

# The welfare of working horses in developing countries

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## Introduction

Working horses are the most important source of agricultural energy and transport for resource-poor communities in both urban and rural areas of developing countries (Biffa & Woldemeskel, 2006; Swann, 2006). The 90 million equines in the developing world comprise 80% of the world's equine population (Pritchard *et al.*, 2005; Wilson, 2002). Horses provide low-cost transport, agricultural power and, in many cases, the sole means of generating income for their owners, many of whom live in poverty. Their use in these contexts is expected to continue (Biffa & Woldemeskel, 2006). While healthy, well-managed horses are assets, many owners are too poor to access information about animal care and are often remote from veterinary care (Pearson & Krecek, 2006; Wilson, 2002). Welfare of working horses in developing countries is crucially important, not only for the health and survival of those horses but also for the livelihoods of people dependent on them. This paper reviews recent literature that identifies welfare issues for working horses in developing nations and explores possible avenues for progress.

## Discussion

Dehydration and hyperthermia are major welfare threats to working horses in developing countries, where work continues in extreme temperatures (Pritchard *et al.*, 2006). Many owners lack the resources or knowledge to improve conditions for heat-stressed horses, and reliance on external sources such as veterinary advice can delay treatment, or result in their abandonment (Biffa & Woldemeskel, 2006; Pritchard *et al.*, 2006). In their study of 60 horses, Pritchard *et al.* (2006) aimed to validate a set of behavioural signs of equine heat-stress and determine the usefulness of skin-tenting and clinical measurements for dehydration in working horses. Similarly, a study by Swann (2006) aimed to develop a welfare assessment protocol based on physical and behavioural observations of working horses. Both studies were designed to give owners the tools to assess their own horse's welfare. In remote resource-poor areas, attempts to improve working horse welfare must be practical and involve direct observations of the animal's immediate condition (Pritchard *et al.*, 2005).

Pritchard *et al.* (2006) found that skin-tenting was not an accurate method of predicting clinical dehydration because horses with low body-condition scores (BCS) (those with BCS=1 comprised 33 of 60 horses in the study) were more likely to show positive skin tenting regardless of their behaviour or blood results. Haematology results, such as packed cell volume (PCV) and plasma protein (TPP), were often confounded by underlying poor health and were ineffective for obtaining immediate information about the horse's hydration. These tests were also impractical for use out in the field. PCV and TPP are expected to be higher than normal in dehydration, but many horses displayed low results (with a mean PCV of 27.1%). This was attributed to severe malnutrition and helminthiasis, which predisposed them to anaemia and hypoproteinemia. The authors concluded that behavioural signs of dehydration and heat-stress were more valid than skin-tenting as indicators of hyperthermia and poor welfare.

Pritchard *et al.* (2006) found that flared nostrils, increased respiratory rate and depth, head nodding and apathy reliably indicated environmental stress and these signs could all be recognised by owners without diagnostic equipment. This was confirmed and developed in the study by Swann (2006), which highlighted apathy as a critical behavioural trait. Apathetic horses were 'non-responsive to external events in their environment, including human approach and interaction' (Swann, 2006). Non-responsiveness was considered a common sequela to dehydration, exhaustion and chronic pain, and a positive correlation was found between apathetic behaviour and developing skin lesions.

Biffa & Woldemeskel (2006) studied the contributing causes of external injuries in working horses, agreeing with Swann (2006) that multifactorial insults to a horse's welfare resulted in skin wounds. Historically, skin wounds have been attributed only to poor harnessing, but on investigation of the causes of lesions on 350 horses, only 27.9% were primarily caused by poor equipment. This study demonstrated that a combination of exhaustion, dehydration, poor body condition and underlying infections, exacerbated by lack of rest, were significant causes. Parasitic infections, for example, can chronically decrease host defences and allow injuries to manifest more severely (Pearson & Krecek, 2006). Swann (2006) also analysed how associations between deteriorating welfare and skin pathology could occur, noting that upon loss of supportive adipose tissue and skin integrity, constant chronic pain leads to habituation of the horse to discomfort and a decrease in responsiveness to further lesion development.

Swann (2006) also investigated the welfare implications of interaction with conspecifics, by examining behaviours of horses and ponies during 6 months of continual work. When animals were released from their day's work, socialisation behaviour such as nuzzling was the first priority for fatigued and dehydrated equines followed by communal drinking as a herd. Gradually non-responsive behaviour, such as disinterest in their environment, improved and the horses began to forage. However, animals that became permanently apathetic failed to socialise, lost body weight and exhibited extensive skin lesions as the season progressed. This is supported by Biffa & Woldemeskel (2006) in their analysis of the multifactorial causes of external injuries.

## Conclusion

The three studies agreed that there is a shortage of data on low BCS horses working under heat and environmental stress. These studies were limited by their small sample sizes, which reflect their reliance on owners volunteering, and inter-country population and environmental variations (Pritchard *et al.*, 2005). However, it can be concluded that there is a pressing need for simple, readily available methods for owners to identify welfare issues. Recognition of exhaustion behaviours is a valid method of enabling owners to rest and cool their animals as soon as signs are observed, and having drinking water available with conspecifics present may provide the first step to welfare improvements. Welfare problems in working horses cannot be alleviated by addressing only resources external to the horse, such as harnessing, as often they are not the primary factor causing injury. Instead underlying exhaustion, disease and poor body condition must be managed. Further research is necessary, in partnership with owners, to investigate appropriate working times and loads, and ways of reducing disease and malnutrition.

## References

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