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Prevalence and intensity of gastrointestinal nematode infection in small ruminants in three West African countries

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Abstract

This study was carried out to provide missing information on the prevalence and intensity of gastrointestinal nematode (GIN) infections of small ruminants in three West African countries. The use of communal grazing areas in these countries favours the spread of GIN infections across small ruminants and may reduce production performances and herders' income. Faecal samples of 1,235 small ruminants were collected in Burkina Faso, Mali and Senegal in late dry (May), rainy (August) and early dry (November) season of 2022. Individual Faecal Egg Counts (FEC) were performed by a modified McMaster technique. Animals were selected in several villages according to the following parameters: species (sheep, goats), age (young: 6–12 months, adult: >12 months) and sex (male, female). The Kruskal-Wallis test was applied to assess the influence of these parameters on FEC intensity, expressed as eggs per gram of faeces (EPG). The overall prevalence of GIN was 70.8%, 82.6% and 66.8% in Burkina Faso, Mali and Senegal, respectively. In all countries, the rainy season corresponded to the highest infection period. The mean \pm standard deviation of EPG across all countries was 230 ± 350 , $1,023 \pm 1,176$ and 424 ± 352 for late dry, rainy and early dry season. Infection intensity was higher in young than in adult animals, and in male than in female animals in the rainy season, whereas no differences could be observed between these groups in the late dry season. Similarly, there was no significant difference in the mean EPG between sheep and goats late dry season. The results indicate that better monitoring and control of GIN infections are necessary during the rainy season and especially in young and male sheep and goats. For further study it would also be interesting to learn more about anthelmintic resistance in GIN and non-allopathic control options.

Keywords: Faecal egg counts (FEC), gastrointestinal nematodes, prevalence, small ruminants, West Africa