


AN EVALUATION OF THE EFFICACY OF POLYHERBAL FORMULATIONS IN THE TREATMENT OF CALF SCOURS
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ABSTRACT

The present study was undertaken to evaluate the efficacy of polyherbal formulations, Diaroak® and Salcochek® (M/s Ayurved Limited), in the treatment of calf diarrhea under field conditions. 24 calves suffering from diarrhea were allocated to three groups: T₀ received no treatment, T₁ treated with 15 gm Diaroak twice daily for five days, and T₂ treated with 15 gm Salcochek twice daily for five days. Frequency of defecation and presence of mucus in feces were markedly decreased in the treatment groups. Total numbers of animals showing complete recovery in the treated groups were seven and six, respectively. It could be concluded that polyherbal anti-diarrheal formulations can be successfully used for the management of non-specific diarrhea in calves.

KEYWORDS: Antimicrobial, Calf Diarrhea, Calf Scours, Diaroak, Salcochek, Resistance.

INTRODUCTION

Calf diarrhea, more notoriously known as calf scours, is a cause of severe economic losses to the cattle industry globally.^[1] The losses include, in addition to those due to mortality, expenses on the treatment and man-hours spent on care as well as subsequent chronic ill-thrift and impaired performance of the affected animals.^[2] Calf scours is not a single disease entity – it is a clinical sign associated with several diseases and can be attributed to both infectious and non-infectious factors.^[3] The infectious organisms causing calf diarrhea pose a risk for public health. The conventional management of calf-diarrhea employs antibiotics that interfere with the optimal development of ruminal ecology and pose further public health concerns. Antimicrobial-resistant bacteria borne by the animals can reach humans through the contaminated milk and other animal products, farm run-off water, and several other routes.^[4,5] Lately, there has been an increased interest in the use of polyherbal preparations as alternatives to antibiotics in the treatment and control of different diseases including calf scours. The present study evaluates the efficacy of two different polyherbal formulations, Diaroak® and Salcochek® (M/s Ayurved Limited), in the treatment of calf diarrhea under field conditions.

MATERIALS AND METHODS

The trial was conducted at the testing facility of the Department of Veterinary Medicine, Ranchi Veterinary College, Kanke Ranchi, India. 24 weaned calves, of either sex and two to three months age, with apparent

clinical signs of diarrhea were selected and randomly allocated to either of three groups *viz.* T₀ receiving no treatment, T₁ treated with 15 gm Diaroak twice daily for five days, and T₂ treated with 15 gm Salcochek twice daily for five days. The frequency of dosage was increased to thrice daily in severe cases. All the calves were housed separately from each other. The average number of doses required for treatment per group, number of animals completely recovered per group, number of animals in moribund state per group, frequency of defecation per group, and the presence of mucus in feces were recorded on days zero, three, and five of treatment. The group-wise data was subjected to two-way analysis of variance (ANOVA) for ascertaining statistical significance of the results.

RESULTS AND DISCUSSION

The results are summarized in Table 1. The average number of doses required was 4.88 ± 0.32 and 5.75 ± 0.32 for T₁ and T₂, respectively. The numbers of animals showing complete recovery were seven and six for T₁ and T₂, respectively. None of the animals showed recovery in T₀ during the trial period. The frequency of defecation reduced from 8.47 ± 0.33 to 4.23 ± 0.68 in T₁ and from 8.91 ± 0.66 to 5.75 ± 0.94 in T₂, whereas no reduction was seen in frequency of defecation of control group. Presence of mucus in feces decreased in T₁ and T₂ whereas no decrease was seen in the control group. None of the animals in T₁ were in moribund state as compared to T₀ (6) and T₂ (1). Overall, while the effect of treatment was highly significant ($p = 0.003$), the differences

between effect of Diaroak and Salcocheck remained non-significant ($p = 0.884$).

The action of Diaroak may be attributed to its constituent herbs, *Holarrhena antidysenterica*, known to possess anti-diarrheal and anti-inflammatory properties^[6,7], *Acacia catechu*, having antipyretic and anti-diarrheal properties^[8], and *Aegle marmelos*, which is known to have anti-diarrheal and anti-microbial properties.^[9,10] Similarly, Salcocheck has been found effective in *E. coli* induced enteritis in broilers^[11], in the control of post-weaning diarrhea in piglets^[12], and in the control of enteritis due to *Salmonella enteritidis*.^[13] The key ingredients are *Aegle marmelos*, *Punica granatum*,

Plantago ovata, sugars and salts. Salts and sugars in Salcocheck help to overcome the electrolyte imbalance occurring due to diarrhea.

It is notable that bacteria isolated from organic dairy herds exhibit significantly lower resistance to antimicrobials than those isolated from conventional dairy farms.^[14] Hence, the use of polyherbal formulations may deter the emergence and spread of antimicrobial-resistance. To conclude, polyherbal formulations were found effective in the treatment and management of non-specific diarrhea in calves.

Table. 1: Effect of polyherbal anti-diarrheal formulation on calves suffering from diarrhea. The average number of doses required per group, number of animals completely recovered per group, number of animals in moribund state per group, frequency of defecation per group, and the presence of mucus in feces were recorded on days zero, three, and five of treatment.

Groups \ Parameters	T0			T1			T2		
Days	0	3	5	0	3	5	0	3	5
Avg. number of doses	0	0	0	2.0±0	4.88±0.32	5.75±0.81	2.0±0	5.33±0.39	6.63±0.98
No. of animals recovered	0	0	0	0	5	2	0	3	3
No. of animals in moribund state	6	6	6	6	2	0	6	4	1
Frequency of defecation	8.38±0.38	8.63±0.49	8.59±0.41	8.47±0.33	5.13±0.77	4.23±0.68	8.91±0.66	6.53±0.92	5.75±0.94
Presence of mucus in feces	+++	+++	+++	+++	++	+	+++	++	++

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