

## INCIDENCE OF NASAL SCHISTOSOMIASIS IN GRADED MURRAH BUFFALOES

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## ABSTRACT

Incidence *S. nasale* (causative agent of nasal schistosomiasis) in graded murrah buffaloes was studied. 4(8%) among healthy and 46(92%) among suspected buffaloes were diagnosed with nasal schistosomiasis. Area under investigation was highly irrigated giving ample scope for exposure of animals to cercaria of *S. nasale*. Buffaloes showing signs of reduced water intake, reduced milk yield, normal body temperature and normal feed intake were suspected with *S. nasale* and the results obtained are in agreement with these observations. It is concluded that buffaloes showing above signs may be suspected with nasal schistosomiasis, especially in highly irrigated areas.

**Keywords:** *S. nasale*, graded murrah buffaloes, incidence, signs, irrigation

## INTRODUCTION

Nasal schistosomiasis (also called snoring disease) is a disease affecting mainly large ruminants and to a little extent small ruminants and horses (Latchumikanthan *et al.*, 2014). The causative blood fluke for Nasal schistosomiasis, *Schistosomiasis nasale* was first identified by Rao in 1933. Nasal schistosomiasis is recognized as

the 5<sup>th</sup> major helminthosis of domestic animals in Indian subcontinent (Sumanth *et al.*, 2004). This trematode infection is majorly transmitted by fresh water snails belonging to *Indoplanorbis exustus* and *Lymnea luteola*, carrying *Cercariae indicae*, larval form of parasite. Shape of the egg is generally referred as Palanquin (Ravindran and Kumar, 2012) or boomerang (Sundar *et al.*, 2004) with presence of terminal spine. Most common signs noticed in cattle are rhinitis, sneezing, dyspnoea, mucopurulent nasal discharge, leading to snoring. Granulomatous growth of nasal epithelium (Polyps) with small abscess may occur in cattle, whereas only congestion and pin head size eruptions are observed in buffaloes in chronic manifestation of the disease (Latchumikanthan *et al.*, 2014). No major zoonotic problems were reported except for the possibility of cercarial dermatitis as reported by Sundar *et al.* (2004). Even though there are many epidemiological as well as outbreak reports regarding occurrence of nasal schistosomiasis in cattle, there is dearth of reports in case of buffaloes (Ravindran and Kumar, 2012). In this regard a study was carried out to assess the incidence of *S. nasale* in buffaloes in Gudivada of Krishna district in Andhra Pradesh, India.

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## MATERIALS AND METHODS

100 she-buffaloes of different age groups from Gudivada region of Krishna district, Andhra Pradesh, India were selected for the study. Among 100 animals, 50 apparently healthy animals and 50 suspected animals showing symptoms of sudden drop in milk yield and reduced water intake were selected for diagnosis of *S. nasale* infection. From all the animals deep nasal scrapings were collected with the help of a scoop, pressed between two slides and examined directly under microscope for presence of palanquin/ boomerang shaped eggs.

## RESULTS AND DISCUSSION

Results revealed that 4 (8%) among healthy and 46 (92%) among suspected buffaloes were positive for nasal schistosomiasis.

In general nasal schistosomiasis in buffaloes is mostly subclinical and often goes unnoticed (Latchumikanthan *et al.*, 2014). In agreement with the above statement, we observed low levels of incidence (8%) in apparently healthy animals. Similar results of 8.51% in cattle and 6.28% in buffaloes with and overall incidence of 7.56% in Andhra Pradesh (Rao, 2005) was reported, whereas higher incidences of 11.1% and 23.4% in cattle and buffaloes in slaughter house samples, respectively in Wayanad, Kerala (Ravindran and Kumar, 2012), 12.6% in Sri Lanka (De Bont *et al.*, 1989), 17.7% in Maharashtra (Kolte *et al.*, 2012), 44% in Madhya Pradesh (Banerjee and Agrawal (1992), 60.3% among nondescript bullocks and 68.9% among Hallikar bullocks in Andhra Pradesh (Sreeramulu, 1994), 69.2% in slaughter house samples in Karnataka (Sumanth *et al.*, 2004) were also reported.

It is also observed that suspected buffaloes presented with symptoms of decreased water intake, decreased milk yield, normal feed intake and normal body temperature were found to have high incidence of nasal schistosomiasis (92%). Symptoms like reduced water intake observed in this study may be due to irritation and inflammation caused to the nasal mucosa, leading to sudden drop in milk yield. These findings need further detailed investigation. Even though many other diseases will occur with same symptoms, infestation with *S. nasale* should be kept in mind while diagnosing the cause of disease, especially in highly irrigated areas. Rajamohan and Peter (1975), after studying both cattle and buffaloes, suggested buffaloes are suitable hosts compared to cattle. Most of the field veterinarians would examine a nasal washing only in case of observing specific sign “snoring” in bovines, which only occur when the disease is severe, developed to polyps and obstructing the air way. Treating at this stage takes a lot of time and economically tolls a heavy loss to owners because of drop on production. In support of our findings, treating animals with these specific signs with lithium antimony given fruitful results.

High incidence observed in this study (92% in suspected animals) was in agreement with Sundar *et al.* (2004), who reported outbreak of nasal schistosomiasis in bovines. High incidence of *S. nasale* in buffaloes in this study may be attributed to continuous exposure of the animals to cercaria on green grass, which is available throughout the year as area in this study is highly irrigated. In agreement with De Bont *et al.* (1989) all the suspected animals didn't show any prominent signs like snoring or any polyp like growths in nasal mucosa. Similar findings were reported by authors like Dutt and Srivatsava (1968), who reported that buffaloes have innate resistance, causing lack of

profound signs compared to cattle and Ravindran and Kumar (2012), who reported minor infection in all positive cases. The incidence is more in winter and old animals are highly effected in agreement with Kolte *et al.* (2012); Rao (2005).

From this study it is concluded that nasal schistosomiasis can be suspected in buffaloes showing signs of reduced water intake and sudden drop in milk yield, especially in highly irrigated areas.

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