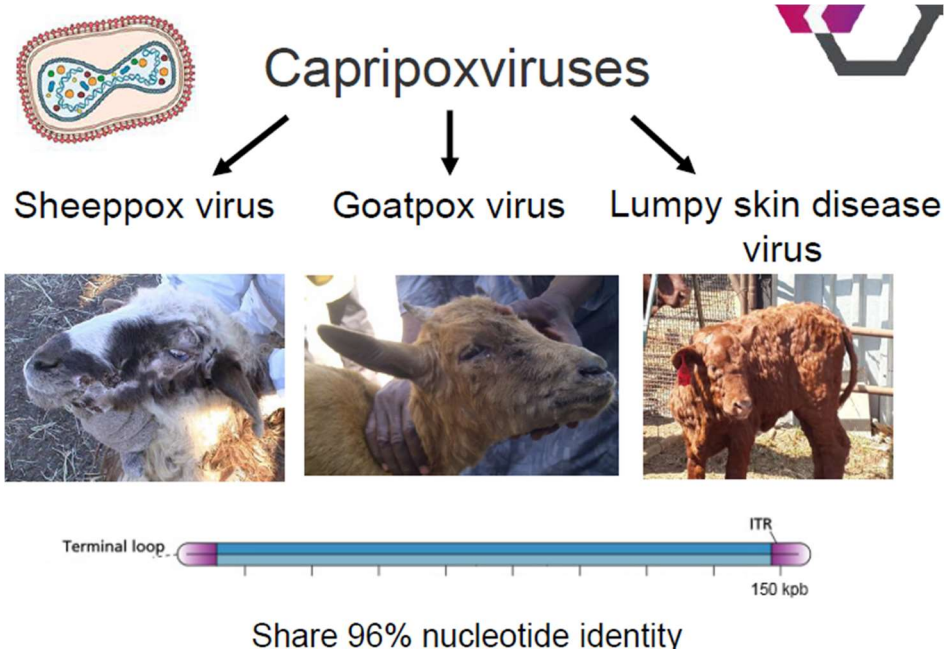
Emerging lumpy skin disease in Sri Lanka

Lumpy skin disease has recently affected domestic cattle in most parts of the country, including the north and east parts and there are no previous records of this disease in Sri Lanka. It affects the skin of cows which inflamed from small to large nodules. It is a disease that can significantly affect the economy of cattle breeders. It spreads rapidly but causes a very low death rate. [High morbidity and low mortality]

The disease was first reported in the South African country of Zambia in 1929 and has frequently affected other African, Middle Eastern countries such as Egypt and Israel. The disease has been classified as an Endemic disease in parts of Africa and the Middle East. In those countries vaccination is a common practice for this disease control. Recently the disease was reported in Bangladesh, China, Nepal, Vietnam and indiain2019.

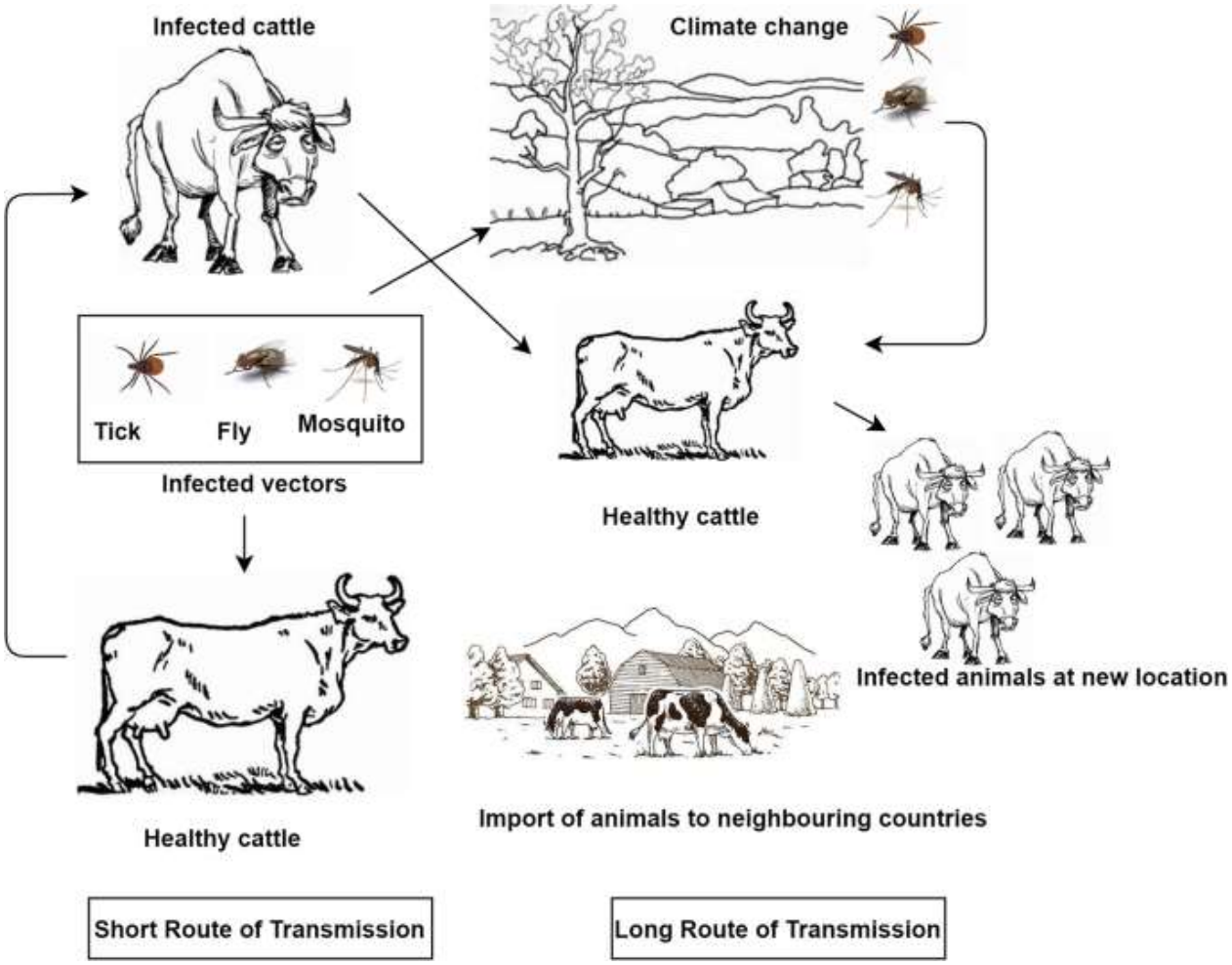
Lumpy skin disease was reported in Odisha state, India in 2019 August and India is adjacent to SriLanka. The disease was confirmed by the National Institute of High Security Animal Disease in Bhopal, Madhyapradesh. The disease then spread rapidly to other Indian states including Tamil Nadu and was observed in some parts of the north of Sri Lanka in July and August 2020. In sriLanka, lumpy skin disease has start spreading to rest of the country very fast after the recent heavy rains.



I have received an average of 15 - 20 complaints daily regarding this disease in the Cheddikulam veterinary area of Vavuniya district where I work during the peak period of this disease. A similar situation was observed in most other veterinary ranges. The Animal Health Division of Sri Lanka has commenced several investigations in this regard with collaboration of Veterinary research institute [VRI}. The Vavuniya District Veterinary investigation officer [VIO] has collected and sent samples of this disease from my division as well. These samples have been sent abroad [England] due to the lack of improved veterinary laboratories in Sri Lanka. Now they have confirmed the disease is lumpy skin disease. The purpose of this article is to make people aware of the scientific nature and treatment of this condition.

The disease is caused by a double-stranded DNA virus called lumpy skin disease virus (LSDV), which belongs to the Poxviridae family andgenus Capripoxvirus. It attacks a large number of cows and a small number of buffaloes. The virus does not infect sheep and goats, although viruses such as goat pox and sheep pox are found in the same family. The disease affects cows of all ages, especially the young and milking animals and high breeds (European and European cross breeds).

Although the mortality rate is usually very low, calves die due to poor care and management. It causes decreased milking, decreased feed intake, stunted growth in calves, permanent damaged spots on the skin, miscarriage in cows and infertility in males which lead to high economic losses. People don’t like to consume milk and meat due to the appearance of the disease.



The disease is mainly transmitted by mosquitoes, ticks and flies which bite cows and rarely by direct contact with infected cows, semen of infected bull, calf through the mother's uterus and milk. The virus can live for up to 35 -40 days in infected cows.

Lacrimation is the first sign which observed by farmers and it lead to corneal opacity if proper treatment was not given. Other signs are mucus from nose, salivation, fever, no appetite, lymphadenopathy and small nodules on all parts of the head, neck, nose, mouth, chest, brisket, legs, lap, udder, genitals and abdomen and limping due to physical disability and swelling in the legs.

Figure 4 Severe keratitis and necrotic skin lesions on the eyelids (Courtesy of Dr Massimo Scacchia, Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise "G.Caporale" Via Campo Boario, 64100 Teramo, Italia)

The nodules are small and heal quickly in immune-competence animals. But it rupture and ooze pus in some animals and look like gunshot wounds which lead to reduced value of skin. In some cows the lungs become infected which leads to severe pneumonia .Miscarriages can occur in pregnant cows. Once infected, the disease does not recur in same cows.

The disease can be easily detected with the naked eye and virus can be identified through electron microscope and PCR testing can most accurately confirm the disease.

African countries vaccinate against this disease and Sri Lanka still undergoing researches due to first time outbreak. I hope the animal health authorities will introduce vaccination in near future. So treatment is necessary to reduce the symptoms and reduce the secondary bacterial infection.

Medical Management

Lacrimation can be overcome with eye drops, appropriate antibiotics to reduce secondary bacterial infections which should be under Veterinarian's Supervision. The traditional medical drugs also practice for reduce the complications in India. It is better Provide vitamins and minerals to nutrient deficient cows to boost the immunity.

There is no risk of consume milk and meat which boiled at 100 Celsius. Meat and milk is not recommended if they are under antibiotic treatment and should wait for the withdrawal period since it will lead to antibiotic resistance in human health.

Human transmission is not reported in this disease and not reported in animals other than cow and buffalo.

Prevention

Farms should be kept clean by destroying mosquito breeding grounds. Isolation of infected cows and control of unwanted relocation and transport of cows should also be avoided.

Newly purchased cows should be isolated for a few weeks [Quarantine] and added to the existing cows. Veterinarians and other animal vaccinators must use new needles every time. Dead cows should be properly cremated or buried deeply with lime.

Figure 14 Subacute lumpy skin disease: Numerous ulcerative lesions on the teats

The virus is the causative agent of the disease, which spreads to the skin, just like the Covid 19 disease that threatens humans. Viruses that can change their function (variants) in different ways from time to time may affect in different ways in the future. Farm hygiene and personal hygiene are important to prevent any diseases.

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