EAAP 2008, Vilnius, Lithuania, Session 28, Forages for horses

Preference of horses for grass conserved as hay, haylage or silage - Cecilia Müller and Peter Udén

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Wrapped forages, in the form of silage and haylage, have become more common in horse diets during recent years in Sweden. In general, the knowledge of wrapped forages as feeds for horses is scarce. The aim of this study was to investigate if different conservation methods would influence horse preference for grass conserved as hay, haylage or silage.

Silage, haylage with two different dry matter (DM) levels and hay was produced from the same grass crop. Silage and haylages were harvested in small square bales and wrapped with eight layers of white stretch film (360 mm wide). Hay was harvested in small square bales and was barn-dried. Silage (SIL) contained 300 g DM/kg, haylages contained 570 g DM /kg (HLL) and 680 g DM /kg (HLH), and the DM content in the barn-dried hay was 884 g/kg. The horses used in the study were of warm-blood type, varying in age, size (live weight) and in previous experience of eating silage and haylage, but all horses had previously been fed hay. The horses were kept on a late summer pasture during the experiment. The horses were offered the four forages simultaneously once daily for four consecutive experimental periods, each period consisting of 5 days. During experimental days, the horses were observed for two hours, and their first choice, effective eating time and forage consumption was registered. The number of times each horse tasted or smelled a forage, but left it in favour of another forage or activity (drinking, resting etc.), was also recorded.

Silage was consumed in largest amount (0.90 kg DM /day, s.d. 0.14) and had the longest eating time (28.4 min/day, s.d. 5.16). The horses consumed least of the hay (0.23 kg DM/day, s.d. 0.14) and hay also had the shortest eating time (6.8 min/day, s.d. 4.08). Both haylages were intermediate between silage and hay, following the DM content in the forages for both forage consumption and eating time. Silage was the first choice 72 of 84 times (85 %). Hay was never completely consumed, and silage was never left in favour of another forage after smelling or tasting it. In conclusion, forage conservation methods had an impact on horse preference, and in this experiment it was to the favour of silage even if the reason for this preference remains to be explained.

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Forage conservation methods and their influence on forage composition and the equine hindgut – Cecilia Müller

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The influence of forage conservation method on microbial and chemical composition in the forage, as well as and in the hindgut of horses fed the forages, was investigated. The same grass crop was used for production of hay (815 g DM/kg), haylage (550 g DM/kg) and silage (340 g DM/kg). The forages were fed to four fistulated experimental horses in a crossover study. The experiment consisted of one pre-period and three experimental periods, each period consisting of 21 days. Sampling was done on content from right ventral colon and of faeces. The fermentation kinetics of right ventral colon was also studied on two subsequent days in each period. Samples for the kinetic study were taken before and 2, 4, 8 and 12 h after the morning meal.

The microbial composition and fermentation profile of the forages was influenced by the different conservation methods employed. Silage differed from haylage and hay in more variables than haylage differed from hay. Although the different forage types had differences in composition, they had similar influence on microbial and chemical composition in both right ventral colon and of faeces at Day 21, with the exception of counts of *Streptococci* which were highest when horses were fed hay. However, counts of *Streptococci* were also affected by interactions among forage types and sampling locations.

Effects of sampling location were found for pH which was lower and counts of lactate utilizing and lactate producing bacteria which were higher in faeces compared to right ventral colon.

Fermentation kinetics in colon varied little among forage types and sampling times and no interaction between forage types and sampling times were found. This indicated that silage, haylage and hay had similar fermentation kinetics in right ventral colon of horses.

In conclusion, silage, haylage and hay produced from the same grass crop differed in forage composition, but produced similar responses in microbial and chemical composition in the hindgut of horses fed the forages.

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