

THE DRY MATTER INTAKE OF GRAZING HORSES

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Reasons for study:

All diets for horses are formulated to meet energy requirements based on the premise that the dry matter intake of horses is 2.5% of their bodyweight. The majority of the UK's 1.2 million leisure horses are pasture fed for a greater part of the year (National Equestrian Survey 2006) and the abundance of nutritious herbage often exceeds their immediate nutritional needs resulting in acute and chronic overfeeding. Until recently it has been impossible to predict how much grass a horse eats and indeed the techniques to measure intake where not available.

However the alkane method has been validated as a method that can

be used to accurately measure how much grass a horse eats at pasture (Smith *et al.*, (2007). *Validating the alkane pair technique to estimate dry matter intake in equids. Journal of Agricultural Science, 145: 273-281*).

This study utilised this new technique to investigate how much grass horses eat when allowed to graze a pasture adlib.



Aims:

Herbage intake of horses is difficult to measure and thus, few data are available. The purpose of this study was to quantify the dry matter intake (DMI) of horses kept on typical UK pasture using the n-alkane technique.

Methods:

The n-alkane technique was used to quantify the DMI of ten horses (geldings, similar type and weight ~500kg) aged 3 or more, grazing a mixed sward of grass and clover (dry herbage mass 1741kg/ha, dry matter (DM) 230g/kg, crude protein 101g/kg DM, neutral detergent fibre 828g/kg DM and acid detergent fibre 691g/kg DM) given no other feed. C32 labelled Mini Weetabix® were dosed three times daily to each horse at eight hourly intervals for 12 days. Faecal and sward sampling began on the eighth day after the start of dosing and continued to the final day (day 12).

Faecal samples were collected daily from each horse for five days (days 8-12) and were pooled at the end to provide a single faecal sub-sample per animal. The sward area grazed was sampled twice daily for five days (days 8-12). Faecal and sward samples were dried in a forced-draught oven (60°C). Dried, ground faecal and herbage samples were analysed for n-alkane. C31/C32 and C33/C32 alkane pairs were used to calculate duplicate estimates of DMI for each animal; a mean DMI value was then calculated.



Results:

The estimated DMI was between 15.9 and 26.9kgDM/day or 3.2 and 5.2% of mass. These high intakes were reflected in the mean daily change in mass of the horses that averaged 1.44kg/day (1.0 - 3.7kg).

Conclusion and practical significance:

Equids can become obese whilst grazing; Equine Metabolic Syndrome is characterised by the development of obesity, insulin resistance and the risk of laminitis, thus determination of factors affecting grass DMI by equids is paramount.

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