

Diatomaceous earth as an alternative parasite control in horses – does it really work?

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Due to the widespread anthelmintic resistance of horse's internal parasites, alternative (natural) deworming products have been sought for several years. One of such products is diatomaceous earth. The diatomaceous earth is a sedimentary rock consisting of fossilized remains of diatoms. The conviction of horse owners of the antiparasitic effect of diatomaceous earth, however, is not scientifically verified. Therefore, the purpose of this study was to determine the effect of diatomaceous earth on horses internal parasites.

Diatomite was added to the concentrate feed three times a week at 40 or 80 grams, depending on the weight of the horse. The experiment lasted 348 days (February 2017–February 2018), during which faecal samples were taken 11 times from 22 horses. The experiment was based on the fecal eggs count (FEC) of strongylids (Strongylidae). Horses in which, when conducting tests, parasites such as *Eimeria leuckarti*, *Anoplocephala* sp., *Parascaris* sp., *Oxyuris equi*, and strongylins from *Strongylus* species have been found, were excluded from the analyzes due to the administration of deworming drugs.

The highest prevalence was noted on day '0' of the experiment (sampling 1), when all horses were infected with strongylids. Throughout the study period, prevalence remained high, not falling below 80%. Prior to the administration of diatomite, the average FEC was 472 EPG (range 20–1640, ± 447). Throughout the experiment there were fluctuations in the average intensity of infection. In the next sampling there was a slight increase in the average value of EPG, and then a decrease. The highest mean FEC was noted in June and July. After the decline recorded in the next three sampling, in the last month of the study, i.e. February 2018, the FEC increased significantly to 687 EPG.

Due to the lack of data on the period of therapeutic activity of diatomaceous earth and the moment when regularly administered diatomite begins its antiparasitic activity, the efficacy of this substance was calculated, comparing average FEC in subsequent intakes (sampling 2–11) to FEC of sampling 1. The anthelmintic activity of diatomite was found only in October and December, however, efficacy did not exceed 36% in these months, and the test did not show a significant percentage reduction of eggs in horse faeces.