The ‘Evolution’ of the Slow Feeder

Dr Andrea Ellis from Unequi Ltd, a nutritionist specialised in food intake behaviour was one of the pioneers of the slow feeding movement. In this article Dr Ellis reveals the science behind it, uncovering how and why the slow feeder evolved.

Anyone who works in a stable yard is aware of the ‘commotion’ pre and during feeding times. Horses get very excited and develop a quite different temperament, displaying ‘unwanted’ behaviours such as kicking doors, shaking heads, even trying to bite or grab passers by.

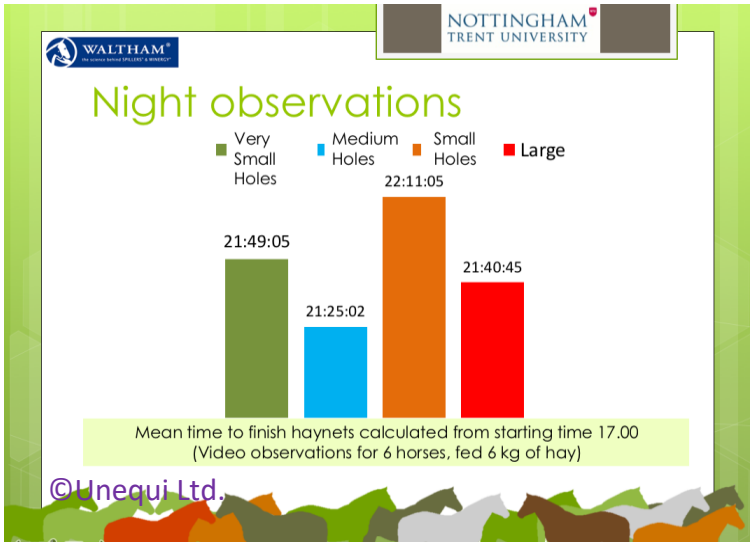
This behaviour has been described as ‘aggressive’, ‘feed-envy’ or just excitability, but the stress levels of the animal clearly rise considerably during this time.

Feeding bins ready to be washed out – Daily routines in big horse yards – the more horses there are, the more time it takes to feed them all, resulting in longer periods of agitation.

Dr Andrea Ellis, thought this behaviour was partially linked to horses experiencing an enforced over night fasting period as forage was depleted early in the night.

In addition, concentrate feeding times at two regular periods of the day soon become routine for horses and a focus for agitation and excitement. Dr Ellis along with colleagues from Nottingham Trent University conducted a study using various haynets to slow this intake behaviour down.

The results showed that many horses have completed their forage ration well before midnight, waiting up to 9 hours for their next feed.



Ellis et al. (2014) showed that most horses finish their hay ration at around 10:00 pm at night.

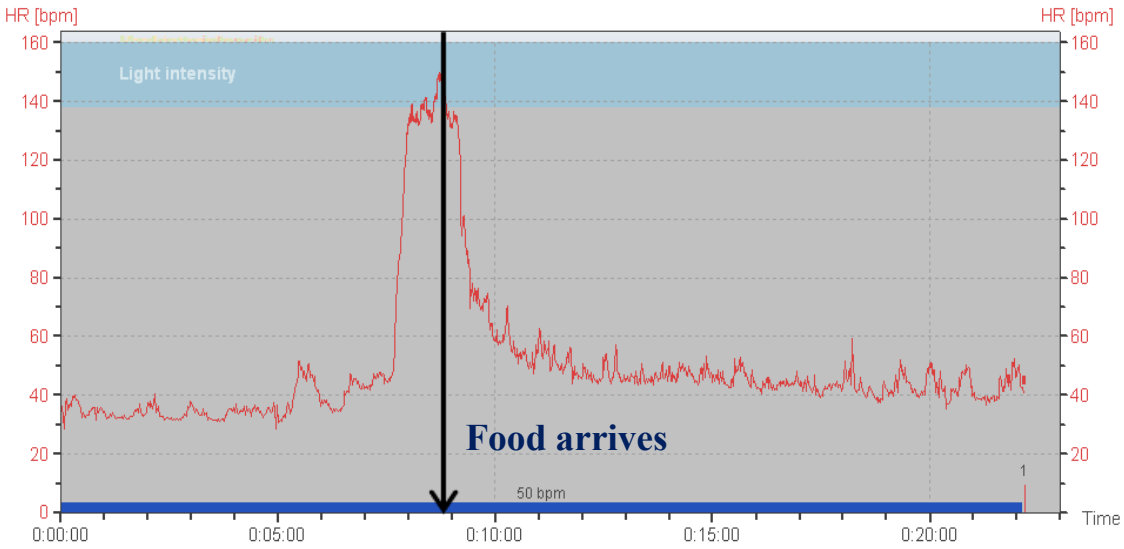
Dr Ellis teamed up with Sarah Hallam, now Programme Leader for the BSc Equestrian Psychology at NTU, then an MSc Student in Equine Science.

Ms Hallam had previously researched methods to reduce stress in horses and also wanted to investigate the actual stress perceived by horses during feeding time and how to reduce this. So they developed a research project to measure and tackle these problems.

Sarah Hallam during her first research project, which aimed to reduce stress in horses kept in single confinement.

The need to measure stress levels during feeding time was identified and the idea of creating a feeding system which would increase feed intake times while reducing stress at set feeding points.

The concept of a continuous slow feeder was born.



Heart rate recording of a Horse from 8 minutes before arrival of morning feed

Now, of course this is not a 'highly' original or new idea, many a horse owner out there has devised systems to slow their equine, chewing machine down. It's important to balance fulfilling our horses 'requirement' to chew for at least 12 hours/day with the fact that the forage we provide often supplies more energy than they actually require (=getting fat).

Example of a homemade system, to increase forage intake time (with permission M.v. Dierendonck; Photo ©Unequi).

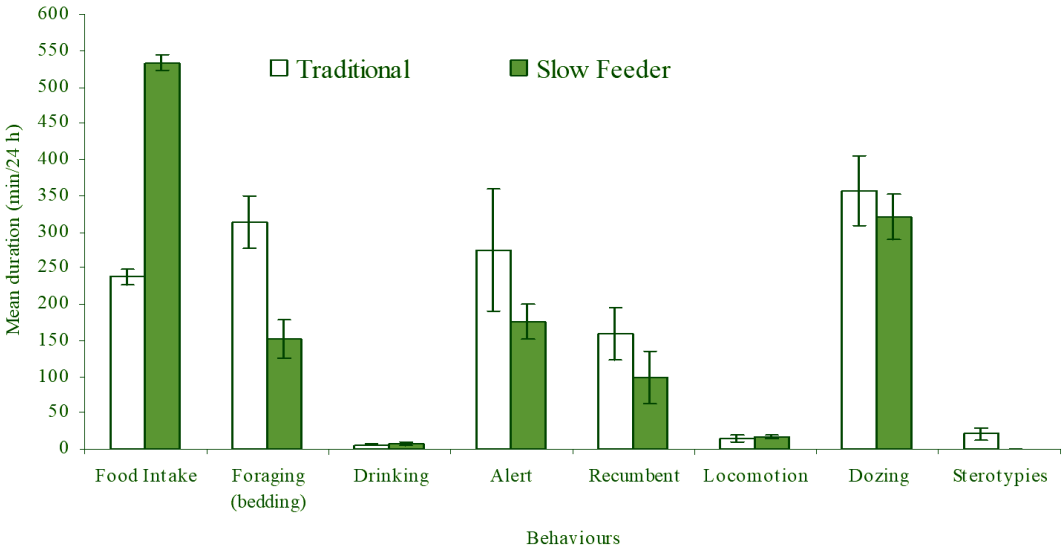
So, the research team wanted to 'measure' the effect of abandoning feeding times on stress levels and time budgets in horses. After exploring various existing options, it was decided to 'develop' their own forage feed bin system. The slow feeder bin had to allow for a natural feeding position with the head down, while making it more difficult to extract the forage, slowing horses down over a period of time.

This alone of course would not fully fulfil the aim (reducing stress as well as increasing feed intake times). In order to do this feed times had to be 'eliminated'. Horses were kept in a separate yard away from the feed-room and away from any other horses, which were fed concentrate feed. The first few weeks their normal routine with two daily feeding times was upheld. Heart rates were measured and behaviour was observed carefully during the period. Then the new feed bins were installed and screwed to the floor. The horses were used in the riding school of the University Campus and received around 1 kg of high fibre

pellets, twice a day. To eliminate feeding times and increase food intake behaviour 'layered slices' were put in the feed bin.

Filling up the feed bin with a total ration to keep horses busy for long periods of time, high fibre pellets which carry mineral/vitamin supplement are mixed within the layers.

The idea was that there was always some forage available, so some low energy soft straw chaff was added between hay layers. When horses left the stable for a riding lesson or other purpose, the bins were re-filled quickly and quietly. Within a few days the horses got used to the new routine and there was no more commotion or stress around previous feeding times. Again heart rates and behaviour were measured. Horses spent a lot more time on feed intake behaviour and displayed more natural resting behaviour at night.



Differences in time spent on various behaviours between the traditional (2 feed times per day) and Slow Feeder method (Results: Hallam et al., 2012)

The use of the slow feeding bin had a clear beneficial impact on stabled horses behaviour and stress levels.

This research was presented by Dr Ellis and Ms Hallam at the European Workshop for Equine Nutrition in 2012. With the Haygain team in the audience this marked the beginning of Haygain's journey down the route of developing a commercially viable slow feeder and eventually the Haygain Forager was born.

References:

Hallam, S., Campbell, E. P., Qazamel, M., Owen H. and A. D. Ellis 2012. Effects of traditional versus novel feeding management on 24 hour time budget of stabled horses, In: Forages and Grazing in Horse Nutrition, EAAP Publication No. 132, Wageningen Academic Publishers, pp. 319-321

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