INVESTIGATION OF PARASITIC INFECTIONS OF THE BUFFALO HERD AT BORALANDA FARM

SAMARAKOON JAYASEKARA MUDIYANSELAGE RAMYA

RUKLANTHY SAMARAKOON

M.V.Sc.

UNIVERSITY OF PERADENIYA

SRI LANKA

August 2010

Abstract

The study was mainly aimed at investigating parasitic problems of the buffalo herd at Boralanda farm in Badulla district. The buffalo herd was with *Murrah* breed and primarily managed for issue of high bred bull calves and heifers to improve the genetic potential of buffaloes in Uva province. However high mortality, lack of response to anthelmintic treatment, continuous diarrhea, growth retardation and lack of proper disease investigation programme for parasitic infections were the crucial problems identified in the herd.

The specific objectives of this study were primarily to investigate the parasitic problems in the herd. Here it was mainly aimed at identifying blood parasites and gastrointestinal parasites including helminth and protozoa. Also other objectives were to monitor the seasonal variation of fecal egg counts, introduce cost effective anthelmintic treatment programme to monitor the effectiveness. Profitable management of buffalo herd was the outcome expected.

The research was carried out with 89 buffaloes in the farm from July 2009 to June 2010. For convenience buffaloes were monitored separately in 3 groups, ie less than 1 year, 1-2 years and adult groups. Dung samples and body weights were taken once a month in 3 groups except in calves with less than 3 months. Less than 3 month calves were monitored twice a week. Blood smears and dung samples were drawn once from all animals to test for blood parasites and *Cryptosporidium* species respectively. Pasture larval count and nutritional analysis from grazing pasture were also tested.

Investigation results in less than 1 year group revealed presence of *Toxocara vitulorum, Strongyloides papillosus*, *Strongyle*, worm species and *Eimeria* and *Cryptosporidium* species. In 1-2 year group *Strongyloides*, *Oesophagostomum*, *Bunostomum, Cooperia*, *Trichuris* worms and *Eimeria* and *Cryptosporidium* species were identified. In adult group only *Strongyle*, *Trichuris* worms and *Cryptosporidium* species were observed. The herd prevalence of blood parasites were 75 % and were positive for *Theileria* and *Anaplasma marginale*. Highest prevalence of blood parasites was evident in adult animals (52.8%). Highest mean gastrointestinal parasitic egg counts were evident in less than 1 year group. The herd prevalence of Cryptosporidiosis was 59.5% and highest prevalence was recorded in adults with 41.5%. Significant association was evident in animals with diarrhea and clinical Cryptosporidiosis only in less than 1 year group ($P = 0.036$). No significant changes in body weights in relation to fecal egg counts were observed in all groups. Anthelmintic drugs Albendazole and Febantel were satisfactorily effective for *Strongyle* and *Strongyloides* while resistance development was noted in Levamisole for *Toxocara vitulorum.* Pasture larval counts seemed to be increased during the rainy season. Lowered crude protein, copper and zinc levels were evident in grazing pasture.

This herd problem was multifactoial. Climatic factors (specially RH% and rain fall), age relationship, lack of immunity and low nutrition in pasture due to low soil fertility were identified as predisposing factors for heavy parasitism. Effective deworming schedule can be introduced to deworm calves with Febantel at 10 days of age to remove *Toxocara* immature larvae and deworm with Albendazole (to remove *Strongyle* species) early rainy season in a year. Additional mineral supplement for calves and cows and some biological control measures to control free living larvae would be considered.