RESUMO SIMPLES - HELMINTOLOGIA: SISTEMÁTICA, EPIDEMIOLOGIA E CONTROLE

# IN VITRO EFFICACY OF FUNGAL FORMULATIONS ON GASTROINTESTINAL HELMINTHS IN GOATS

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With the advance of anthelmintic resistance, controlling gastrointestinal helminthiasis in small ruminants has become an increasing challenge. Given this scenario, sustainable alternatives, such as the use of nematophagous fungi, stand out as promising biocontrol strategies. The present study aimed to evaluate in vitro the efficacy of fungal formulations on immature stages of gastrointestinal helminths in goats. Fecal samples were collected directly from the rectal ampulla of naturally infected animals that had not received

anthelminthic treatment for 60 days. The samples were homogenized and subjected to the McMaster technique, obtaining an average count of 1100 eggs per gram of feces (EPG). The action of the formulations was evaluated by quantitative coproculture. For this purpose, ten experimental groups were established, using the formulations BVET 93 ($1.25 \times 10^7$ conidia/g), BVET 94 ($3.75 \times 10^6$ conidia/g), BVET 99 ($3.5 \times 10^6$ conidia/g), and BVET 108 ($7.5 \times 10^5$ conidia/g), tested at concentrations of 1 g and 2 g. The species of fungus used in the formulations cannot yet be disclosed due to the confidentiality of the manufacturing company. A negative control containing only distilled water and a positive control composed of ivermectin at a concentration of 0.008 mg/mL were included. Each group consisted of ten experimental units. Efficacy was determined by the percentage reduction in larvae compared to the negative control. Data were analyzed by ANOVA, followed by Tukey's test at 5% significance. The results showed that, at a concentration of 1 g, formulations BVET 93, BVET 94, BVET 99, and BVET 108 had efficacies of 70.72%, 88.51%, 99.99%, and 100%, respectively. At a concentration of 2 g, these same formulations showed efficacies of 98.05%, 84.89%, 100%, and 100%. The positive control showed an efficacy of 98%. It is concluded that all formulations evaluated were able to significantly reduce the recovery of gastrointestinal helminth larvae from goats in in vitro tests, with BVET 99 and BVET 108 being the most promising, with high efficacy in both concentrations evaluated. The findings reinforce the potential of using nematophagous fungi as a sustainable alternative to chemical anthelmintics and suggest continuing evaluations in semi-field and field conditions to validate the practical application of these formulations in real production systems.

Palavras-chave: anthelmintic resistance; biological control; nematophagous fungi.