

Effects of Varying Anthelmintic Formulations on Hindgut Gastrointestinal Microflora in Horses

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Horses house a dynamic population of microbes within their hindgut that can be easily disrupted by stress, antibiotics and other medications. These microbes are necessary for proper nutrient digestion and utilization, as well as overall health of the horse. Horses are often given anthelmintic drugs to reduce internal parasite loads and although their modes of action are well known, there is a lack of knowledge of their effect on the gastrointestinal microflora in horses. The objective of this study was to monitor changes in hindgut microflora after treatment with two anthelmintic formulations. Ten Quarter Horse mares (8.0 ± 6.0) were randomly assigned to one of two treatment groups: Paste or Pellet. All mares received 0.5% BW of a 12% CP pelleted concentrate with mixed grass hay and water ad libitum. Mares in the Paste group received one dose of pyrantel pamoate paste and fecal samples were collected prior to treatment (d 0) and on d 1, 2, 3, 7, 10, and 14 post-treatment. Mares in the Pellet group received pyrantel tartrate pellets once daily for 14 days. Fecal samples were collected prior to treatment (d 0) and on d 1, 2, 3, 7, 10, and 14 of treatment as well as d 1, 2, 3, 7, 10, and 14 post-treatment. DNA was extracted from fecal samples and the concentration was determined using PicoGreen analysis. Samples were subjected to PCR with universal primers specific to the V2-V3 region of the 16S rRNA gene. PCR was successful in amplifying the 200 bp region of interest in all samples. PCR will be further subjected to DGGE and analyzed using BioNumerics software to compare changes in microbial diversity. Results will be completed by the time of the Denman Forum. It is expected that microbial diversity will be influenced by the type of anthelmintic used.