

Comparative study on deworming potential of herbal drugs in crossbred heifers at an organized dairy farm

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Introduction: Aloe vera, or *Aloe barbadensis*, is traditionally used in Indian medicine for constipation, colic, skin diseases, worm infestations, and animal infections, with its bitter taste and cathartic effect attributed to anthraquinones like barbaloin. On the other hand, Areca nut seeds, or *Areca catechu* L., possess various pharmacological activities, including antioxidant, anti-bacterial, and anthelmintic effects, which are related to the presence of compounds such as phenolics, flavonoids, and alkaloids in their extracts.

Objectives: This study was undertaken to assess the anthelmintic effects of areca nut and aloe vera in comparison to a commercial dewormer, as part of the broader objective to explore sustainable herbal alternatives rooted in indigenous traditional knowledge for countering worm resistance to chemical dewormers.

Materials and Methods: This study involved forty heifer calves aged twelve to eighteen months from the University Livestock Farm at Kerala Veterinary and Animal Sciences University, India. The calves were evenly distributed into four groups: T1, T2, T3, and T4. T1 and T4 served as the positive and negative control (received no treatment) groups respectively. T1 received Albendazole, a chemical dewormer, at 10 mg/Kg body weight. T2 was administered a blend comprising 80 grams of aloe vera mucilage and 20 grams of palm jaggery in order to mask the bitter taste of aloe vera, while T3 received 1.5 grams of dried areca nut powder per kilogram of body weight. Faecal samples were collected from all groups on the 0th, 15th, and 30th days post-treatment to analyse eggs per gram. Blood samples were obtained on these days, and changes in body weight gain were compared across the intervals.

Results, Discussion and conclusion: The study found that the average percent fecal egg count reduction in T3 and T4 groups was comparable to that of T1 ($p=0.015$), and notably higher than that of T4. Moreover, all three treated groups exhibited a significant increase in erythrocyte count, hemoglobin concentration, and PCV compared to the negative control. These findings strongly indicate that herbal dewormers are equally effective as chemical counterparts, highlighting their potential as viable alternatives in deworming strategies.

Additional keywords: Herbal dewormer, Aloe vera, Areca nut