

## Why is forage so important?

Forage must form the basis of any horse's diet but why is it so important?

- Fibre takes time to eat and chew. A kilogram of fibre will keep the horse busy for far longer than a kilogram of cereal. Horses naturally spend around 75 percent of their time eating and have a psychological need to chew. If we don't meet these natural behavioural drives it can be distressing to the horse and may lead to undesirable behaviours like weaving, crib-biting or damaging the stable.
- Chewing forage stimulates saliva production. A lack of saliva is associated with choke.
- If a horse is receiving cereal feeds, it is best to allow the horse access to forage immediately beforehand. Chewing the forage will stimulate saliva production and this saliva will buffer the acidity in the stomach caused by the cereal feed. Otherwise, this acid may lead to the development of gastric ulcers, which are painful and can cause losses in weight, condition and even performance.
- The fermentation of forage in the large intestine produces a lot of heat. This heat is important to help the horse maintain the correct body temperature, particularly in winter.
- The equine digestive system has evolved to be constantly processing fibre rather than large cereal meals. If insufficient forage is provided, it can disrupt the health of the system leading to conditions such as acidosis and colic (see the BHS leaflet *Advice on Colic*).

Quite apart from the health benefits of feeding forage to a horse, it is worth remembering that forage is usually cheaper than cereal feeds – so it benefits the owner's wallet too!

Ideally, all horses should have access to *ad lib* forage – that is to say that they have access to forage at all times. This is easy to achieve when a horse is at grass, but it is worth monitoring a stabled horse's appetite to ensure you provide him with enough hay (or other forage) without over-doing it and causing waste. If your horse needs to lose weight, do not cut down on the

amount of forage you feed. Instead, switch to a lower energy forage and keep the bulk up – for example, switch half of the ration of hay for oat straw.

### Other rules of feeding

Whilst providing plenty of forage is absolutely essential, it is not the only important rule when it comes to feeding horses.

### Feed little and often

Horses have small stomachs (about a third of the size of a human's as a relative proportion of the whole digestive tract). An average 16hh horse has a stomach the size of a rugby ball and it is, of course, much smaller in ponies. If we feed too large cereal "bucket" feeds food is pushed through the stomach too fast and not digested properly. When it reaches the large intestine the starch in the cereal is fermented by the bacteria contained therein, which causes a change in the gut acidity. This will lead to the "friendly" bacteria dying and a proliferation of "unfriendly" bacteria. This may have serious consequences for the health and performance of the horse.

If you are feeding cereal concentrates, there are a number of steps you can take to ensure proper digestion and avoid overloading the stomach:

- Feed hay before concentrates to slow down the passage of food
- Feed three to four small meals a day rather than one or two larger ones
- Dilute concentrate cereal feeds with plenty of chaff

### Do not make sudden changes to the diet

Your horse's gut is full of friendly bacteria that break down the fibre in forage with the horse

making use of the by-products. When the diet changes, these bacteria must adapt to the new regime. If they are not given sufficient time to do so, many of the helpful bacteria will die, which may result in poor performance or colic, endotoxaemia and laminitis.

The need to change the diet slowly applies to forage as well as concentrated feeds. Remember that grass is forage, so changes in grazing should be introduced gradually too.

The most common reason for sudden changes in diet is running out of the relevant feed, so plan ahead and monitor supplies to avoid this. If you do have to change the diet, do so over a period of 10-14 days, gradually introducing the new feed while feeding slowly declining amounts of the previous diet.

### Do not work fast after feeding

Exercise causes blood to be diverted away from the digestive system to the heart, lungs and legs. Unless the food has been absorbed before exercise starts, it might not be digested properly. A full stomach will also press on the lungs and compromise performance. Remember though that horses have evolved to run straight from grass and therefore, if meals are small, you can work your horse after one hour. However, all work should start with a warm up and therefore you would not be working your horse fast just after he has eaten.

### Feed something succulent

The best succulent to feed a horse is grass. Grass contains 80-90 percent water and is the natural feed for a horse. In comparison, the food a

stabled horse receives – hay and cereals for example – is very dry. Ideally, turn the horse out daily. If you cannot, then carrots, apples and sugar beet all provide water and you can always dampen the hay before feeding.

### Always provide fresh, clean water

Water is absolutely essential. If a horse cannot drink, he will rapidly stop eating. If he has been deprived of water, he is likely to dehydrate and this will have a serious effect on his performance and health. It is normal for horses to drink small amounts during and immediately after eating (although if the feed has a high water content this is less likely).

Each day you should scrub out the water bucket thoroughly; refill with clean water; and make sure it is secure so that horses cannot kick it over. Keep an eye on how much your horse normally drinks. If you are using automatic drinkers then it is more difficult to monitor intake. Generally horses will drink less water when it is cold so keep an eye on his droppings too to make sure they don't become too hard.

### Feed only high quality feed

To ensure that your horse receives all the nutrients he needs it is worth investing in high quality forages and cereals. Going for the cheaper, lower quality option is often false economy as your horse may lose condition and performance. Low quality feeds are often dusty, which can have serious implications for your horse's respiratory health.

**Remember, the key to a healthy horse is to treat him as an individual. Feed according to bodyweight, workload and temperament whilst always ensuring there is plenty of forage in the diet. This leaflet really is only a basic guide, so remember there are plenty of sources of further advice if you feel you need it.**

## ADVICE ON Basic Feeding



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## Advice on Basic Feeding

A good diet and correct nutrition are as fundamentally important to the horse as they are to us. However, many people don't seriously consider their horse's diet until something goes wrong. The correct diet can ensure your horse stays healthy and performs at his best, both now and in the future.

Every system in the horse's body is either directly or indirectly affected by his diet. Therefore, feeding your horse and choosing a diet should be based on an understanding of the science of nutrition, not simply upon the latest advertisement or fashion.

Feeding horses can be a complicated business and this leaflet is not intended to be a comprehensive guide. There are many excellent books available on the subject and any reputable feed manufacturer will have a customer helpline. BHS Registered Instructors can offer advice and our BHS Welfare Department are always happy to talk through issues related to feeding and nutrition.

Horse feeds are broadly divided into two categories (with some exceptions). The first and most important is forage, these are bulky high fibre and low starch feeds such as hay, haylage, grass, chaffs and haylage. Sugarbeet is also a type of forage and many feed companies produce fibre-based mixes or pellets. Forages are the essential part of every equine diet.



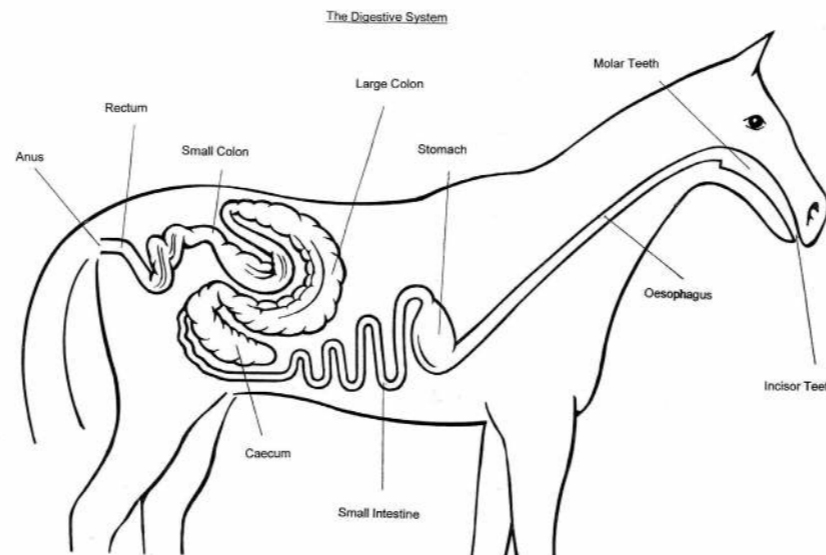
Cereals or concentrates are starch rich, energy dense grains like oats, barley and maize. Again, many feed companies produce cereal based, high energy mixes. These are only really needed by horses in significant work, or who need to gain weight/have trouble maintaining condition.

Many feed supplements are available, but it is prudent to seek advice (from a vet or nutritionist) as to whether your horse really needs an expensive supplement.

## The Horse's Digestive System

The digestive system of a horse has evolved to be very different from our own and this has implications for the type of diet they need. One of the most important things to be aware of is that the horse evolved to spend the majority of the day eating – usually around 75 percent of the time. Horses are trickle feeders, meaning that their digestive systems have adapted to be continuously digesting forage rather than individual large meals with periods of starvation in between.

Although it is beyond the scope of this leaflet to explain the equine digestive system in any detail, there are some facts that are helpful to know in order to feed our horses in the best possible way.



• **The mouth** - the horse is different to us in that we produce saliva almost constantly, while horses produce it only as a consequence of chewing. Saliva is an essential lubricant and the more the horse chews, the more it will produce.

Also unlike people, a horse's teeth grow continuously throughout its life. This means that the teeth need regular check-ups in order to keep them in peak condition. If a horse has poor teeth it will not be able to chew and break down its food properly. If the food is insufficiently broken up it can lead to blockages within the digestive system and will mean that many nutrients are not digested, causing the horse to lose weight and condition. Your horse's teeth should be checked annually by a British Association of Equine Dental Technician member, or by a vet who is registered with the BAEDT. Older horses are more likely to have problems and should be checked more regularly.

• **The stomach** - the equine stomach forms a proportionally much smaller part of the entire digestive tract than in people. The stomach does not need to be larger as the horse has evolved to be a trickle feeder. The relatively small size of

the stomach has implications for the size of the meals we give our horses – it simply cannot cope with large non-forage feeds.

• **The small intestine** - this is the site of digestion for protein, carbohydrates and fat from cereal feeds. Food normally stays in the small intestine for only around an hour. In an average 16hh horse, the small intestine is around 27m long with a volume of 40-50 litres. It provides a home for many bacteria and is the site that probiotics target. Because food spends such a short time here, if you are feeding cereals it is important to feed cooked (by the manufacturer) cereal as it is more easily digested.

• **The large intestine** - this is the most important part of the digestive system and is the site of fibre fermentation. Horses have adapted to become efficient users of fibre, something that cannot be said of humans. This is because of the millions of friendly bacteria that reside within the large intestine. They use the fibre to grow and survive and the horse uses the by-products of their fermentation. These by-products provide the horse with vital protein and energy, as well as the bacteria producing B vitamins and vitamin K. A healthy horse on a forage-based

diet therefore has no need of vitamin B supplementation. In a 16hh horse, the large intestine is around eight metres long, but it has a

huge capacity of 70+ litres, which gives it its name. Food will spend upwards of 36 hours in the large intestine before it is voided as faeces.

## What to feed and how much?

All horses are individuals and should be fed as such. Consequently, if you are unsure about feeding, you should get expert advice from a BHS Registered Instructor, a feed company helpline, or our BHS Welfare Department.

However, in all cases, forage should form the basis of any horse's diet. A diet should also always aim to maintain a horse at its correct weight. For this reason it is very important to assess and regularly monitor your horse's weight and condition (see the BHS leaflet Fat Scoring and Weight Estimation). Almost anyone would recognise that a horse being too thin is a welfare issue, but being overweight is just as significant a problem.

Overweight horses

- are at increased risk of laminitis (see the BHS leaflet *Advice on Laminitis*)
- are at increased risk of developing equine metabolic syndrome
- have less effective immune systems than those at the correct weight
- are more likely to suffer from problems with their joints
- have problems with their lungs and heart

The two main things that you need to consider when calculating a horse's ration are its bodyweight and its workload. However, many other factors also can affect its dietary needs.

These include:

- the horse's temperament
- the weather and time of year
- whether or not the horse is clipped
- feed quality
- age
- health

All of these factors contribute to making feeding as much an art as it is a science and highlight the

need to seek expert advice if you are unsure of what to do.

As a general rule, most horses will need to consume 2.5 percent of their bodyweight in food per day. Anything less than this is likely to compromise their digestive health and will fail to meet the horse's behavioural and psychological needs. The majority of this (an absolute minimum of 1.5 percent bodyweight) must be composed of forage-based feeds – for example, hay, grass or haylage.

Horses that do not have a heavy workload and are in good condition do not normally need to receive cereal feed as they can obtain all of the energy they need from forage. However, it may be necessary to provide them with a low calorie "feed balancer" to ensure they receive adequate protein, vitamins and minerals.

It is important to note that most horses have only a light workload and therefore may not need to receive cereal feeds. Native ponies in particular are very unlikely to need anything other than forage. Hacking, schooling and unaffiliated competitions are normally classed as a light workload, although each case will, of course, vary. The important thing is to monitor your horse's condition. If he is losing or gaining weight (and he doesn't need to) then you will need to review his diet. This may involve introducing or removing concentrated cereal feed from the ration while maintaining the forage portion. There are a vast range of feeds available for horses and trying to choose which one to feed is often bewildering. The key thing to remember is to maintain the forage component of the diet and monitor your horse's weight and condition. Take expert advice as to which feed in particular is likely to suit your horse.