The time course of faecal sand removal from the gastro-intestinal tract of clinically normal horses following Psyllium supplementation

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Introduction
Psyllium has been utilised in horses for many years to treat mild cases of sand colic, however, there is disparity within the literature upon Psyllium’s efficacy and mechanisms of action solely as prevention of sand accumulation. The study determined the time course of faecal sand removal following Psyllium supplementation, establishing Psyllium’s efficacy and indicating the possible mechanisms as a sand clearance supplement.

Materials and Methods
Horses: Eight clinically normal horses of varying breed, height, sex and age, grazing on pasture based on sandy soil for 9 hours per day with free access to water.

Data collection: 90g of Psyllium was administered every day over a five day period. Faecal samples were collected at 7am and 7pm three days before Psyllium treatment as a control, five days during treatment (days 0-2 early treatment (ET), 3-5 late treatment (LT)), and for three days one month after treatment. Faecal collection was from beds of shavings though the gathering of a handful of faeces from each droppings pile present.

Sand Measurement: 50g of the faeces sample was obtained through a coning and quartering method (Crosby, 1995), measured on a digital scale. Sand was isolated from faces using a sand sedimentation evaporation method (Adapted from: Hustead et al, 2005), and weighed.

Results
Data was statistically analysed using Students t-test: paired two sample for means. There was a statistical difference between faecal sand output in Psyllium pre-treatment averages and ET and LT averages (p<0.05) (see tables and figures). There was no significant difference between Psyllium post-treatment averages and post-treatment faecal averages (p<0.05) (see tables figures).

Tables and Figures

Discussion and Conclusions
Whilst there was a significant increase in faecal sand output during ET (p<0.05), this was reversed during LT (p<0.05). Indicating that either Psyllium cleared the majority of sand in ET and therefore during LT there was less sand to remove, or that Psyllium increased the gut-transit time in ET and therefore faecal sand output, which then decreased in LT. No significant difference (p<0.05) was found between Psyllium pre-treatment averages and post Psyllium treatment (24-26 days), demonstrating that gastro-intestinal sand accumulation re-occurs after Psyllium treatment. Further longer term studies are required to assess the re-accumulation of sand following Psyllium treatment and the use of markers could indicate whether Psyllium temporarily increases gut transit time.

References