

Influence of horse age, breed and type of horse management on the community structure of strongylids (Nematoda: Strongylida) in domestic horses

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The strongylids comprise the most species-rich group of horse parasites worldwide. The biodiversity and structure of the strongylid community in domestic horses is influenced by various internal and external factors including climate, style of horse management, as well as the age and breed of horse. The aim of our study was to determine the influence of horse age and breed, and type of anthelmintic treatment program, on infestation with strongylids. A total of 197 domestic horses (*Equus caballus* L.) of seven breeds, aged five months to 22 years, were examined. The horses were kept on 15 farms with different anthelmintic treatment programs: rare or no treatment, 1–2 treatments per year, or 3+ treatments per year. Levels of horse infection (EPG) were examined by the McMaster method. Strongylids (82,767 specimens) were collected from horses after deworming with the macrocyclic lactone drug “Univerm” (0.2% aversectin C). The influence of various factors on the infections was analyzed using a multiple regression model with dummy variables.

Thirty-three strongylid species were found in the horses: eight species of the Strongylinae and 25 of the Cyathostominae subfamilies. The highest number of species (32) was found in horses aged 1.5 to four years, while the lowest (17) was found in those aged over 16 years. The effect of age on infection was significant, with young horses being more infected than older ones. The choice of anthelmintic treatment program also significantly influenced infection levels and the species composition of the strongylid community: horses with rare or no anthelmintic treatments had the highest strongylid biodiversity. The effect of horse breed on strongylid infection was insignificant. Our results suggest that the frequency of anthelmintic treatment has the a greater impact on infection and on strongylid community structure than age or breed of horse.