Welfare considerations surrounding the management of breeding horses

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Categories : Equine, Vets

Date : March 6, 2017

ABSTRACT

Evidence in the literature regarding the welfare of breeding horses as a discrete group within the general equine population is sparse. This article reviews potential welfare issues that apply particularly to breeding horses and possible methods of addressing them. Careful consideration of the justifications for, and selection of, individuals for breeding, along with adaptation of traditional methods of husbandry to better mimic the natural situation, and behaviours of breeding horses, can make a positive contribution to equine welfare.

Horse breeding is an important aspect of the international equine industry. In the UK, approximately 4.5% of horses (and 9% of mares) are used for breeding[1].



Figure 1. Stress at weaning is best minimised by gradual weaning, combined with contact between the foal and other horses and a high-forage diet.

Anecdotally, stud veterinarians may feel preventive health care (for example, farriery and parasite control programmes) of broodmares in particular is not always as good as it could be on all premises. However, evidence about the welfare of breeding horses as a discrete group within the general equine population seems to be sparse. Apart from the harvesting of urine from pregnant mares for pharmaceutical use, “breeding” does not feature as one of the chapters on welfare issues relating to human use and abuse of horses in McIllwraith and Rollin’s Horse Welfare[2].

General surveys of the equine population in the UK[1,3-5] and the Blue Cross National Equine Health Survey – although they have gone some way to estimating what percentage of the total horse population is used for breeding – have not separated breeding animals as a sub-group of the population when considering issues such as management, feeding, transportation, and the occurrence of indicators of poor welfare, such as stereotypies.

This article aims to elucidate potential welfare issues, which apply particularly to those animals within the equine population used for breeding, and possible ways of addressing them. Whereas I previously co-authored an article looking at welfare issues surrounding the use of particular equine breeding techniques[6], this article will focus on welfare issues surrounding the selection and husbandry of equine breeding animals.

To breed, or not to breed?

Overbreeding

The latest economic recession had an undoubted impact on equine breeding activity. For example, between 2008 and 2012, the number of Thoroughbred foals registered dropped by 25%. Nonetheless, overbreeding across the equine sector (all breeds) has been identified as an underlying cause of increased horse abandonment and welfare issues[7,8].

Type of horse being bred

Part of the problem may be a mismatch between the animals being bred, and the demand from purchasers (which has been reduced in the poor economic climate anyway).

A breeding survey conducted by the charity World Horse Welfare in 2013 suggested almost a quarter of horse owners had bred from the horse(s) they owned. Mare owners' expectations about the cost of producing a foal, and the likely financial rewards for selling one, may be unrealistic. Even when the mare owners' initial intention was to keep the foal, circumstances change across a horse's lifetime. The future welfare of foals bred purely for sentimental reasons, or because the mare has gone lame or has a poor temperament and the owners don't know what else to do with her, is likely to be more at risk than a foal bred from crossing two sound, athletically successful animals.

It does not necessarily follow, however, the production of "elite" youngstock protects their future welfare. Issues surrounding rehoming racehorses at the end of their careers (successful or not), however well-bred the horse may have been, are recognised within the racing industry[9].

Similarly, in the non-Thoroughbred sector, purchasing decisions are sometimes made for reasons of fashion rather than common sense, and even carefully bred animals may experience poor welfare if their talent, and that of the owner/rider, is mismatched[10].

Inherited problems

Ethical debates surrounding dog breeding and the relationship between inherited traits and a negative impact on lifetime welfare are well rehearsed[11-13].

In a review of inherited disorders in the domestic horse, the authors reported 49 breeds (21.2% of breeds worldwide) are predisposed to one or more inherited disorders, which might have a negative impact on welfare. Examples include disorders in miniature horses related to humans selecting for extreme small size and disorders in other breeds related to selection for particular coat colour[14].

There are well-known examples of genes that cause disease and consequent welfare issues in specific horse breeds, such as
the gene that causes hyperkalaemic periodic paralysis in Quarterhorses, or the gene that causes cerebellar abiotrophy in Arabians. Responsible breed societies and breeders are able to make use of commercial genetic testing to identify carrier horses. The sequencing of the horse genome has opened up the possibility of research into identifying genes and mutations that contribute to a range of heritable equine diseases across breeds, such as “tying up”, laminitis, recurrent airway obstruction and bone disease.

Welfare issues related to management

Where welfare problems in equine breeding are identified in the literature, it is often in relation to the management systems under which domesticated breeding animals are kept. In a natural situation, breeding groups of horses consist of a free-ranging band of broodmares, their foals and weanlings, and an active “harem” stallion[15-17].

Non-dominant males are forced out of the breeding group as they become sexually mature and form a band of “bachelor stallions”. Weaning occurs gradually before the next year’s foal is born. Internationally, management of domesticated broodmares ranges from:

- extensive systems in which animals are kept and foal outside[18]
- systems in which animals are stabled overnight, but have access to pasture during the day
- intensive systems in which animals are stabled and have very limited, if any, access to pasture[19]

Domesticated stallions are commonly kept individually, due to fears of injury or aggression towards other horses[15,16].

Significant potential exists for welfare problems to arise from the management systems imposed on domesticated breeding horses. Prolonged stabling is a recognised cause of stress, as demonstrated by stereotypical behaviour in horses[20].

The practice of keeping stallions in solitary confinement causes significant stress[15,21] and increases aggressive behaviour if stallions are subsequently kept in small groups[22].

One study found stallions may exhibit higher rates of stereotypies than horses of other sexes[23].

This was attributed to stallions being often housed individually, and stallions were generally used for (potentially stressful) competition, as well as breeding, whereas mares were not.

Individual stabling without turnout or access to a social companion has also been associated with self-mutilation in stallions, although (rather paradoxically) some types of self-mutilation in stallions can be alleviated by stall-tieing[24]. This may be due to being tied up reducing exposure to olfactory stimuli, such as faeces and the smell of other stallions, which induce self-mutilating behaviour.

Constant, indirect exposure to other horses, particularly stallions, in the absence of exposure to mares in a manner that mimics the “harem” of wild horses may replicate stressful situations of high competition for breeding mates for stallions[16].

The welfare of breeding horses can be improved by simple adaptations to management regimes to more closely mimic the situation in the wild. For example, increasing the availability of forage can improve welfare even in mares stabled individually for the majority of the day[25].

Self-mutilation in stallions may be reduced by allowing more opportunities for social interaction and increased exercise[24].

However, the causes of stress in large groups of breeding horses are multifactorial, as evidenced by the fact even broodmares maintained on pasture show a surprisingly high incidence of endoscopically detected gastric ulcers[26].

There is concern in the literature about the physical, psychological and behavioural effects of weaning programmes that do not mimic the gradual process exhibited in wild horses. Weaning causes stress in domesticated foals, demonstrated by increases in vocalisation, locomotion and salivary cortisol concentration[27].

Abrupt weaning (sudden separation of the mare and foal) has been associated with the subsequent display of abnormal behaviours in foals[28]. In one survey-based study of 140 breeders and 2,794 horses, the prevalence of abnormal behaviours in weaned foals across Europe, North America and Australia was 5.2%[29]. Such welfare issues were reviewed in an article[30], suggesting stress at weaning is best minimised by gradual weaning, combined with contact between the foal and other familiar horses, and a high-forage diet. Another study also found the presence of unrelated adult horses at the time of weaning may help to reduce stress among weaned foals27.

Conclusion

Challenges to the welfare of horses being used for breeding occur as the result of poor decision making and management. Careful consideration of the justifications for, and the selection of, individuals for breeding, along with adaptation of traditional methods of husbandry to better mimic

the natural situation and behaviours of breeding horses, can make a positive contribution to equine welfare.

- **The author would like to thank Peter SandØe for his assistance with this article.**

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