Optimised environments for horse health and wellbeing: the use of alternative grazing

Despite the role of the horse having changed from working and sporting toward leisure, types of management have remained similar for the past century, with horses still being kept in small stables and paddocks which were predominantly designed for rest and recuperation after hard work. Many of the UK's major equine welfare challenges, such as stress and obesity, can now be traced towards management that does not fit well with horses' ethological needs. Some UK horse owners are now using creative strategies to manage their horses' welfare in a domestic setting, by structuring their turnout areas in ways that are designed around the horses' three key needs of 'forage, friends and freedom'. Owners suggest that these management systems can be particularly useful for managing some of the most common equine health and wellbeing challenges, including equine metabolic syndrome, laminitis, stress or behavioural issues and arthritis. A better understanding of these systems could therefore be particularly useful to veterinary professionals who commonly need to assist owners in managing those conditions. This article describes the most frequently used alternative grazing systems, and the common advantages and pitfalls of each.

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The UK's horse population has undergone a significant change in the past century, from being working or sporting animals to being predominantly leisure and companion animals. The role of the leisure horse is to primarily be a recipient of care, to be much loved and lightly exercised by amateur owners (Furtado et al, 2020). Despite the level of care, time and money dedicated to leisure horses, preventable welfare issues remain. As an example, the UK is in the midst of an epidemic of equine obesity, and unrecognised stress is also high on the list of wellbeing issues determined by professionals (Horseman et al, 2016, 2017).

These welfare issues may be partly caused by a lack of management change to match the significant role change. Despite the fact that horses have become gradually less active, their management has remained relatively similar to that of working horses. Stables and small paddocks, which would traditionally have been places for hard-working horses to rest, eat and recuperate after significant energy expenditure, are still commonly used for horses who rarely work up a sweat (Hockenhull and Creighton, 2015).

Furthermore, our knowledge of equine needs has changed with our understanding of ethology in wild equine herds. It is known from extensive studies that, when allowed, horses choose to spend time in a herd of conspecifics, to seek out a diverse range of fauna and travel long distances each day over varied terrain (Duncan, 1985). Some studies have shown that wild horses in the Australian plains travel up to 29 km per day (average 18 km) (Hampson et al, 2010a, 2010b). While the conditions for feral UK horses may not require quite this distance per day, there is a discrepancy between the voluntary movement possible in feral versus domestic settings.

Domestic settings limit horses' needs, with horses often being kept alone or in pairs; grasses are often mono-cultures, sometimes severely over-grazed, and choice is often lacking. Therefore, it is easy to see why issues such as stress and obesity might become prevalent. How, then, can we incorporate these ideas (loosely known as 'the three Fs of horse needs: friends, forage and freedom) into domestic equine lifestyles?

Alternative grazing systems are field environments created around these needs. Their use is becoming increasingly popular, particularly for the management of common conditions such as laminitis, equine metabolic syndrome, arthritis and stress-related conditions, such as gastric ulcers and management of stereotypies. Of course, the alternative systems described are not the only ways to provide horses with the 'three Fs' and an optimised environment, but the ways that owners create and implement these

systems can provide food for thought regarding ways to enhance a horse's environment and their management. This article describes some common alternative management systems, as well as how they may be used to assist in the management of common conditions. The information below is drawn from the results of a descriptive study of the use of such systems across the UK (*See further reading*)

Track systems

Track systems involve placing a track around the outside of a field or several fields, and keeping the horses on this tracked area rather than in a central paddock. Items such as water, shelter, hay feeders and enrichment (such as scratching posts and herbs) are then interspersed around the tracked area so that horses have to move around the track to access them. This subsequently encourages movement as horses seek each resource, and the use of the relatively narrow track means that grass levels are kept low on the track area. Track systems are reported by their users to encourage additional movement, while keeping horses in low-grass environments. This makes them a popular choice for managing excess weight, equine metabolic syndrome and other issues which benefit from additional movement, such as arthritis.

Although there has been little formal study of the effect of track systems, it is not uncommon for owners to use pet tracking devices to monitor their horse's movement before and after implementing a track. Those who do this often suggest that their horses movement has markedly increased. However, this likely depends on the set-up of the track and the individuals involved, as having a track does not necessarily lead to an active horse and track users should make adjustments to suit the horses within their system. A study by Hampson et al (2010b) explored different paddock layouts, including tracks, and found no significant differences in movement patterns. However, these layouts were set up simply on grass paddocks, whereas many track users will try to vary surface, terrain, and resources. Owners are sometimes tempted to set up complicated shapes such as spirals and zigzags, assuming that this will encourage movement even further, however the aforementioned study found that spirals actually decreased movement. Horses, as naturally plain-dwelling animals, are 'designed' for open spaces and perform poorly in maze-like tasks where logic in relation to spatial awareness is required (Brubaker and Udell, 2016). Therefore, horses may become stressed in complicated layouts like spirals or mazes so track simplicity is important.

Track systems have other limitations, particularly in the UK where mud management is an essential part of horsecare. While some track users surfaced the track, it is common to completely remove tracks in winter and replace them in spring. The converse issue is present in spring and summer, when track users sometimes have trouble keeping grass levels low enough to keep weight down, sometimes requiring the use of muzzles, co-grazers (other horses or sheep), or strip grazing to remove enough grass to reduce weight. A high human workload can also be an issue, given that removing faeces across the length of the track is required daily, as well as placing suitable forage and enrichment.

Owing to the limited space available on tracks, careful design and thorough monitoring, with subsequent redesign when necessary, is important to ensure a harmonious herd, for example, making sure multiple resources are available (such as hay in multiple places rather than one feeder), ensuring that there are no dead ends where horses might become trapped, placing plenty of wider resting areas and making particularly slow and careful introductions for new horses.

The Equicentral system

The Equicentral system takes inspiration from the regenerative agriculture movement, applying the science from this field to equine care. Regenerative agriculture aims to protect soil in order to maximise the health of plants, and subsequently, animals who graze that grass (Sherwood and Uphoff, 2000; Lal, 2020). As such, grass is grazed very lightly, in order to mimic the natural grazing patterns of hooved wild animals on grassland. Monocultured grazing and bare soil (such as dust or mud) are seen as symptomatic of pasture misuse. In order to protect grazing while maximising equine wellbeing, the equicentral system employs a surfaced 'loafing area' (this could be an open stableyard, a barn or an arena) which has all the horses' resources (water, shelter, enrichment and hay feeders). Leading on from this loafing area is access to paddocks. Horses are allowed access to one at a time and the paddocks are rotated much more lightly than in traditional horsecare. Equicentral users usually monitor their grasses to decide when is the best time to rotate, which could be a week or months depending on conditions.

In this system, horses might not always have access to the grass, but they can always access the loafing area meaning that, following natural patterns of behaviours, horses graze for a while before returning to the loafing area to sleep and drink.

Because horses never go out on an empty stomach (given the hay fed in the loafing area) and because of the fibrous and diverse nature of the grass available when at pasture, users of this system suggest that it maximises health and can even be useful for managing weight and laminitis. However, it is possible that some horses might 'binge' eat on such a system and not learn to self-regulate. Hence, it is important to consider each animal as an individual. Proponents of the system suggest getting horses used to it over the winter so that any binge eating can occur while the grass has less natural goodness and any extra calories can be used to keep the horse warm.

This system is seen as very flexible because the loafing area has everything the horses need and they can be easily kept on it at times when fields might become muddy or for other reasons. It is also flexible in relation to the possibility of keeping some horses on the loafing area, while others go out to graze. Because most time is spent on the yard area, the workload for owners is also relatively low.

In terms of supporting the environment and conservation, the principles of the equicentral system are well-supported by evidence from similar approaches in farming, suggesting that this system could increase soil health, carbon sequestration and improve local flora and fauna (Lal, 2020; Sherwood and Uphoff, 2000).

However, implementation of the equicentral system may take time, both the horses and the land will take time to recover from

traditional management and some users look at re-seeding to speed the process up. However, typical monocultured and overgrazed equine paddocks may need significant support to become the diverse and fibrous grasses that are considered ideal.

Some users combine the equicentral system with a track, by using a surfaced track as the loafing area and then managing the centre section according to equicentral principles. This can provide a flexible system for many users, although the costs and workload are increased because of the need to manage the surfaced track area. The equicentral system can also be used in conjunction with woodland and moorland grazing by creating a surfaced holding area, which can also be used as the first step in rewilding smaller properties.

Woodland and moorland grazing

Woodland and moorland grazing involves using non-traditional areas as turnout, because of their diversity and the prevalence of grasses which are likely to be sparse and low-energy. Woodlands in particular provide relatively low-grass environments, yet both spaces provide natural enrichment and varied terrain.

Both environments may become muddy over the winter because of the bare soil on woodland and marshiness of many moorlands. As such, both may need removing in winter or require support with surfaced areas, or the use of stables.

Depending on the management set-up, woodlands and moorlands may mean additional work for owners and both may require regular monitoring for new hazards such as poisonous plants, holes or fallen branches.

Horse care within rewilding

Rewilding is a philosophy based on the idea that human intervention on land, particularly any sort of farming, is causing a disruption to the natural ecosystems on that land, which has negative effects on the soil, flora and fauna health. However, if land is allowed to go 'wild' and conditions are created which mimic a wild ecosystem (which includes light grazing from ponies), the land and its organisms will essentially 'rewild' themselves, leading to a diverse, thriving and healthy ecosystem. Similarly, conservation grazing aims to create biodiverse environments which protect certain species. While these ideas are not centred around horsecare, horses can form a part of these ecosystems, in which horses would be kept as naturally as possible; living as a herd and roaming the land according to their preferences. Such projects typically involve large areas such as conservation land, but some horse owners find ways to create wild or conservation areas within their own land, for example keeping some areas wild for much of the year and allowing horses to graze them very lightly for short periods.

Like the equicentral system, the conservation and rewilding philosophies rely on horses eating fibrous, diverse, mature grasses as their forage. In this system, horses would also lose weight over winter, mimicking natural weight gain and loss cycles (Scheibe and Streich, 2004). However, this may be uncomfortable for some owners, given that 'natural' levels of winter weight loss, often to the point of seeing ribs, are perceived as poor welfare in domestic horses (Furtado et al, 2020).

KEY POINTS

- Many of the UK's biggest equine welfare challenges, such as stress and obesity, can be traced to management that does not fit well with the horse's ethological needs.
- Alternative grazing systems are creative means of managing horses in domestic settings, aimed at providing constant access to the 'three F's': friends, forage and freedom (that is, herd living, access to diverse but high fibre and low calorie forage, and freedom in relation to both space and choice of where and how to spend their time).
- Although little scientific study has been performed in relation to the use of these systems, they are regularly reported to be particularly useful in managing the most common equine health and wellbeing issues faced by UK horse owners, including laminitis, equine metabolic syndrome, arthritis and stress or behavioural issues.
- No one system is a panacea for all health conditions and all situations; every system needs to be adapted for the individual horse, owner and available land.

This system has clear benefits in terms of creating the most 'natural' life possible for a domestic horse, although each system will be unique in terms of how wild its equines become. For example, at the Knepp Estate (Tree, 2018), one of the most well-known rewilding projects in the UK, the Exmoor ponies kept as part of the project are almost entirely unhandled. However, some owners do keep handled and ridden horses on such systems, providing they do not need to catch them in a hurry. One limitation of this is that horses may not know where to find their owners, and vice versa. However, this can easily be overcome through the use of a positively reinforced routine (such as a reward of a small feed at a certain time and place each day), or through teaching the horses to come to a call.

Conclusion

Each of the management systems described above are centred around providing the horse with the 'three Fs'. In each system, horses are usually kept and managed as a herd, given access to low calorie forage and are kept in an interesting and enriched environment where they can choose when to seek shelter, food, social interaction and playtime. While the described set-ups are very different to one another, they are commonly used to manage the same range of common issues including equine metabolic syndrome, laminitis, arthritis and stress or behavioural issues. This is because each management system is focused around providing space for the horse, centred around maximising movement while limiting forage and maintaining access to friends, forage and freedom.

Importantly, proponents of each system agree that there is no one way of keeping horses that would work for every horse, every field and every owner. Rather, it is important to consider the unique situation of each and work according to that, with careful monitoring of health and wellbeing when changes are introduced. A knowledge of the options available to horse owners is therefore useful point of reference for vets, equine professionals and owners when considering the future of equine care, particularly for those common health conditions. EQ

Conflicts of interest

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Further reading:

To read a full report about the use of these systems, visit https://bit.ly/3cqpyBM or, for a short two-page summary, visit https://bit.ly/2P0WLvf. This report on grazing systems has been developed as a collaboration between the University of Liverpool and the Blue Cross, British Horse Society, British Equine Veterinary Association, The Donkey Sanctuary, The Horse Trust, Redwings, and World Horse Welfare.

For more information on tracks visit www.paddockparadise.net, for equiculture visit www.equiculture.net and for rewilding visit www.rewildingeurope.com

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