



International Journal of Veterinary Sciences and Animal Husbandry



ISSN: 2456-2912

NAAS Rating (2026): 4.61

VET 2026; 11(2): 344-346

© 2026 VET

www.veterinarypaper.com

Received: 05-12-2025

Accepted: 15-01-2026

Dr. B Surendra

M.V.Sc., Assistant Professor
(Contract Teaching Faculty),
Department of Veterinary Clinical
Complex, College of Veterinary
Science, Proddatur, Sri
Venkateswara Veterinary
University, Tirupati, Andhra
Pradesh, India

Dr. Bhargavi Matli

M.V.Sc., Ph.D., Assistant
Professor, Department of
Veterinary Medicine, College of
Veterinary Science, Proddatur, Sri
Venkateswara Veterinary
University, Tirupati, Andhra
Pradesh, India

Dr. P Revathi

M.V.Sc., Ph.D., Assistant
Professor, Department of
Veterinary Medicine, College of
Veterinary Science, Proddatur, Sri
Venkateswara Veterinary
University, Tirupati, Andhra
Pradesh, India

Dr. KS Saikrishna

M.V.Sc., Ph.D., Assistant Professor
and Head, Department of
Veterinary Medicine, College of
Veterinary Science, Proddatur, Sri
Venkateswara Veterinary
University, Tirupati, Andhra
Pradesh, India

Dr. P Sumanth

M.V.Sc., Department of Veterinary
Parasitology, Veterinary Assistant
Surgeon, Anantapur, Andhra
Pradesh, India

Corresponding Author:

Dr. B Surendra

M.V.Sc., Assistant Professor
(Contract Teaching Faculty),
Department of Veterinary Clinical
Complex, College of Veterinary
Science, Proddatur, Sri
Venkateswara Veterinary
University, Tirupati, Andhra
Pradesh, India

Toxocariasis in buffalo calves: A case study on clinical findings and successful therapeutic intervention

B Surendra, Bhargavi Matli, P Revathi, KS Saikrishna and P Sumanth

DOI: <https://www.doi.org/10.22271/veterinary.2026.v11.i2c.3033>

Abstract

Diarrhoea is a well-known clinical sign in neonatal buffalo calves. Its etiology is complex involving management, environmental, nutritional and physiological variations and various infectious and parasitic pathogens. The present study was carried out to screen toxocariasis in buffalo calves and its therapeutic management at Department of Veterinary Clinical Complex, College of Veterinary Science, Proddatur. Fecal samples of 35 diarrhoeic buffalo calves less than 3 months old were examined in between October and December 2025. Among 35 calves, 10 calves were found to be positive for *Toxocara vitulorum* upon direct fecal microscopic examination. Treatment was initiated with oral administration of piperazine @300 mg/kg body weight followed by supportive fluid therapy with Dextrose normal saline, Ringers lactate and B complex preparation for successful complete recovery. A negative fecal egg count was noticed after 21 days post treatment.

Keywords: Diarrhoea, piperazine, *Toxocara vitulorum*

Introduction

Toxocariasis is a common cause of calf-hood mortality in India (Radiostits *et al.*, 2000) [7]. It is caused by *Toxocara vitulorum* which occurs in the small intestine of Indian buffalo calves below three months of age, especially in tropical and subtropical countries (Raza *et al.*, 2013) [11]. Many researchers reported that the livestock owners do not deworm their calves timely due to which the health of the calves remains poor in the small holder buffalo production system (Singh and Singh., 2000 and Das, 2001) [13, 3]. As the calves are the future productive units of the dairy sector, the survival of calves is imperative for livestock propagation. Buffalo calves can become infected through the transmammary and transplacental routes as well as orally via consumption of larvated eggs from the environment. *Toxocara vitulorum* is amongst the most destructive parasites of young calves, the larvae of which undergo migration causing great damage to several organs, especially to the liver and the intestine and is frequently manifested by diarrhea, poor performance and poor growth rate (Ahmed *et al.*, 2016) [1]. Adults become infected upon ingestion of larvated egg from the environment and after subsequent hatching the larva penetrates the intestine and remains as a hypobiotic larva in somatic musculature (Warren, 1971) [17]. Subsequently, the larva becomes activated around parturition and migrates to udder tissue. The young one acquires the infection through the lactogenic route, and the adult worm resides in the small intestine without undergoing any somatic migration. Toxocariasis is characterized by unthriftiness, pot-bellied abdomen, dull body coat, anaemia, restlessness, weight loss, stunted growth, sub-normal body temperature, constipation, dehydration followed by diarrhea with presence of mud coloured foul smelling faeces and death of calves due to intestinal obstruction (Soulsby, 1982, Bharkad, 1997 and Singh *et al.*, 2008) [15, 2, 14]. Toxocariasis also causes significant alteration in the haemato-biochemical status of the affected calves which leads to poor growth of the calves (Ghanem *et al.*, 2012) [5]. For treatment of toxocariasis, a wide variety of anthelmintics were available. However in the present study, piperazine was administered towards the infection of *Toxocara vitulorum* in diarrhoeic buffalo calves. Piperazine is a cyclic secondary amine anthelmintic compound that is frequently used in veterinary practice since it is active against ascarids (Maurya *et al.*, 2020) [6]

and is commercially available in a variety of salts including citrate, adipate, phosphate, hexahydrate, chloride, sulphate etc. The present case study describes the clinical presentation and therapeutic outcome in buffalo calves diagnosed with ascariasis.

Materials and Methods

In the present study, a total of 35 buffalo calves below three months age group were presented to the large animal medicine ward of Department of Veterinary Clinical Complex at College of Veterinary Science, Proddatur with clinical signs of foul smelling tarry coloured diarrhea, colic, poor body condition and dehydration since for 5 days with no history of deworming. All diarrhoeic calves were subjected to routine clinical examination. Fecal samples were processed for direct microscopic smear method examination by following standard protocols (Soulsby, 1982) [15]. The buffalo calves which were found positive for toxocariasis were included in the current study and treatment was initiated with a single-dose oral administration of Piperazine @300 mg/kg body weight. Dehydration was addressed with Dextrose normal saline and Ringers lactate followed by supportive therapy IM injection of B complex preparations.

Results and Discussion

In the present study, direct microscopic examination revealed the presence of 3-6 *Toxocara vitulorum* eggs per field (Fig. 1a & 1b) with sub-spherical, rough shelled and finely pitted albuminous layer in ten diarrhoeic buffalo calves, similar to the findings of Raut *et al.*, 2016 [10] and Maurya *et al.*, 2020 [6]. As already stated, the hypobiotic larva becomes activated at the time of parturition and migrates into the mammary gland and young one acquires the infection through lactogenic route (Starke-Buzetti, 2006) [16]. Larvae of *Toxocara vitulorum* may be present in colostrum 2-5 days after calving, and a few may be present after the 9th day (Roberts, 1989) [12]. Upon clinical examination, mucoid to mucopurulent ocular discharges (Fig. 2a), pot bellied abdomen, lustreless hair coat (Fig. 2b), diarrhoea with presence of foul smell, tarry colored feces (Fig. 3a & 3b) with blood tinged to mucoid in consistency, colic and anorexia (Raut *et al.*, 2016) [10] were noticed. As a result of diarrhea, dehydration was noticed in some affected diarrhoeic calves indicated by moderate to severe sunken eye balls (Fig. 4a) and decreased skin elasticity (Fig. 4b). These findings were consistent with those reported earlier by Maurya *et al.*, 2020 [6] and Ghanem *et al.*, 2012 [5]. The affected buffalo calves also showed signs of depression and muscular weakness due to hypoglycemia (Radiostits *et al.*, 2007). In the present study, buffalo calves were treated with a single oral administration of piperazine as an anthelmintic agent which showed good efficacy by subsiding diarrhoea and significant reduction of *Toxocara vitulorum* egg numbers upon direct fecal smear examination after 21 days post treatment. These results were in agreement with previous studies of Rao *et al.*, 2000 [9], Das *et al.*, 2018 [4] and Maurya *et al.*, 2020 [6]. Simultaneously, dehydration in diarrhoeic buffalo calves was addressed with fluid therapy with Dextrose Normal Saline and Ringers Lactate @10 ml/kg body weight intravenously for a period of three days resulting in subsidence of dehydration and weakness. These observations were in agreement with previous studies of Das *et al.*, 2018 [4] and Maurya *et al.*, 2020 [6]. Besides these, supportive therapy which included 2 ml of B- Complex Preparation (Inj. Tribivet) intramuscularly and oral electrolyte preparations were recommended.

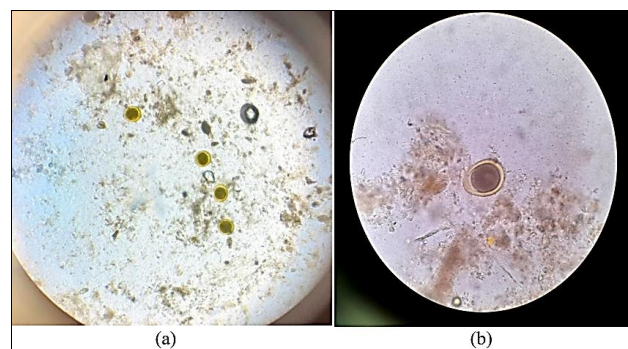


Fig 1: (a) Fecal smear positive for egg *Toxocara vitulorum* egg under 10X, (b) Sub spherical *Toxocara vitulorum* with rough shell and pitted albuminous layer under 40X



Fig 2: (a) Buffalo calf with Pot belly, lustreless hair coat, (b) Buffalo calf with mucoid ocular discharges

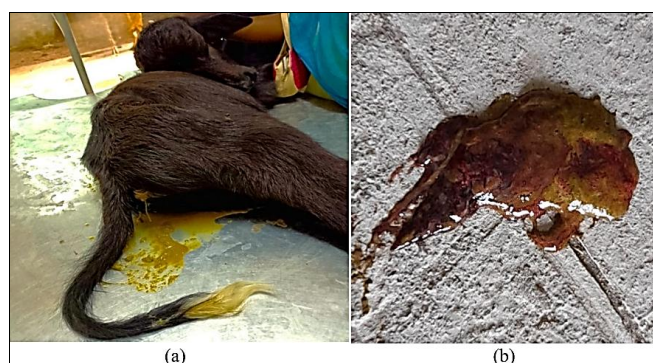


Fig 3: (a) Diarrhoeic buffalo calf with tarry colored feces, (b) Blood tinged mucoid feces



Fig 4: (a) Buffalo calf with sunken eye ball, (b) Buffalo calf with decreased skin elasticity

Conclusion

The present study revealed a brief observation on diarrhoeic buffalo calves infected with *Toxocara vitulorum* from lactogenic route and consumption of larvated eggs from the environment. Routine faecal sample examination and

deworming should be done for the buffalo calves to avoid the infestation. It can be recommended that piperazine @300 mg/Kg body weight orally for a single dose along with supportive drugs is a suitable regimen for treatment of *Toxocara vitulorum* infection in calves and thereby preventing calf mortality, diarrhoea and other complications in field conditions.

Acknowledgements

We thank the authorities of Sri Venkateswara Veterinary University, Tirupati, Andhra Pradesh and the College of Veterinary Science, Proddatur for the facilities provided in conducting this study.

Conflict of interest: The authors declare that there is no conflict of interest.

References

- Ahmed R, Wani Z, Allaie I, Bushra M, Hussain H. *Toxocara vitulorum* in a suckling calf: a case study. J Parasit Dis. 2016;40(4):1330-1331.
- Bharkad GP. Prevalence, diagnosis and histopathology of concomitant gastrointestinal parasitic infection on buffalo and cow calves with special reference of *Toxocara vitulorum* [thesis]. Parbhani: Marathwada Agricultural University; 1997.
- Das S. Small scale buffalo production systems and their sustainability. A case analysis [thesis]. Izatnagar: Indian Veterinary Research Institute (IVRI); 2001.
- Das G, Kalita DN, Phukan A, Dutta TC, Mahato G, Phukan SC. Therapeutic efficacy of anthelmintics in management of *Toxocara vitulorum* infection in calves. Int J Chem Stud. 2018;6(6):2799-2802.
- Ghanem MM, Abd El-Raof YM, El-Nady HA, El-khaiat HM. Clinical and haemato-biochemical changes of parasitic enteritis in buffalo with reference to acute phase protein. Benha J Appl Sci. 2012;1:74-82.
- Maurya PS, Sahu S, Rawat S, Jaiswal V. Simultaneous Infection in a Buffalo calf with *Toxocara vitulorum* and *Eimeria bareillyi*-A Case Report. Res J Vet Pract. 2020;8(1):1-3.
- Radostits OM, Gay CC, Blood DC, Hinchcliff KW. Veterinary Medicine. 9th ed. London: W.B. Saunders; 2000.
- Radostits OM, Gay CC, Hinchcliff KW, Constable PD. Veterinary Medicine: A textbook of the diseases of cattle, horses, sheep, pigs and goats. 10th ed. Philadelphia: Elsevier; 2007.
- Rao RS, Kumar MU, Rao R. Therapeutic trial of drugs in ascariasis in buffalo calves. Indian Vet J. 2000;77(1):57-59.
- Raut S, Sahu RK, Mahalik A. *Toxocara* infestation in a suckling buffalo calf: A case report. Sch J Agric Vet Sci. 2016;3(2):123-125.
- Raza M, Murtaza S, Ayaz M, Akhtar S, Arshad H, Basit A, et al. *Toxocara vitulorum* infestation and associated risk factors in cattle and buffalo at Multan district, Pakistan. Sci Int (Lahore). 2013;25(2):291-294.
- Roberts JA. *Toxocara vitulorum*: Treatment based on the duration of the infectivity of buffalo cows (*Bubalus bubalis*) for their calves. J Vet Pharmacol Ther. 1989;12(1):5-13.
- Singh R, Singh N. Influence of socio-economic variables on adoption of buffalo calf rearing management practices in rural Haryana. Indian J Anim Sci. 2000;70(3):325-326.
- Singh K, Mishra SK, Pruthi AK. Pathology of parasitic infestations in gastrointestinal tract in buffalo calves. J Vet Parasitol. 2008;22:17-20.
- Soulsby EJJ. Helminths, Arthropods and Protozoa of Domesticated Animals. 7th ed. London: Bailliere Tindall; 1982. p. 155-169.
- Starke-Buzetti WA. *Toxocara vitulorum* in Livestock. In: Holland CV, Smith HV, editors. *Toxocara: The Enigmatic Parasite*. Wallingford: CABI Publishing; 2006. p. 260-277.
- Warren EG. Observations on the migration and development of *Toxocara vitulorum* in natural and experimental host. Int J Parasitol. 1971;1(1):85-99.

How to Cite This Article

Surendra B, Matli B, Revathi P, Saikrishna KS, Sumanth P. Toxocariasis in buffalo calves: A case study on clinical findings and successful therapeutic intervention. International Journal of Veterinary Sciences and Animal Husbandry. 2026;11(2):344-346.

Creative Commons (CC) License

This is an open-access journal, and articles are distributed under the terms of the Creative Commons Attribution-Non Commercial-Share Alike 4.0 International (CC BY-NC-SA 4.0) License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.