

ProEquine Trial on Digestion of Hard Feed

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Abstract

ProEquine is a probiotic that aids the performance and temperament of horses. ProEquine boosts the gut microorganism activity and also provides selected beneficial bacteria for enhancing the community of microorganisms that digest food and maintain the gut wall.

ProEquine stimulates zymogenic bacteria (fast-growing digestive bacteria) which enables the animal to get the most out of the feed. The stimulated bacteria are more likely to produce the beneficial acetic acid and propionic acid that the horse utilises for energy and protein rather than lactic acid which upsets the gut and lowers the gut pH. These same microorganisms also release minerals and produce vitamins required by the horse.

Introduction

Horses are characteristic of hind gut fermenting animals. While their small stomach can access energy from some of the starch in pasture and hay, most digestion takes place in the hindgut which comprises the caecum and colon. Feed resides here for most of the 30 hour or so digestion time.

Donaghys ProEquine targets improved digestion and gut wall condition. There have been many anecdotal reports of improved feed digestion in ProEquine treated horses. The effect seems to be quite marked in pasture fed horses that just receive supplementary hard feed or grain, perhaps due to their gut microorganism system not being so well tuned in to hard feed.

This trial was to empirically explore and quantify the issue of undigested feed in a scientifically controlled trial.

Materials and Methods

Ten horses were originally selected within a stable for the comparison but over the course of the trial, some horses left for racing commitments while other horses has distinctly different diets or changed diets during the course of the trial. The remaining 6 horses with comparable diets and present from Day 0 (18 October 2010) through to Day 11 (29 October 2010) included two horses remaining as control and 4 horses receiving ProEquine at 20 mL per head per day.

On Day 0 (before treatment) and Days 4, 7, 9 and 11, samples of fresh dung were collected from the separate yards of each horse. The dry matter was measured for each sample and a split sample was washed through a sieve leaving the undigested straw particles behind. The dry weight of the straw was divided by the dry weight of the split

sample (estimated from the dry matter percentage of the original sample). This gave a measurement of the straws in terms of percentage of total dry weight.

Results

Straw dry weight in the dung was generally around 50% of total dry matter indicating a high level of undigested straw. Both control and treatment experienced an increase in straw dry weight by Day 4. At all times after the trial commenced though there was a lower average percentage of straws in dung from the ProEquine treated horses. This was statistically significant ($p=0.05$) on Day 9. There was a trend of increasing difference over time with an average of 7% less straw pieces as a proportion of the dry matter over the four days measured.

Table 1: Straw as a percentage of total dry weight in dung from ProEquine horses compared to control.

Day	0	4	7	9	11
Control (Straw %)	46.7	59.1	57.7	54.7	54.3
ProEquine (Straw %)	48.8	54.1	51.6	46.5	45.5
Difference (Straw %)	-2	5	6	8	9

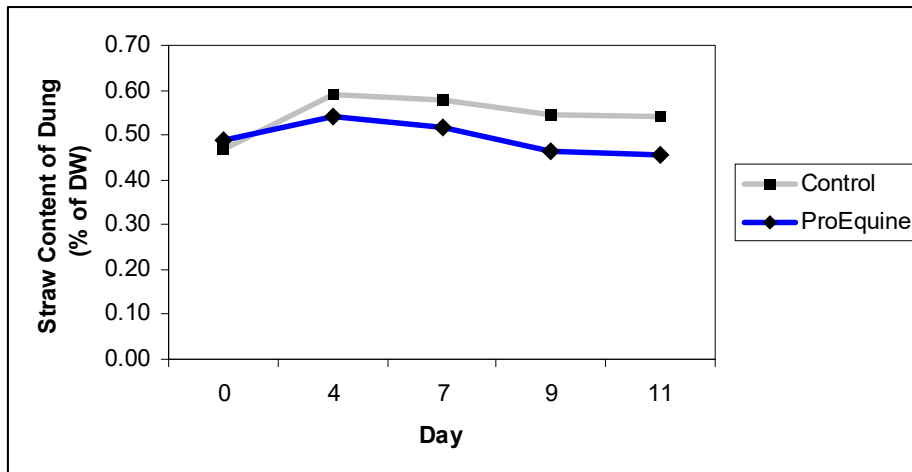


Figure 1: Straw as a percentage of total dry weight in dung from ProEquine horses compared to control.

Discussion and Conclusion

The horses involved were racehorses well used to diets of hard feed and presumably with reasonably well conditioned gut systems and gut microorganism communities for digesting hard feed. This makes the positive results in straw digestion more significant. If horses can digest more of their feed, there is more potential for them to derive energy and minerals from that feed and more potential for them to perform to their optimum capacity.