Pre-feeding behaviour in UK leisure horses and associated feeding routine risk factors

J Hockenhull* †‡ and E Creighton ‡§

† School of Veterinary Sciences, University of Bristol, Langford House, Langford, Bristol BS40 5DU, UK
‡ Department of Biological Sciences, University of Chester, Parkgate Road, Chester CH1 4BJ, UK
§ School of Agriculture, Food and Rural Development, Newcastle University, Newcastle upon Tyne NE1 7RU, UK
* Contact for correspondence and requests for reprints: Jo.Hockenhull@bristol.ac.uk

Abstract

Many horses display unwanted behaviour prior to receiving concentrate feed or forage. These behaviours have received relatively little scientific attention as a distinct group of equine behaviour problems and risk factors for their performance have not been quantified. The objective of this study was to generate data on the diet of UK leisure horses, the feeding practices employed by their carers, and the prevalence of behaviour problems seen prior to feeding. A convenience sample of leisure horse carers were surveyed via a self-administered internet survey. Each carer provided data for only one horse, and to minimise recall bias was asked to report details of their horse’s feeding routine over the week prior to completing the survey. Recruitment was spread over twelve calendar months. The survey was completed by 1,324 respondents, each reporting data for an individual horse in their care. Pre-feeding behaviour problems were common within the sample and were reduced by Principal Components Analysis into three components labelled: aggression; frustration; and stereotypies. While the specific risk factors associated with these problems differed, they fell into four distinct themes: how the horse is fed; the use of nutritional supplements; exercise and stabling; and the performance of oral investigative behaviour. The risk factors for pre-feeding behaviour problems identified in this study raise concerns about the way domestic horses are currently fed and managed. In conjunction with published empirical evidence they indicate that the welfare of domestic horses may be improved by adopting a feeding regime and management system more suited to their physiological and behavioural needs.

Keywords: animal welfare, diet, horse, management, nutritional supplements, stereotypies

Introduction

Horses evolved to consume large amounts of low quality forage by trickle feeding for approximately 16–18 h per day (Davidson & Harris 2002; McGreevy 2004) and they rarely fast voluntarily for longer than 3–4 h (Ralston 1986; Davidson & Harris 2002). Yet many domestic horses are fed restricted amounts of forage supplemented by high energy/low fibre cereal-based feeds provided as large, discrete meals (Davidson 2002). The disparity between the horse’s evolutionary requirements and the feeding practices for domestic equines can compromise the welfare of domestic horses at both a physical and psychological level (Ralston 1986; Davidson & Harris 2002).

Feeding large quantities of cereals, intermittent feed deprivation and an imbalance of concentrates and forage have been implicated in the development of physical conditions such as laminitis, gastric ulcers, colic and other gastrointestinal disturbances (Rowe et al 1994; Murray & Eichorn 1996; Tinker et al 1997; Davidson 2002; Archer & Proudman 2006). Subtle behavioural changes may result from the pain associated with these conditions and the horse may show increased sensitivity to touch or changes in responsiveness, and become depressed or cantankerous (Davidson & Harris 2002). Diet can also have a more overt effect on the behaviour of domestic horses (Harris 2005) and inappropriate feeding practices have been implicated in the development of oral stereotypies (McGreevy et al 1995; Waters et al 2002), wood chewing (Marcella 1988) and excitable or unwanted behaviour when the horse is ridden (Holland et al 1996; Kronfeld et al 1999; McGreevy 2004).

The arrival of food becomes a very exciting and rewarding event for stabled horses, and consequently feed times are periods of high arousal and frustration (Mills & Clarke 2002). The unnaturally high energy content and palatable taste of many concentrate feeds may also act as super-stimuli giving rise to high levels of anticipation prior to feeding (Goodwin et al 2005). This anticipation may be expressed in the form of repetitive redirected behaviour, eg kicking the stable door (Flannigan & Stooky 2002), behaviour signifying excitement and arousal, eg pawing (Collery 1974) and stereotypies such as weaving (Cooper et al 2000; McAfee et al 2002; Clegg et al 2008).