

## Equine pasture management

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### ABSTRACT

Horse owners historically take little care of their pastures, neglecting reseeding and fertilising, and equine vets should encourage them to use available pasture in efficient ways. This article explores grass types, maintenance, poisonous plants, fencing and parasite control – all important in creating a suitable grazing environment offering the energy and nutrients horses need.

**Each horse should have one to 1.5 acres of grazing, according to British Horse Society recommendations. This stocking density depends on factors including the age, type, workload, number of horses, supplementary feeding and hours per day spent grazing.**



**Figure 1.** The sycamore tree has been linked to cases of atypical myopathy. Image: © Melissa

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Horses are selective grazers, meaning pasture grass can become “horse sick”, with overgrazed sparse areas deprived of soil nutrients and unpalatable latrine areas horses will not graze on.

Fibre should constitute at least 50% of a horse’s diet, and in many cases constitutes up to 100%. Good quality pasture provides necessary energy, protein, vitamins and minerals for many horses, depending on age, type, workload and health status.

## **Endoparasite control**

Endoparasite control is a vital part of pasture management, and removal of droppings, ideally every one to two days, is the best method to reduce the parasite burden.

Faecal worm egg counts (FWEC) are useful at certain times of year to assess worm burden, and to help identify horses most sensitive to parasitism. About 80% of the worm burden will reside in 20% of the horse population, and susceptible horses may require regular worming.

FWECs are also useful to assess anthelmintic efficacy and check resistance. It is impossible to construct a one-size-fits-all worming regime, but a herd plan should be constructed between horse owner and vet to prevent heavy parasitism, yet stave off excessive and unnecessary treating.

Pastures should be reseeded every 10 to 15 years, after appropriate fertiliser has been used to optimise soil conditions. Soil analysis offers a breakdown of certain elements and compounds, as well as an idea of the pH. The ideal pH is between six and 6.5, and if the acidity is too high (therefore a low pH) lime may be added to the soil to increase it.

Owners should be encouraged to seek advice from a nutritionist before embarking on growing equine pastures, because use of the wrong grasses or fertilisers can have disastrous consequences.

Horses should only be allowed to graze established pastures, as grazing new ones may lead to colic or metabolic disturbances.

It is wise to wait until the grass shaft height is at least 10cm and the root system is established before allowing horses to graze. Balanced seed mixtures are available for seeding equine pastures, usually containing a mixture of grasses such as perennial ryegrass, meadow fescue, timothy grass, creeping red fescue and smooth-stalked meadow grass.

Large quantities of clover should be avoided, due to the high nitrogen content, as should large amounts of fast-growing ryegrass, which can be high in protein and overgrow other important grasses.

## Important nutrients

Nitrogen, phosphorus, potassium and magnesium are important nutrients. Nitrogen promotes rapid green growth, phosphorus is important in the initial root growth and seed production, potassium improves pasture quality and disease resistance, and magnesium promotes green, leafy growth. Soils deficient in these elements will produce poor-quality grass that grows at a slow rate.

Specialised and balanced slow-release equine fertilisers may be applied to pasture to optimise grass growth. Fertilisers not designed specifically for equine pastures, for example, any high in nitrogen alone, should be avoided, as these encourage rapid, rich grass growth that can lead to colic, laminitis and other health problems.

After application of any fertiliser a minimum of three weeks must pass before horses are allowed to graze the pasture, and even more time may be necessary in drier seasons. Horse manure, even well rotted, should not be used as a fertiliser for equine pastures, as some endoparasites can survive for years in the environment in their egg or larvae stages.

## Poisonous plants



**Figure 2.** Ragwort in its early stages of growth may be difficult to find and identify, but it is still poisonous even before the characteristic yellow flower is produced.

Plants that cause no harm to cattle or sheep may be dangerous for horses, so owners should be advised accordingly. Plants poisonous to horses include bracken, yew, laburnum, foxglove, privet, deadly nightshade, St John's wort and hemlock. Providing more hay in the winter may prevent horses from looking into hedgerows for forage and risk eating potentially dangerous plants.

The sycamore tree has been linked to cases of atypical myopathy (**Figure 1**) and the gallotannin in

acorns is metabolised into products that can cause severe damage to the gastrointestinal tract and kidneys. Sycamore and oak trees should, therefore, be fenced off, especially during the autumn.

Ragwort (**Figure 2**) is poisonous and can cause acute or chronic liver damage in horses, both when growing or when cut and dried in hay.

## **Fencing and water**

Fencing is an important consideration in pasture management. Fences should be safe and of adequate size and rigidity to prevent horses escaping or injuring themselves. Suitable types include post and rail fencing, electric tape, stone walls, hedges and plastic fencing.

Barbed or strand wire should be avoided, especially when used alone, as horses may fail to see it if in a panic, causing injury. Wooden fences should be treated with a horse-safe, unpalatable, wood preservative to prevent chewing, and electric tape must be well maintained and have a suitable and safe electricity source.

Fresh water must be available to grazing horses at all times, by either an automatically filled water trough or a large trough topped up daily and cleaned out regularly. The trough must contain water for all the horses present in the pasture and be easily accessible. It will also need to be checked daily for leaks.

Natural water sources, such as ponds or streams, are not ideal, as they may contain pollution or debris such as sand, that can lead to colic when ingested.

## **Shelter**

Horses must be provided with some form of shelter all year. In the summer, a shelter will provide protection from heat and flies, and is important in the winter for shielding horses from the rain, wind, snow and cold.

Trees and hedges can provide adequate shelter, but otherwise a field shelter is advisable. This must be large enough for all horses in the pasture to comfortably fit inside, and sited in a suitable position not facing the wind and rain.

Shelter should be placed on hard-standing, with good drainage to prevent it becoming poached. A variety of wooden and plastic shelters is available, some of which are mobile and so may not require owners to obtain planning consent.

## **Grazing pastures**

Regular resting of grazing pastures enables the grass to recover and prevents it becoming horse sick. Grazing other species such as sheep and cattle when horses are not using it can be beneficial, as these animals are not affected by the same endoparasites as horses and they can therefore dilute the parasite burden.

If donkeys are grazed on the same pasture as horses, special attention must be paid to worming horses against the lungworm *Dictyocaulus arnfieldi*. This parasite does not cause clinical signs in donkeys, but can cause clinical signs of lung damage in horses.

## **A yearly plan for general pasture management**

The following is a four-season guide to managing pastures:

### **Spring**

A soil sample should be analysed to identify any deficiency in nutrients and also to measure the pH of the soil. If the pH is too low then lime may be applied to the pasture. Fertilisers are usually used during March/April, when there is some rain forecast. During late spring the pasture may be harrowed, removing any dead grass and aerating the soil. Spring is also a good time to reseed any areas of the pasture that have been poached over the winter. Also during late spring, when the conditions are dry, but the ground is not yet hard, the pasture may be rolled to flatten any rough areas and ruts. This is a good time to repair any water troughs damaged by freezing in winter, as well as to maintain the fencing. Faecal egg counts may be useful in late spring, as at this time some endoparasites (cyathostomins in particular) will be emerging from the gut wall and establishing an adult infection in the lumen of the gut.

### **Summer**

During early summer any poisonous plants should be removed, such as ragwort. This can be achieved by digging the plants up, or by applying a horse-safe herbicide. Late in the summer, when the land is dry the pasture may be topped (the longest strands cut) to remove any dead, dry or long herbage, and encourage growth of the lower grasses, to promote a dense turf. The pasture must not be grazed until the cut grass has dried out or has been removed, to prevent colic. Pregnant mares, mares with foals at foot and foals are particularly sensitive to some endoparasites, such as ascarids and *Strongyloides westeri*. Anthelmintics should be administered regularly to these groups over summer.

### **Autumn**

Before winter sets in all weeds must be removed to prevent them seeding and spreading. This is a good time to trim back hedges, repair and maintain fences and clear ditches of excessive plant material to aid irrigation. The water troughs should be checked to help prevent water supply

problems during the winter. It may be prudent to repeat the faecal egg count, to check the worm burden and to treat any affected horses prior to the parasites adopting the encysted larval stage in the gut wall over winter. If twice-yearly tapeworm control is being practised, autumn is a good time for this.

## **Winter**

Due to rain and/or snow turnout may be limited. If possible, rotate pastures so they don't become poached and use hardcore in very wet areas such as gateways. Encourage horses to move around the pasture by, for example, feeding hay in different areas. When worming, remember faecal worm egg counts may not prove accurate, as some parasites will be encysted in the larval stage and only a narrow spectrum of worm control products are effective against these encysted larvae.