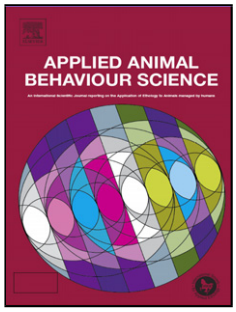

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TITLE PAGE

Applied neurophysiology of the horse; implications for training, husbandry and welfare

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REVIEW PAPER

Abstract

Understanding the neural circuits underlying equine behaviour has the potential to help optimise strategies of husbandry and training. This review discusses two areas of neurophysiological research in a range of species and relates this information to the horse. The first discussion focuses on mechanisms of learning and motivation and assesses how this information can be applied to improve the training of the horse. The second concerns the identification of the equine neurophysiological phenotype, through behavioural and genetic probes, as a way of improving strategies for optimal equine husbandry and training success. The review finishes by identifying directions for future research with an emphasis on how neurophysiological systems (and thus behaviour) can be modified through strategic husbandry. This review highlights how a neurophysioloigical understanding of horse