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EVALUATION OF ANTHELMINTIC EFFICACY AGAINST GASTROINTESTINAL STRONGYLES IN DONKEYS FROM ALBA COUNTY, ROMANIA

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Abstract: *Gastrointestinal strongyle infections can affect the health and welfare of donkeys, highlighting the importance of parasitological monitoring and effective parasite control. This study aimed to assess strongyle egg shedding and evaluate the response to anthelmintic treatment in donkeys from Alba County, Romania. The investigation was conducted between October and December 2023 on 20 privately owned donkeys from Cugir, Acmariu, and Balomiru de Câmp, aged 3–31 years. Animals were divided into a treated group and an untreated control group, each comprising five males and five females. Individual faecal samples were examined using the McMaster method before treatment and 14 days afterwards. The treated group received Ecvirom, a commercial formulation containing albendazole and avermectin B1. Strongyle-type eggs were detected in all animals at baseline, with faecal egg counts ranging from 250 to 2,200 eggs per gram. In the treated group, the mean faecal egg count decreased from 655 to 35 eggs per gram, corresponding to a reduction of 94.66% relative to baseline. In the control group, mean counts remained largely unchanged, decreasing from 445 to 440 eggs per gram. These findings demonstrate widespread strongyle egg shedding among the examined donkeys and a marked reduction following treatment. Egg shedding persisted in four treated animals at day 14, supporting the need for post-treatment parasitological monitoring to evaluate treatment response and guide subsequent parasite control.*

Keywords: *donkeys, strongyles, faecal egg counts, anthelmintic treatment, Romania.*

• Introduction

Gastrointestinal strongyles are widely distributed parasites of equids, including horses and donkeys. The family Strongylidae comprises the Strongylinae and Cyathostominae, which differ in morphology and aspects of their development. These parasites are relevant to equid health because infection may be clinically inapparent or associated with intestinal disease. Studies in horses have documented diverse gastrointestinal parasite communities and differences in infection associated with management and grazing conditions. Anthelmintic resistance further complicates parasite control. Studies in horses have reported reduced efficacy of commonly used compounds, including benzimidazoles and, in some settings, other drug classes. The present study aimed to describe strongyle egg excretion in privately owned donkeys from three localities in Alba County, Romania, and to evaluate changes 14 days after treatment with Ecvirom, a commercial formulation containing albendazole and avermectin B1. An untreated group was examined over the same interval to account for changes unrelated to treatment.

• Material and method



The study was conducted between October and December 2023 on 20 privately owned donkeys from three localities in Alba County, Romania. Animals were divided into a treated group (n = 10), receiving oral Ecvirom (albendazole and avermectin B1), and an untreated control group (n = 10). The donkeys were kept in household holdings and had access to pasture containing perennial grasses and legumes. Individual faecal samples were collected before treatment and 14 days later and examined using the McMaster technique, with a counting increment of 50 eggs per gram (EPG). Strongyle-type eggs were counted, and individual EPG values and arithmetic group means were calculated. Treatment response was assessed by calculating the faecal egg count reduction (FECR), adjusted for changes in the control group. No species-level identification was performed.

• Results and discussions

Animal no. within group	Treated Day 0	Treated Day 14	Control Day 0	Control Day 14
1	450	0	400	450
2	750	0	550	500
3	350	0	450	450
4	550	0	550	500
5	350	50	300	400
6	600	0	500	450
7	550	150	450	400
8	2200	0	600	550
9	250	50	350	400
10	500	100	300	300
Arithmetic mean	655	35	445	440

Strongyle-type eggs were detected in all 20 donkeys before treatment. Baseline mean faecal egg counts were 655 EPG in the treated group (range: 250–2200 EPG) and 445 EPG in controls (range: 300–600 EPG). At day 14, the treated-group mean decreased to 35 EPG, with no eggs detected in six of the ten animals. In contrast, the control-group mean remained largely unchanged at 440 EPG. The control-adjusted faecal egg count reduction was 94.6%.

At day 14, the mean faecal egg count in the treated group decreased from 655 to 35 EPG. No eggs were detected in six donkeys, while four remained positive, with counts ranging from 50 to 150 EPG. All control animals remained positive, and their mean count changed only slightly, from 445 to 440 EPG. The unadjusted and control-adjusted faecal egg count reductions were 94.66% and 94.60%, respectively.

Calculation	Substitution	FECR (%)
Treated group before–after	100 × (1 − 35/655)	94.66
Control-adjusted equation	100 × [1 − (35/655) × (445/440)]	94.60
Second equation as written in the source	100 × [1 − (35/655) × (550/440)]	93.32

All 20 donkeys examined were positive for strongyle-type eggs at baseline. Treatment markedly reduced egg excretion after 14 days, although four treated animals remained positive. These findings support a short-term treatment effect but do not establish parasite elimination or the resistance status of either active ingredient. Interpretation is limited by the small sample size, absence of species-level identification and lack of confidence intervals. Regular faecal monitoring, accurate dosing and pasture hygiene remain important components of parasite control.

• Conclusions

All 20 investigated donkeys excreted strongyle-type eggs before treatment. The treated-group mean declined from 655 to 35 EPG at day 14, while the control-group mean changed from 445 to 440 EPG. The control-adjusted reduction calculated from the tabulated means was 94.60%, supporting a substantial short-term reduction in egg excretion. Parasite identification, longer follow-up and verification of the treatment and statistical records are needed before drawing broader conclusions about efficacy or resistance.

