

## Feasible animal-based indicators for assessing equine welfare

Current status of the development of an animal welfare assessment system for horse husbandries  
as a part of a sustainability management system

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### Introduction

Are horses doing well in their husbandries? For the first time the answer shall be given objectively by an integral on-farm welfare assessment system for horse husbandries. A current research project at the Technical University Munich evaluates indicators for well-being, pain and suffering in horses in order to develop a welfare assessment system (Baumgartner and Zeitler-Feicht 2013, 2014a, 2014b, 2015, Zeitler-Feicht et al. 2015). The research project is professionally supported by horse husbandry experts from academics, industries as well as leading organizations for horse owners and veterinarians.

The aim of the project is to develop a welfare assessment system for all horse husbandry systems which can be applied both for sport horses and for leisure horses. It is based on national animal welfare standards (BMELV 2009) and does take sustainability into consideration. Animal-based indicators are completed with resource-based indicators if necessary. It is stipulated that indicators are valid, reliable and feasible.

Welfare criteria were formulated for the two principles „good health“ and „behavioural demands“ (see figure 1 and 2). Each has to be represented by at least one indicator.



Fig. 1: Welfare Criteria for „good health“



Fig. 2: Welfare Criteria for „behavioural demands“

The principle „behavioural demands“ aims at the possibility for horses to practise species-specific behaviour. It is gathered to what extent the housing conditions allow the horses to live out and show species-specific behaviour. Furthermore in the present studies the frequency of selected behaviours including abnormal behaviour were collected in precise timeframes.

Potential indicators for assessing equine welfare on-farm were selected by study of literature and field tests. The field tests included direct observations on free-ranged horses, horses in group-housing systems and single-stabled horses. The following section presents selected indicators that are feasible for assessing equine behaviour on-farm.

### Feasible behavioural indicators for well-being

The literature research revealed that „being together“ is linked with affiliative behaviour. It includes „resting together“, „foraging together“ and additionally „walking together“. Horses do have a strong need for social bonds. „Being-together“ amongst horses must be voluntary and not caused by bad weather conditions or lack of space. Therefore the context must be

considered. For temporary direct observations the frequency in group-housing systems is sufficient ( $0.57 \pm 0.67$  per horse per 20 minutes). That's why in our study „being-together“ is considered as a feasible indicator for well-being for horses in permanent or temporary groups. It is intended to conduct further studies on its validity.

Other behaviours such as „social play“ is not only linked with positive emotional states in adult horses. Several studies showed that horses use „social play“ as a stress relief. However, it is too seldom to collect in an on-farm assessment system. Because of the lack of feasibility and validity we excluded „social play“ as an indicator for well-being.

### Feasible behavioural indicators for suffering

Horses show „abnormal behaviour“ in distress, frustration, deprivation or conflict situations. The present studies showed a relatively high frequency in single-stabled horses ( $3.3 \pm 6.45$  per horse per 20 minutes). Hence „abnormal behaviour“ is a feasible and valid indicator for suffering. However, established stereotypes need to be excluded, because they may indicate a previous welfare status rather than the current welfare status.

Horses use „agonistic behaviour“ to regulate social relations, to defend themselves or to defend resources. If husbandry or management is inadequate, „agonistic behaviour“ increases and thereby the frequency of injuries caused by social conflicts. A high frequency of „agonistic behaviour“ indicates a high aggression level in group-housed horses and therefore distress and suffering. The mean frequency of group-housed horses is sufficient for temporary observations ( $2.6 \pm 2.26$  per horse per 20 minutes). As a result „agonistic behaviour“ is a feasible and valid indicator for suffering. Further studies need to be done on the scoring and severity.

### Key words

Animal-based indicators  
Equine welfare  
Being-together  
Abnormal behaviour  
Agonistic behaviour

### References

Baumgartner M. & M. H. Zeitler-Feicht (2013): Entwicklung eines Bewertungssystems zur Beurteilung der Tiergerechtigkeit von Pferdehaltungen als Bestandteil eines Nachhaltigkeitsmanagementsystems. KTBL Schrift: Aktuelle Arbeiten zur artgemäßen Tierhaltung 503, 226 – 227.

Baumgartner M. & M. H. Zeitler-Feicht (2014a): Indikatoren für Tierwohl beim Pferd. 7. Pferde-Workshop Uelzen 2014. DGfZ-Schriftreihe Heft 64, 161 – 166.

Baumgartner M. & M. H. Zeitler-Feicht (2014b): Entwicklung eines Bewertungssystems zur Beurteilung der Tiergerechtigkeit von Pferdehaltungen als Bestandteil eines Nachhaltigkeitsmanagementsystems. 9. Niedersächsisches Tierschutzsymposium in Oldenburg, Hrsg. Nds. Ministerium für Ernährung, Landwirtschaft und Verbraucherschutz, 37 – 42.

Baumgartner M. & M.H. Zeitler-Feicht (2015): Eignung ausgewählter tierbezogener Indikatoren zur Beurteilung der Tiergerechtigkeit von Pferdehaltungen hinsichtlich Praktikabilität. In: Tagungsband der Deutschen Veterinärmedizinischen Gesellschaft e.V. (DVG), Fachgruppen „Ethologie und Tierhaltung“ sowie „Tierschutz“, Verlag der DVG Service GmbH, Gießen, S. 182 - 192.

BMELV (2009): Leitlinien zur Beurteilung von Pferdehaltungen unter Tierschutzgesichtspunkten. Bundesministerium für Ernährung, Landwirtschaft und Verbraucherschutz. Sachverständigengruppe tierschutzgerechte Pferdehaltung.

Zeitler-Feicht M.H., Frank V., Ramoser A., Seiler S., Girisch C., Baumgartner M. (2015): Anhand welcher Verhaltensweisen lassen sich Rückschlüsse auf das Wohlbefinden von Pferden ziehen? In: Tagungsband der Deutschen Veterinärmedizinischen Gesellschaft e.V. (DVG), Fachgruppen „Ethologie und Tierhaltung“ sowie „Tierschutz“, Verlag der DVG Service GmbH, Gießen, S. 148 - 156.

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