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## A case report on *Trypanosoma evansi* in a Buffalo of Puducherry region

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### Abstract

A four years old female buffalo was presented with a history of unilateral epistaxis from left nostril for past 6 days, blood in milk from hind teat, weakness, in appetite, rectal temperature of 102.5°F. Animal was grossly examined for the presence of ticks, if any. Upon examination of Romanowsky stained blood smear revealed the presence of leaf shaped intercellular parasite of *Trypanosoma evansi*.

**Keywords:** *Trypanosoma evansi*, Buffalo, epistaxis, blood smear

### Introduction

*Trypanosoma evansi* is an economically important flagellate parasite mainly affects wide range of hosts like camel, horses, cattle, buffalo and dogs. It causes a disease termed as Surra caused by mechanical transmission of the tabanid flies. The disease is very common in India and has wide geographical distribution.

The illness manifests consistently throughout the year, particularly in the post-rainy season. Several instances of outbreaks in cattle and buffalo have been documented following vaccination initiatives (Pathak and Narendra Singh, 2005) [5]. Trypanosomiasis typically induces an acute illness in horses and camels, while manifesting as a chronic infection in cattle and buffaloes (Bharadwaj *et al.*, 2010) [1]. The disease is generally characterized by anemia, cachexia, pyrexia and immunosuppression.

The standard diagnostic method of surra is mainly by the demonstration of parasites in the blood smear, animal inoculation and concentration methods. In cases of subclinical infection, it is frequently challenging or even impossible to detect parasites in stained blood smears. This difficulty arises from the cryptic nature of parasitemia, which is often not observable through direct microscopy. During those conditions, alternative method like Haematocrit Centrifugation Technique (HCT) can be employed for the diagnosis.

### Materials and Methods

The weak female buffalo of four years old from Puducherry region with a history unilateral epistaxis from left nostril and it persisted for past 6 days, blood in milk from hind teat, reluctant to eat, rectal temperature of 102.5°F was observed. The animal was grossly examined for the presence of ectoparasite like tick, if any. The thin blood smear was prepared from the ear vein of Buffalo and stained with Leishman's stain to examine for the presence of any parasite.

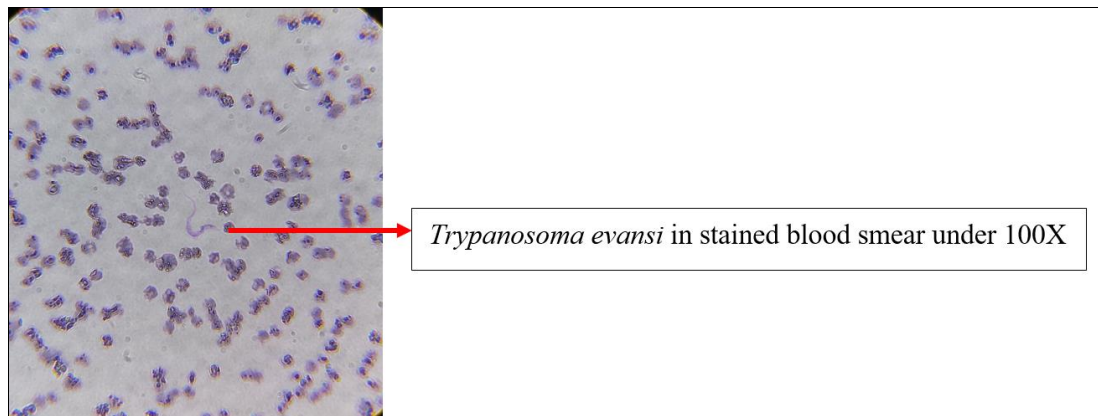
### Results and Discussion

Upon examination of animal grossly, no ticks were observed. After thorough examination of thin blood smear under low power magnification (10X), the presence of flagellate *Trypanosoma evansi* (Fig 1.) was observed and confirmed as per the standards of Soulsby, 1982 [10]. The feature of *Trypanosoma evansi* is leaf like long slender with single flagellum attached to body by undulating membrane. The erythrocyte showed the center pale nature which indicates anemia.

The report of Trypanosomiasis in buffalo is comparatively lesser than the cattle. Trypanosomiasis in buffalo usually occurs in a chronic asymptomatic form.

(Bharadwaj *et al.*, 2010)<sup>[1]</sup>. The majority of infected buffaloes are apparently healthy thus imposing the reservoir potential of buffalo (Migri *et al.*, 2016)<sup>[4]</sup>. Patel *et al.* (1983)<sup>[6]</sup>, Laha (2009)<sup>[3]</sup>, Rao and Hafeez (2005)<sup>[7]</sup> and Sivajothi *et al.* (2011)<sup>[9]</sup> have all documented a lower prevalence rate (below 10%) through conventional techniques in Gujarat, the eastern part of India and Andhra Pradesh respectively. Shahzad *et al.*, 2010<sup>[8]</sup> reported the first case of *Trypanosoma evansi* in buffalo in the state of Pakistan.

Moreover, Jaiswal *et al.*, 2015<sup>[2]</sup> suggested that Trypanosomiasis in buffaloes and cattle might exhibit asymptomatic features. Nonetheless, peracute or acute infections could also occur leading to higher mortality rates or manifestation of clear clinical signs. Buffaloes may display visible symptoms ranging from mild to severe particularly in Asian countries. These are characterized by an acute form presenting intermittent high body temperature, reduced production and loss of weight.



**Fig 1:** *Trypanosoma evansi* in stained blood smear under 100X

### Conclusion

The conclusion of this case report highlights the significance of *Trypanosoma evansi* as an economically important parasite affecting various hosts, including buffaloes. The disease, commonly known as Surra, is prevalent in India and has a wide geographical distribution, particularly post-rainy season. Diagnosis of surra can be challenging, especially in subclinical infections, where alternative methods like Haematocrit Centrifugation Technique (HCT) may be employed. The case report underscores the need for continued vigilance and diagnostic advancements to manage and control this disease effectively in livestock.

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