Preference for heights of feeding troughs in mares: a pilot study

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Abstract

Preferences for the height of feeding troughs of seven mares were evaluated and, as awareness of surroundings when feeding is adaptive for horses, the relationship between preference responses and attention behaviours was also assessed. First, feeding troughs at four heights (0, 25, 50, and 75 cm) were provided for 16 days, and the amount of time animals ate from each height option was measured daily. These data were used to determine the preferred/non-preferred options for each individual. An overall preference for heights of 50 and 75 cm was detected, but responses showed significant individual variation. The same animals were subsequently observed, when feeding from preferred (four days) or non-preferred (four days) trough heights, while their behaviours were recorded. Moving ears/head (attention behaviours) occurred more frequently when feeding from preferred heights of feeding troughs. We concluded that to ensure better welfare conditions for the mares in this study, it was important to consider the individual variation of such preferences if possible, however, by using troughs positioned at 50 or 75 cm, the general preference could be assured. Moreover, when feeding from their preferred heights, the study mares paid more attention to their surroundings than when feeding from their non-preferred height and thus it is likely that they defended their preferred options more. However, further studies are needed to evaluate the generalisability of these findings. We have demonstrated a methodology to assess mares’ preferences and provided some preliminary data on the relationship between preferences/non-preferences and the possible emotional states of mares.

Keywords: animal welfare, attention, feeding, mare, Preference Index, trough

Introduction

Identifying potential welfare indicators can be ambiguous (for a review, see Volpato et al 2007, 2009), and selecting which one is preferable is difficult. Dawkins (2006, 2008) has proposed more attention be paid to animals’ needs, ie that the “point of view” of animals should be considered and Volpato et al (2009) have suggested welfare is enhanced when animals find themselves in a situation that has been chosen freely. There are numerous examples in the literature of preference tests that allow animals to choose freely between two (pairing tests) or more options (multiple-choice tests). For example, preference for sexual partners (Ryan 1980; Gonçalves & Oliveira 2003; Liao & Lu 2009), substrates (Webster & Hart 2004; Galhardo et al 2009; Matsui et al 2009), and environmental temperatures (Girguis & Lee 2006; Holcomb et al 2014).

While there are studies that have sought to evaluate welfare indicators and conditions for horses (Waran & Randle 2017), their preferences have only ever been investigated superficially. For example, while there have been studies into horses’ preferences for different feed types (McCann & Hoveland 1991; Cairns et al 2002; Müller & Udén 2007; Allen et al 2011), they have been mostly concerned with preferences for commercial foodstuffs. Moreover, horses’ preferences for different food trough height are yet to be studied and no consensus exists as to the best way of feeding horses using troughs. Luz et al (2015) tested the influence of distance, proportion, and height of troughs on agonistic behaviours in horses and found that longer distances and greater height reduced the frequency of kicks regardless of the social stability. A possible explanation for this result is that troughs positioned at a greater height and longer distances allow for a wider field of vision, which may create less of a sense of vulnerability during feeding. On the other hand, Wheeler (2006) posited such positioning of the trough to be unnatural, as the horse is a grazing animal. If true, this would justify positioning troughs at ground level; however, horses in a breeding environment