Concurrent Session 15

Effect of chaff quantity and length on rate of intake in horses fed a concentrate diet

TE Campbell[1], PA Harris[2], HC Doughty[1], MN Sillence[1]

[1] School of Agriculture and Veterinary Sciences, Charles Sturt University, Australia, NSW 2678

[2]Equine Studies Group, WALTHAM Centre for Pet Nutrition, Leicestershire LE14 4RT, UK

Background - Grains are commonly fed to horses that have a high energy requirement. However, large quantities and fast consumption of grain can result in disorders such as laminitis, colic, tying-up, gastric ulcers and fractious behaviour. Thus, controlling the rate of grain intake is an important aspect in managing equine nutrition.

Objectives - To measure the relationship between chaff quantity and length and the rate of intake of oats.

Design - Each morning, six geldings (BW 479 ± 18 kg) were fed a constant meal of oats at 3 g/kg bodyweight in combination with either longer ground wheaten chaff (4 cm), or short chopped wheaten chaff (< 2 cm) at one of five different addition rates in a random latin square design. Ryegrass/clover hay was provided each afternoon to meet maintenance energy requirements.

Outcomes - Rate of intake varied with chaff quantity (P <0.001, ANOVA for repeated measures), but was not affected by chaff length. A maximal decrease in rate of intake occurred at the addition rate of 50% chaff.

Chaff addition rate (%)	7.5	15	30	50	60
Rate of intake (g/min)[1]					
Short chaff	47.24 ± 3.17	41.75 ± 3.08	42.25 ± 3.61	31.26 ± 1.82	39.32 ± 2.09
Long chaff	47.39 ± 2.78	41.85 ± 3.25	40.57 ± 3.38	32.53 ± 2.54	35.19 ± 1.94

[1] Mean ± SE

Conclusion - Relative to earlier studies a large amount of chaff was required to decrease rate of intake. It is not clear whether this is due to meal size, chaff type, or chaff processing method. Chaff length appeared to have no effect on rate of intake. However, the long chaff was ground and not chopped, which would have decreased the surface area and chewing required for ingestion. Further research is required to standardise a method of measuring rate of intake and to explore differences in chaff properties.