INSULINAEMIC AND GLYCAEMIC RESPONSES TO THREE FORAGES IN PONIES

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Reduction of the hyperinsulinaemic response to feeding is central to the management of equine metabolic syndrome (EMS). The aim of this study was to compare insulinaemic and glycaemic responses to three commonly fed forages. Twelve ponies (11 mares and 1 gelding) of mixed breeds, mean age 9 years old (range 4-15) and median body condition score 7.0/9 (range 4.2-7.8) were recruited and maintained under identical management conditions. Following acclimation, a randomised crossover study was conducted. Each week ponies were fed 0.25% body weight as dry matter (DM) either as hay, soaked hay or haylage, or a combined glucose-insulin tolerance test (CGIT) was conducted. The glycaemic and insulinaemic responses to feeding were monitored over 5 hours. Area under the curve (AUC) for insulin (AUCi) was greater for haylage compared to hay (p=0.019) and soaked hay (p=0.002), and greater for hay compared to soaked hay (p=0.002). AUC for glucose (AUCg) was lower for soaked hay compared to hay (p=0.002) and haylage (p=0.003). Four ponies were classified as EMS positive based on their CGIT result. Compared to EMS negative ponies, EMS positive ponies had greater AUCi after hay (p=0.027), soaked hay (p=0.017) and haylage (p=0.042). In contrast, there was no detectable effect of EMS status on AUCg. On an equivalent DM basis, soaked hay produced the lowest and haylage the highest insulinaemic and glycaemic responses to feeding. The insulinaemic effects of all forages were greater in ponies with EMS. These data can be used to guide feeding of equids with EMS.