). Flooding, poor drainage, overcrowded sheds, and rodent infestation further increase the risk of disease spread. Scientific studies have

shown that heavy rainfall, flooding, and increased soil moisture are strongly associated with higher leptospirosis cases in livestock (Sadler et al., 2026).

HOW DOES LEPTOSPIROSIS SPREAD?



WHICH ANIMALS ARE AFFECTED?

Almost all domestic animals are susceptible to leptospirosis, but cattle and buffaloes are most commonly affected under

Indian farming conditions. Common Signs of Leptospirosis in Different Animals are mentioned in the table given below (Table 1).

Table 1. Common Signs of Leptospirosis in Different Animals

Animal	Important signs
Cattle & Buffaloes	Fever, sudden drop in milk yield, abortion, repeat breeding, infertility, mastitis, birth of weak calves
Sheep & Goats	Fever, weakness, abortion, stillbirths, poor growth of young ones
Pigs	Abortions, infertility, weak piglets
Dogs	Fever, vomiting, jaundice, kidney and liver problems

One of the most important features of leptospirosis is that infected animals may continue shedding bacteria even after they appear healthy, allowing the disease to spread unnoticed within the herd (Lea et al., 2025).

have shown that bovine leptospirosis is an important cause of reproductive disorders in tropical regions, emphasizing the need for timely prevention and control (Senthilkumar et al., 2021).

ECONOMIC LOSSES TO FARMERS

Leptospirosis causes significant economic losses by reducing animal productivity. In dairy animals, the disease may lead to a sudden fall in milk production, abortions, infertility, repeat breeding, mastitis, and birth of weak calves. These reproductive losses not only reduce farm income but also increase veterinary treatment costs and prolong the interval between calvings. Studies

CAN HUMANS BECOME INFECTED?

Yes. Farmers, dairy workers, veterinarians, slaughterhouse workers, and people handling infected animals are at higher risk. The bacteria enter the body through cuts or abrasions on the skin or through the eyes, nose, and mouth. In humans, the disease usually begins with fever, headache, muscle pain, and weakness. If left untreated, it can

affect the liver, kidneys, lungs, and other vital organs (Rehan et al., 2023).

PREVENTION AND CONTROL

Leptospirosis can be effectively prevented by adopting good farm management and biosecurity practices, especially before and during the rainy season. As *Leptospira* bacteria survive in contaminated water, mud, and moist soil, maintaining a clean and dry farm environment is essential. Farmers should ensure proper drainage to prevent waterlogging, regularly clean and disinfect animal sheds, protect feed and fodder from contamination, and provide animals with clean drinking water. Preventive measures are mentioned in the figure given below (Fig. 2). Vaccination is one of the most effective measures to control leptospirosis in endemic areas. Farmers should consult their veterinarian regarding the recommended vaccination schedule and vaccinate animals before the onset of the monsoon to reduce disease occurrence, reproductive losses, and bacterial shedding (Senthilkumar et al., 2021). However, vaccination should always be combined with good hygiene and biosecurity practices for maximum protection. Rodent control is equally important because rats and mice are major carriers of *Leptospira*. Storing feed in closed containers, removing waste regularly, sealing rodent burrows, and using traps or rodenticides safely can help reduce rodent populations and minimize disease transmission. Since leptospirosis is a zoonotic disease, farmers and livestock handlers should also follow personal hygiene practices. Wearing gloves while handling sick animals or aborted materials, using boots in muddy

areas, washing hands thoroughly after animal contact, and covering cuts or wounds can help prevent infection. Early veterinary consultation for sick animals and prompt medical attention for exposed individuals with fever are essential for protecting both livestock and human health.

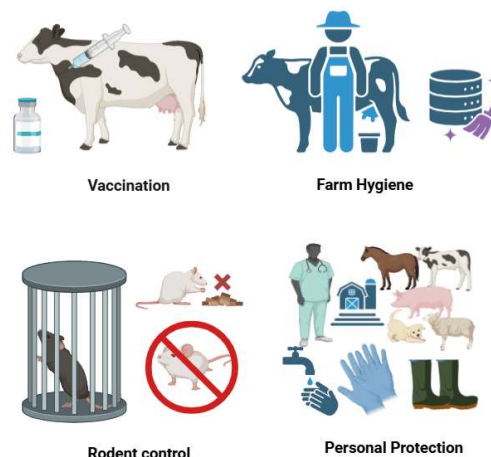


Fig. 2: Prevention of Leptospirosis (Created in Biorender app)

CONCLUSION

Leptospirosis is a hidden but preventable disease that becomes more common during the rainy season. The combination of heavy rainfall, stagnant water, poor drainage, and rodent infestation creates ideal conditions for the bacteria to spread among animals and humans. Early recognition of the disease, timely vaccination, proper farm sanitation, rodent control, and prompt veterinary care can prevent significant economic losses. By adopting these simple preventive measures, farmers can protect the health of their livestock, improve farm productivity, and ensure the well-being of their families.

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