

# Efficacy Analysis of Parasitic Integrated Control in Buffaloes

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## ABSTRACT

Parasitic infestations are responsible for economic losses to buffalo farms. Using the scientific support of epidemiological and parasitic studies in this area, the present research aimed to evaluate the efficacy of an integrated control of parasitic disease purposed. The parasitic integrated control provides a schedule for optimize the drugs for parasitic control to reduce the number of treatments, reduce costs and the parasitic infestation impact in animal productions. In the experiment was used a total population of buffaloes reared in a farm located at Minas Gerais State, Brazil. The in the same day the calves, growing males and non lactation animals were treated with doramectin (200 mcg/ kg BW) and the lactation animals were treated with alfa-ciano-3-fenoxibenzil-2, 2-dimetil-3-(2,2-diclorovinil)-ciclopropano carboxilaton solution. Calves positive to *Eimeria bareillyi* and *Eimeria bovis* oocysts were treated with toltrazuril. The lice population was eradicated and the average numbers of trichostrongylid eggs and *Eimeria* sp. oocysts were substantially reduced to acceptable account.

**Keywords:** buffaloes, parasitic treatment, Trichostrongylid, *Eimeria* sp., *H. tuberculatus*

## INTRODUCTION

Using the epidemiological information of parasitological infections in buffaloes (Lau, 1993; Bastianetto and Leite, 2005; Bastianetto *et al.*, 2012) is possible to reduce the numbers of parasitic treatments to improve sanity, reduce the selection of helminth resistance to parasitic drugs and costs with animals medications. The parturition concentration, reproduction seasonality, results in more non lactation animals at the end of year in Brazilian buffalo herds and this allows the utilization of the parasitic integrated control in the different animal production categories. The high efficacy of macrocyclic lactones to control gastrointestinal helminthes and lice (*Haematopinus tuberculatus*) (Bastianetto and Leite, 2005; Bastianetto *et al.*, 2012) favor the utilization of only drug to control both parasitic groups. The aim of this study was evaluate the efficacy of the parasitic integrated control after a complete parasitic diagnostic in all production categories.

## MATERIALS AND METHODS

This study was realized using a group of 40 buffaloes composed of adult females (n = 11), sire (n = 1), calves (n = 10) and growing males (n = 18) raised in *Fazenda Modelo da UFMG*, located in Pedro Leopoldo, Minas Gerais, Brazil. Initially they were performed a coprological tests (Whitlock, 1948; Ueno and Gonçalves, 1998) and clinical exams to identify the gastrointestinal and ectoparasite presents to select the better drug to use. After the diagnostic of trichostrongylid eggs, *Eimeria* sp. oocysts and *H. tuberculatus* the animals of each category were treated with doramection or toltrazuril according to the follow schedule: in the same day (D1) the calves, growing males and non lactation animals were treated with doramectin (200 mcg/ kg BW) and the lactation animals were treated with topical application of alfa-ciano-3-fenoxibenzil-2, 2-dimetil-3-(2,2-diclorovinil)-ciclopropano carboxilaton solution at Days 1, 15, 30 and 45. Calves positive to *Eimeria* sp. were treated with a single dose of toltrazuril (15mg/kg BW). The efficacy of the control purposed was checked once weekly during the follow 60 days.

## RESULTS AND DISCUSSIONS

All buffaloes were positive to *Haematopinus tuberculatus*, the calves and heifers positive to trichostrongylid worms (mean of EPG = 192, 30) and few calves (n=2) were also positive to *Eimeria bayrelii* and *Eimeria bovis* oocysts (mean = 350, 250). The lice population was eradicated and the average numbers of trichostrongylid eggs and *Eimeria* sp. oocysts were substantially reduced to acceptable account (less than 100 EPG). In buffaloes herds, the utilization of epidemiological knowledge of buffalo parasites associated to the adequate parasitic diagnostic allows the utilization of the parasitic integrated control and attend the purpose of this parasitological treatment schedule with all the benefits. Considering the buffaloes rustic, animals reared in tropical conditions with a good nutrition managements, it is possible to eliminate all parasitic treatments after the 24 month of age. To attend this goal is also necessary use adequate physical division of different animal production categories and periodically use coprological and clinical exams to monitor parasitic infestation levels.

## IMPLICATIONS

The adoption of correct parasitic control in buffalo herds enables increase productivity of meat and milk with reduced utilization of antiparasitic drugs. Besides the reduction of treatments costs and resistance to antiparasitic drugs, it is also necessary to preserve human health.

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