

A pilot study on horses' behaviour and distance travelled in a "Paddock Trail" husbandry system

Astrid Küllmar, Uta König v. Borstel

With most modern horse husbandry systems, horses' locomotory behavior is quantitatively as well as qualitatively considerably altered, compared to the slow and continuous movement shown by horses living under conditions similar to those they have evolved under. This lack of locomotion as well as the change in quality of locomotion is thought to be responsible for a number of health issues seen in present day horses. The aim of the present study was to assess behaviour and particularly locomotion in horses kept in a husbandry system specifically designed to stimulate locomotory behaviour in horses. This type of husbandry system is named "Paddock Trail", (PT) but is also known as "Paddock Paradise", and the key concept of this husbandry system involves strategic placement of small portions of feed along a track which is an integral part of this husbandry system. For the present study, 11 horses, not used for riding or other activities and kept in one Paddock Trail husbandry system were available. Seven horses used in equine assisted therapy lessons and housed individually in conventional paddock-boxes (IB) served as a control group. Both groups of horses were composed of a similar mixture of horses with regard to age and breeds. Using time-sampling, behaviour of the horses was observed in 8 bouts (4 morning and 4 afternoon sessions) of 5 hours each. In addition, the average speed and distance covered was assessed in 3 (PT) and 5 (IB) horses, respectively, using a GPS system. Since the GPS signal is blocked by buildings and reliable recording would not be possible indoors, the IB horses were recorded

only during their work in the therapy sessions. The behavioural observations revealed that the PT horses allocated a larger proportion of time to locomotory behaviour compared to the IB horses (on average 12 vs 3% of the 5 h observation periods; $P < 0,05$), and in turn resting behaviour was reduced in PT horses compared to IB horses (30 vs. 46%; $P < 0,05$). Time spent grazing (10 vs. 8%) and feeding other than grazing (47 vs. 44%) did not differ significantly between the two groups of horses in the two different husbandry systems ($P > 0,1$). In addition, resting and feeding behaviour was influenced by social rank, such that higher ranking horses spent more time feeding and less time resting compared to horses of lower ranks (both $P < 0,05$). Within the 5 hour observation periods, horses of the PT system covered on average a distance of 2,7 km at an average speed of 0,5 km/h. In comparison, IB horses covered during their work in the therapy sessions on average a distance of 2,1 km at an average speed of 3,6 km/h for a duration of 35 minutes. Although the confounding of groups of horses with husbandry system and although the GPS data does not allow for a direct comparison of the husbandry systems and does not cover the entire 24 hours of a day, these data indicate along with the behavioural observations that the PT system stimulates the horses to increase their locomotory behaviour.

Keywords horse, husbandry, paddock trail, locomotion, behaviour

Corresponding author: