ABSTRACT

Diarrhoea is a well-known clinical sign in neonatal animals. It’s etiology is complex involving management, environmental, nutritional and physiological variations and various infectious and parasitic pathogens. This study was undertaken to determine the incidence of parasitic infection in diarrhoeic buffalo calves at the Livestock Farm Adhartal Jabalpur recorded for the period between June and December 2011. Fecal samples from diarrhoeic buffalo and cow calves were examined to ascertain the presence of parasitic infection. Direct smear, sedimentation and floatation methods were used for detecting parasites in feces. The overall incidence of enteric parasitic infection as determined by faecal examination of diarrhoeic buffalo calves was calculated as 68.75%. The parasites found comprised Cryptosporidium spp., Eimeria spp., Toxocara spp. and tapeworms. The highest incidence observed was Cryptosporidium spp. (37.70%), followed by Toxocara spp. (13.98%), Eimeria spp. (10.20%) and tapeworms (8.1%). Maximal parasitic infection was recorded in the month of November.

Keywords: calves, diarrhoea, enteric, parasite

INTRODUCTION

Calves are the livestock industry of the future. One of the major causes of neonatal calf mortality and morbidity is diarrhoea. Diarrhoea is a well-known clinical sign in neonatal animals. It’s etiology is complex involving management, environmental, nutritional and physiological variations and various infectious and parasitic pathogens. Infections with gastrointestinal parasites are among the important factors contributing to increased calf mortality. Subclinical nematode parasitic infections cause great economic losses and these go unnoticed in cattle on rangeland. It is also known that calf weight affects survivability of the calf (primarily in the early days), dam milk production and later performance (Stronbergh and Averbeck 1999). Growth is strongly affected by the consumption of milk by the calf (Sandoval et al., 2005), because it affects the availability of nutrients, the development of the digestive tract and the appropriate development of the immunity system against some diseases such as parasitosis (Arrayet et al., 2002; Coverdale et al., 2004). Schottstedt et al. (2005) mentioned that the parasite burden is influenced by the milk intake of the calf. Parasites could be present all year round, causing problems in all stages of calf growth and productivity, decreasing feed intake (Frisch and Vercoe, 1986).
This study was undertaken to determine the incidence of parasitic infection in diarrhoeic buffalo calves at an organized livestock farm recorded for a period in which there were three climatic conditions, that is, hot and dry (average ambient temp 42°C), warm and humid (average ambient temp 31°C ) and cool and dry (average ambient temp 26°C).

MATERIALS AND METHODS

Buffalo calves of either sex up to 5 months of age were included in the study. Samples were collected from 10 diarrhoeic and 10 non-diarrhoeic buffalo calves in each season. Thus, a total 30 faecal samples were collected from diarrhoeic and 30 from non-diarrhoeic buffalo calves. Diarrhoea was defined as an abnormally loose consistency of feces, and was classified according to the clinical signs present in the calves (anorexia, depression, weakness) and observations including the colour and consistency of feces were also noted. Fecal scraps were collected per rectum using sterilized gloves and samples were placed in polythene bags which were labeled and sealed properly for identification of calves. Direct smear, sedimentation and floatation methods were used for detecting parasitic stages in feces.

RESULTS AND DISCUSSION

The incidence of enteric parasitic infection as determined by faecal examination was calculated as 68.75% for diarrhoeic animals and 45% for non-diarrhoeic animals. Variable incidences of parasitic infection has been reported by different workers (Riberio et al., 2000; Björkman et al., 2003) in buffalo and cow calves from different areas. The incidence of parasitic infection will definitely be governed by the managerial and deworming practices followed in different dairy farms. The higher incidence of parasitic eggs was found in the cool and dry month of November.

The parasitic stages found during the faecal examination of different animals comprise Cryptosporidium spp., Eimeria spp., Toxocara spp. and tapeworms. The highest incidence observed was Cryptosporidium spp (37.70%). Cryptosporidium occurs in diarrheic calves and more than 10% of all the scouring calves excrete cryptosporidium at the same time as rotavirus (Snodgrass et al., 1986). Signs are usually unapparent but chronic diarrhea has been associated with cryptosporidiosis especially in neonatal calves. An incidence of 13.98% Toxocara spp. was found in the present study. Toxocarosis in buffalo calves is considered as one of the most common ailments and is responsible for high mortality. According to Radiostits et al. (2000), it is recognized as the number one cause of calf morbidity and mortality. The workers stated that T. vitulorum larvae are passed in great numbers in the colostrum 2-5 days after calving, worms are matured in the intestine of the calves by 10 days of age and eggs are passed by 3 weeks and then the adult worms are expelled from the intestine by 5 month of age, and for this reason, toxocariasis has been considered as calfhood disease.

Reports on the incidence of clinical bovine calf coccidiosis are very scanty. Radostits et al. (2000) reported 15-20 days prepatent and 6-30 days incubation period of Eimeria infection. 10.20% (10/98), Eimeria spp. stages were observed in the present study which is in accordance with the findings of earlier workers (Shah et al., 1990) who reported a low incidence (7.77%) of Eimeria spp. infection. However, Priti et al. (2008) reported
a prevalence of bovine coccidiosis among cattle (20.76%) and buffaloes (25%) at Patna (Bihar) and its surrounding areas. Thus, the prevalence of *Eimeria* infection varies with the geographical location and climatic conditions prevailing in the area.

A low prevalence of 8.1% tapeworm infection was observed in the present study. Borthakur and Das (2005) examined faecal samples of calves of 240 cattle and 60 buffalo for *Moniezia* spp. infection. The infection rate observed by the workers was 5%, 13.75% and 6% in indigenous, cross-bred cow calves and buffalo calves, respectively.

An interesting finding was the presence of parasites in non-diarrhoeic faecal samples also. This indicates that a subclinical parasitic infection of parasites may be prevalent leading to reduced weight gain.

**CONCLUSION**

In young calves the intestinal parasites are usually considered responsible for early calf mortality. Scientific deworming practices are not properly adopted on many farms. All the animals present under one shed are not given the dewormers at the same time. It was also observed that most farmers are not using the recommended dose of a de-wormer. Dewormers are usually very expensive and their proper dosing is important not only to obtain maximum efficacy but also to reduce the treatment cost.

**REFERENCES**

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