

## Surra in Camels: A Hidden Challenge in India's Livestock Sector

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### Introduction

Trypanosomiasis, also known as surra or nagana is a parasitic disease caused by the genus *Trypanosoma*. It is a significant threat to livestock in various parts of the world, particularly in regions where the disease is endemic. Despite being less known compared to some other livestock diseases, its impact on agricultural economies, animal health, and rural livelihoods is profound. India is home to one of the world's largest camel



populations, with these majestic animals being an integral part of the country's rural landscape. Camels are prized for their capacity to survive in dry environments, making them vital resources for desert populations. However, despite their fortitude, camels in India confront many difficulties, and Surra is among the most alarming health problems they deal with. Surra is a serious danger to the camel population and has wide-ranging effects on the livestock industry and the livelihoods of camel herders.

### Cause

*Trypanosoma evansi*, a protozoan parasite spread by the bite of infected blood-sucking insects like tsetse flies, tabanid flies, and other biting insects, is the primary cause of surra in India. Infected needles or medical equipment can mechanically distribute this unicellular parasite as well. The bite of infected insects, such as tsetse flies and tabanids, which are frequently found in India's desert regions, transmits these



microscopic organisms to camels. Due to introduction of Indira Gandhi Canal in the semi-arid region of Rajasthan geoclimatic conditions have changed and incidence of trypanosomiasis or "Surra" disease has increased manifold in the areas around this canal. Trypanosomiasis can attack camel at any stage of its life. Once infected, camels can become carriers of the disease, passing it on to other members of the herd and perpetuating the cycle of infection.

## Transmission

*Trypanosoma evansi* is mostly transmitted in camels in India by mechanical vectors such as blood-feeding insects and infected needles or surgical tools. The incidence and severity of the disease vary in different geographical regions and are maximum during the period when fly breeding is maximum, particularly in the months of October and November. It should be noted that mechanical transmission of *Trypanosoma evansi* is a serious concern in camel populations, particularly in locations where camels are an important part of the local economy and culture.

## Symptoms and Impact

Camels are impacted by surra in a variety of ways, with clinical signs that can be moderate to severe. Common signs of Surra in camels include weakness, lethargy, weight loss, fever, anemia, swelling of the limbs and neurological symptoms. This disease generally persists for three or more years so, also called 'Tibersa'. In severe cases, it can lead to death.

The economic impact of Surra on camel herders in India is substantial. Because camels are used for transportation and agricultural activities in many desert places, a drop in output due to Surra can cause financial difficulty for herders. The financial strain on these communities is made much worse by the price of treating diseased animals, which frequently need veterinarian assistance and pharmaceuticals. Furthermore, as camel milk is a significant source of sustenance and money for many, the decreased supply of camel milk and its byproducts has a severe influence on local economies.

## Challenges in Disease Management

Surra is a complex disease to manage in camel populations. Several challenges contribute to its prevalence and persistence:

1. **Lack of Awareness:** The lack of knowledge about Surra and its transmission processes among many camel herders in India makes it difficult to take preventative measures.
2. **Limited Veterinary Services:** Access to veterinary treatment is sometimes scarce in isolated desert regions, making it challenging to identify and immediately treat diseased camels.

4. **Vector Control:** In arid regions where these vectors are common, it might be difficult to control the insects that spread Surra.
5. **Lack of Vaccination:** Contrary to other animal illnesses, Surra in camels does not have a readily accessible vaccination.

## Prevention and Control Measures

Efforts are underway to tackle the issue of Surra in camels in India:

1. **Awareness Campaigns:** To raise knowledge of Surra, its symptoms, and treatment options, educational programs geared at camel herders are essential.
2. **Quarantine and Testing:** Suspected animals should be separated, and diagnostic testing should be conducted to confirm Surra. Controlling the spread of diseases involves import and export laws in a big way.
3. **Treatment:** While there are medications available to treat Surra (Quinapyramine methyl sulphate and quinapyramine methyl chloride are very effective and widely used for curative and prophylactic purposes, respectively). Treatment effectiveness can vary, and early diagnosis is crucial for a better prognosis.
4. **Veterinary Infrastructure:** Investments in mobile clinics and veterinary infrastructure in remote desert locations can aid in the early detection and treatment of diseased camels.
5. **Research and Vaccine Development:** The creation of an efficient vaccination and ongoing Surra research are essential elements in the management of the illness.
6. **Vector Control:** There is a need to research and apply methods for controlling the insect vectors that spread Surra.
7. **Livestock Management:** Surra vulnerability can be decreased by using effective animal husbandry techniques, such as appropriate shelter and feeding.

## Conclusion

Surra continues to be a hidden problem in India's camel population, posing a serious danger to these iconic animals and impacting the livelihoods of camel herders. Even while it might

not be as well-known as some other livestock diseases, its effects on the economy and society are significant. It can cause severe economic losses due to reduced productivity and increased mortality in affected animals. A multimodal strategy is needed to combat Surra, including measures to raise awareness, early diagnosis, quarantine measures, enhance veterinarian care, manage vectors and

conduct research into vaccines and more effective treatments. For better controlling and ultimately eradicating surra in India, ongoing research, enhanced diagnostic techniques, and the creation of efficient vaccinations show promise. In India's desert regions, camels play an important cultural and economic role. By collaborating, stakeholders can lessen the impact of Surra on these animals and assist to preserve their cultural and economic value.

