

Equine personality traits are of major importance to training success as well as equine welfare, but at present, suitable assessment methods for use in genetic selection are scarce. The aim of the study was to select the most suitable traits out of a variety of behavior traits assessed experimentally during breed shows for incorporation into breeding horse evaluations. For this purpose, mature ($n=48$) American Quarter Horses and foals ($n=198$) were observed during various procedures during their participation in breed shows. A variety of behavior traits considered to be relevant for ease of training or safety were recorded and evaluated using a linear scale ranging from -2 (e.g. complete absence of the behavior pattern) to 2 (frequent occurrence of the behavior pattern) by an experimenter. Most traits deviated from a normal distribution (Kolmogorov-Smirnov: $P<0.01$), indicating that prior selection for these traits either at the genetic or phenotypic level have already taken place (Kolmogorov-Smirnov: all $P<0.0001$). Foals that were perceived as more 'bright' by the observers, carried their tail higher ($r_{246}=0.2$, $P<0.01$), kept a larger distance from their dam ($r_{161}=0.4$, $P<0.0001$) and showed more exploration of the environment ($r_{184}=0.2$, $P<0.001$). Temperament correlated strongly with calmness ($r_{246}=0.7$, $P<0.0001$) and the overall impression during free-running (high-spirited, $r_{246}=0.8$, $P<0.0001$). In view of these results, reducing the number of traits to a few of the most relevant and objectively assessable traits appears to be justified. Ultimately, identification of, and genetic selection for, suitable behavior traits might ease training and improve both equine welfare and human safety.

Keywords: personality; character; temperament; human-horse interaction; breed show

15

The Australian equine industry

J. LOY*, H. IP, R. THOMPSON

School of Animal and Veterinary Science, Charles Sturt University, Wagga Wagga, 2678, NSW, Australia

*Corresponding author: jloy@csu.edu.au



Since the introduction of horses in 1788, the equine industry has developed to be one of the top ten industries in Australia with an estimated contribution of over 6.3 billion dollars to Australia's Gross Domestic Product. The Australian equine industry comprises of a range of disciplines including racing, dressage, eventing, showjumping, pony club, cutting, reining, stock work, polo, polo cross, drafting and pleasure riding. There are few countries where the Thoroughbred has played such a significant part in the development of a national identity and culture as the race horse in Australia. Due to the high wastage rates in the horse racing industry, community concerns are increasing over animal welfare. These wastage rates reflect on the industry as a whole and in recent years the development of re-homing, re-training and rehabilitation centres has provided an avenue for retired race or performance horses into a new career. These enterprises may assist in a decrease in overall wastage and have been adopted well beyond the Thoroughbred racehorse. The development of Equine Welfare Strategies throughout disciplines is designed to shape a culture in which the welfare and safety of horses is paramount. These strategies are developed through industry collaboration, extensive consultation with industry stakeholders and experts and are established to set strong objectives and priorities for the future. The introduction of these strategies may increase understanding of animal welfare requirements and have a positive change in an industry where horses are so ingrained in the nation's culture and history.

Keywords: equine industry; welfare; wastage; economy; culture

THEME: CHANGE

SUBTHEME: MEASURING EQUINE BEHAVIOR

16

Through their eyes: the challenge of assessing equine emotional state

N. WARAN^{1,*}, H. RANDLE², L. PRESHAU³, G. PEARSON⁴, C. HALL⁵

¹ Eastern Institute of Technology, Hawke's Bay, New Zealand

² School of Animal and Veterinary Science, Charles Sturt University, Wagga Wagga, 2650, Australia

³ The Horse Trust, Princes Risborough, Bucks, HP27 0PP, UK

⁴ Royal (Dick) School of Veterinary Studies and Roslin Institute, University of Edinburgh, Easter Bush

⁵ School of Animal, Rural and Environmental Sciences, Nottingham Trent University, Brackenhurst Campus, United Kingdom

*Corresponding author: nwaran@eit.ac.nz



Animal welfare assessment has traditionally relied on measures of physical health and changes in behavior and physiology related to negative emotional states such as pain and stress. However, it is now widely accepted that good welfare is not simply the absence of disease or negative experiences, but also the presence of positive experiences such as pleasure. The development of an 'Equine Quality of Life' (EQoL) framework is essential for providing horse owners, riders and practitioners with an evidence-based instrument for assessing the overall life experience of horses. It is therefore necessary to be able to appraise both the physical and mental well-being of a horse in relation to situations and events that it experiences during its working lifetime. To date the emotional significance of the animal's response has been overlooked. A seemingly objective physiological measures, heart rate, has have been found to reflect arousal level rather than emotional valence, and furthermore behavioral signs do not always reflect physiological responses. However, assessment of motivation to approach or avoid as an indicator of positive/negative response, as well as fear- and aggression responses may be better behavioral indicators of emotional state. Methods used in non-equid species such as cognitive bias testing have yet to be used successfully in horses. The characterization of equine emotional response in terms of arousal level and valence, using validated equine-based indicators can lead to the development of an Equine Quality of Life (EQoL) framework against which the impact of different situations and experiences on horses during their lives.

Keywords: emotion; mental state; cognition; behavior; Equine Quality of Life

17

The effect of different bits, bridles and rein handling on rein tension and muscle trigger point reaction

S. KUHNKE*, U. KÖNIG VON BORSTEL

University of Kassel, Kassel, Germany

*Corresponding author: s.kuhnke@arcor.de



Muscular condition and equipment are considered to influence equine performance, however, their interactions with rein tension have not been investigated. The study aim was to investigate the effect of different bits, bridles and the horse's muscle trigger point reactions on the magnitude and symmetry of rein tension in Western (W, 61 rides) and English (E, 46 rides) riding styles. Mean rein tension was measured in 65 riders and 88 horses in walk, trot and canter in both directions with either snaffle bits or curb bits. Twenty eight muscle trigger points (irritable spots in the fascia surrounding skeletal muscles) were assessed bilaterally and categorized according to the reaction to manual pressure (reaction level 0-3). Mixed-model analysis