

BY NICKY BOWE

"Pastures best for horses are native pastures such as kangaroo grass and wallaby grass, wheat grass, spear grass, windmill grass and weeping grass."

HOLD THE SUGAR!

By removing horses from herds where they had to compete and travel to find food and battle the elements, we have put them into single accommodation with shelter and ample food and turned them into pampered pets!



In the wild, horses were adapted to sparse, rugged rangelands with fibrous roughage.

"If it is high-fibre roughage that horses need, why do people turn to pelleted or processed feeds?"

We all need a reminder of what horses are designed to eat. If we go back to where they originated, they were adapted to sparse, rugged rangelands with fibrous roughage, including grasses and browse (i.e. trees and shrubs). Their natural diet was very high in fibre, with a little protein and a little fat. Therefore, forage is the key ingredient in a horse's diet. From this forage, digestive enzymes and a complex mixture of microbes in the gut digest, ferment and manufacture vitamins, volatile fatty acids, glucose and amino acids. Food for survival. The reality is, horses are designed to eat roughage constantly, in small amounts all the time.

BACK TO NATURE

Many horse owners face the challenge of living where the pasture is too rich for horses. This can lead to any number of problems, especially in the hooves, ranging from tenderness under saddle to mechanical breakdown with white line separation or seedy toe, and serious pathologies such as laminitis. These conditions are not normal for horses and it is important to revisit their housing to prevent such manmade pathologies. Horses need high-fibre feed constantly to keep their system healthy. This is when to introduce loop paddocks or laneways to limit the intake of unsuitable pasture and keep horses moving as they should.

At Mayfield Barehoofcare Rehabilitation Centre in Yarck, Victoria, we have loop paddocks where we simply drive the entire loop and feed pasture hay twice a day, spreading it around to encourage horses to move while they forage. In dry lot situations when there is little or no ground cover for grazing, slow feeder nets or bins can be used, containing mixed species of non-improved pasture hay with a Non-Structural Carbohydrate (NSC) reading of 6-12 (NSC describes the sugar and starch content of a feed, i.e. the digestible carbohydrates). This fodder needs to be available to the horse all the time.

If we take horses out of their natural environment so they are handy to catch and ride, we can at least try to bring some of the "natural" back and learn about correct horse

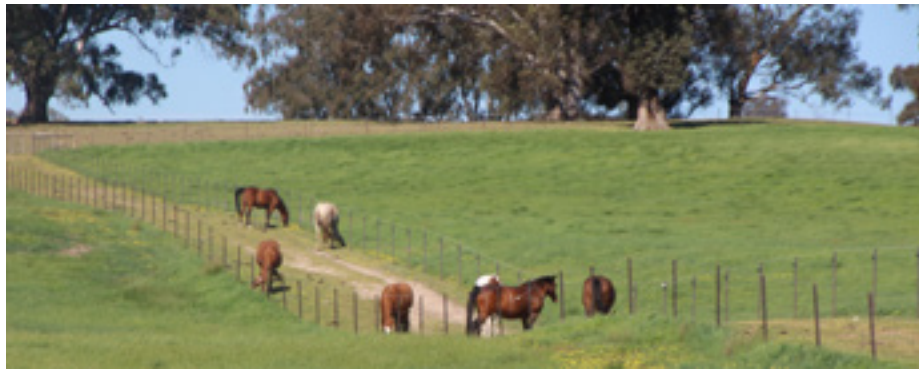
nutrition. Do not necessarily rely on feed store merchants, feed company reps or the racehorse trainer next door for advice. Owners need to know a little about selecting the right feed for their horses. We all know that humans who live unhealthy lifestyles, including lack of exercise and too much processed, sugary, carbohydrate-loaded foods, are more likely to get diabetes, cancer or heart problems. The same is happening in the equine world: horses are getting more obese, becoming insulin resistant (similar to type 2 diabetes), and early onset or false reading Cushing's disease is more prevalent. We are creating this, it is manmade. It's time for owners to take responsibility and right the wrong.

THE CORRECT FODDER

When plants grow in their optimum environment, they do not become stressed. Stressed plants (from overgrazing, low moisture content or frost) and weeds or opportunistic plants are higher in sugar, as are improved species for primary production. When managing the grazing of small paddocks, owners must watch for selective grazing and identify and remove weeds. The number one thing to avoid in horse pastures is ryegrass, along with improved clover species. These were planted to make pasture more productive to fatten livestock or increase milk yields. Grazing livestock such as sheep and cattle have a short lifespan compared to horses. Have you ever seen what happens to sheep or cattle that live beyond their productive lives? Pastures best for horses are native pastures such as kangaroo grass and wallaby grass, wheat grass, spear grass, windmill grass and weeping grass. If you don't have access to native pastures then you need to choose species less desirable for primary production, such as rhodes grass, phalaris, fog grass, brome and bent grass, to name a few.



Slow feeder hay nets are a good choice in dry lot situations when there is little or no ground cover.



Horses in a large loop system.

DIGESTING THE FACTS

Let's go back to basics and look at the equid's digestive system to understand just how important it is for horses to have a constant supply of high-fibre roughage. Not all horses are the same, but their physiology is. A horse's stomach capacity is very small (8-15 litres) in relation to its body mass, and if we look closely at the structure and function of the stomach, it is meant to be only be half full, from 4-7.5 litres. Therefore, when we hard-feed a horse – and allow for fluids and contents already present – we can only feed a maximum 3-6 litres. At our rehab centre, miniatures receive no more than 2 litres of hard feed in one feed and heavy breeds no more than 8 litres.

Horses have large molar teeth for grinding fibrous feeds. Whilst they are chewing, bicarbonate is released with the saliva to help buffer their digestive system, as a horse's stomach produces acid continuously. This brings us to the matter of starvation. If a horse goes without any food in their stomach for longer than three hours, the excess acid can cause ulceration, not to mention issues such as death of gut microbes, toxic reactions, laminitis, scouring, and even behavioural problems due to the pain and stress. Don't ever starve a horse.

The constant intake of fibre keeps the system working to optimum function. When the digestive system is full, acidity is reduced and digestive processes are slowed, making digestion more efficient and, most importantly, blood sugar and insulin levels are kept at a stable level. High-fibre feed moves through the digestive system slower than processed pellets, giving more time for uptake of nutrients.

PENCHANT FOR PELLETS

If it is high-fibre roughage that horses need, why do people turn to pelleted or processed feeds? Is it the ease of feeding, all mixed and ready to go? Well-made fresh pellets can be handy, but highly processed feeds such as pellets are potentially damaging. Most pellet premixes are grain based, and if fed in large amounts horses can receive a massive starch/sugar overload. If this does not cause an acute laminitic attack, then it will likely lead to a chronic state of sub-clinical laminitis and, just like type 2 diabetes in humans, the horse will eventually become insulin resistant. Also, the grain in the pellets is cracked and processed, therefore as it ages it becomes less nutritious and potentially damaging as fats and oils oxidise and turn into free radicals that cause toxic reactions and inflammation.

The higher the fat content of the pellet/grain the more susceptible it is to becoming rancid. Also, if the moisture content is too high, the pellets are subject to mould or bacterial growth. Even when stored in a cool, dry and dark place, pelleted feeds only last one to three months. If you need to feed pellets, check the processing date and examine the pellets closely, smell them and even taste them! They should look clean, smell fresh and taste like slightly salty starch. Pellets should not be dusty or smell or taste stale, fermented or rancid. Even if you are feeding pellets you must remember that pasture and hay should make up 90-100% of a horse's diet.



Horses in a smaller loop system.

HARD FEEDING

However, as we have limited the ability to select a variety or range of browse, and we have put further energy demands on our horses – and Australian soils and fodder are becoming more deficient – then a hard feed might be needed to meet nutrient and energy requirements. The first point of call in a hard feed is the base or roughage that we mix the supplements in. Choose the best option for each individual horse. Think about keeping things as natural as possible and to encourage chewing. The worst thing you can do is feed a hard feed to a hungry horse – always have free choice hay available. We don't want the horse bolting down its feed. This could cause choke, colic, ulcers etc.

The "ultimate chaff" would be chopped mixed species, preferably native pasture – but it is not available. I choose long-cut oaten chaff where possible, because it creates more chewing. Oats are the most natural and safest grain for a horse as they have a high roughage content and encourage salivation and chewing. However, keep the sugar content low when feeding hard feed and avoid grains which are also cereals. You can request oaten chaff without the oats blown in, known as "seconds chaff" or "long cut".

You might be offered wheaten chaff, but I tend to err on the side of caution, as wheat grains have more than double the sugar of oats and, if fed whole, horses have difficulty digesting them. At times, wheaten chaff without wheat grains

has tested lower in sugar, but no lower than a mature oat crop and there are more risks and many variables. So, if the chaff is white and has a few grains in it, as it almost always does, then oats are the best option. No grain fed to horses is more traditional or safer than oats.

Caution: If your oaten chaff is green, it was possibly harvested early due to lack of moisture. This could be due to drought, and when a plant is stressed it has a higher sugar content. And beware, oaten chaff is not always oaten chaff; during drought I have found barley, wheat, rye and sorghum grains in oaten chaff. Choose your chaff wisely and always check for correct contents, grains, mould, endophytes (endophytes are organisms, often fungi and bacteria, that live between living plant cells. Consuming fodder with large amounts of endophytes can be extremely toxic to horses) and dust.

The next big question is lucerne chaff. Yes, at times it tests lower in sugar than oaten chaff, but it cannot be fed on its own due to the high calcium and protein content. A general rule is that you can safely feed one-quarter lucerne chaff to three-quarters oaten chaff. Some lucerne is good for correct protein requirements for horses that are locked off grass. If you are feeding fodder during the dry summer months when there is no green pick and the pasture has no legumes, you can feed the ratio of 1:3 lucerne to pasture hay. Do not make the mistake of feeding just lucerne hay to a pony locked up just because it is lower in sugar than other hay you can source; they will receive a diet too high in protein and calcium which will be detrimental in the long run.

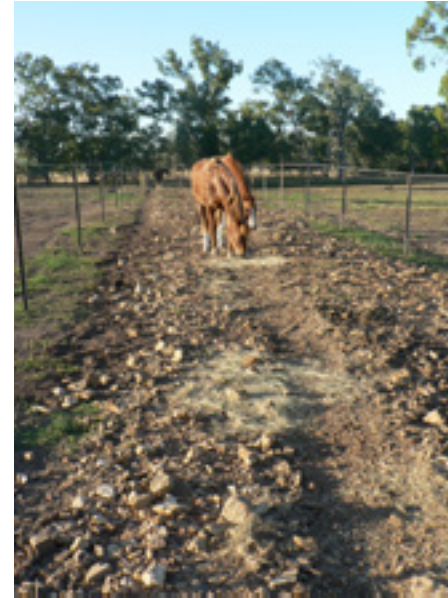
"Oats are the most natural and safest grain for a horse as they have a high roughage content and encourage salivation and chewing."

HARD-FEED FIBRE ALTERNATIVES

There are other low sugar alternatives to chaff that can be fed in a hard feed to mix in supplements. I call these "by-product feeds" as they are by-products from the harvesting or manufacture of other food.

- Sugar beet pulp is approximately 10% protein, 1% fat and 12% NSC; good for older horses still in work but overweight, as it is high in energy and low in fat.
- Copra is approximately 21% protein, 10% fat and 11% NSC; good for horses that are insulin sensitive but need to develop more top line and muscle.
- Soy hulls are approximately 11% protein, 3% fat and 6% NSC and the highest in fibre. As the evolved horse's diet is approximately 8% protein, 4-6% fat and 12% NSC, this is the closest to the evolved diet of a horse with a lower sugar amount and my preference as a bulk additive to a hard feed.

All three by-products need to be soaked just prior to feeding in at least four times the measure of water – i.e. one cup to four cups of water. I am cautious and do not overfeed these by-products; generally, a total of 1-3 cups per feed is the maximum. When it comes to hard feeds, I revert to my grandfather's saying: "A little bit of everything in moderation is better than a large amount of just one thing".



Gravel laneways are also good for conditioning hooves.

Ultimately, horses need to be running in herds on broad acreage of mixed species pasture (with no ryegrass or improved clovers) with access to ample water and a salt lick. Pasture hay needs to be supplemented when there is not enough roughage. In severe drought when there is no green grass available, lucerne will need to be blended into the hay at a ratio of 1:3. As modern horse owners we need to do our best to adapt the feeding and environment to the horses' evolved lifestyle if our aim is soundness and longevity. →→

HOLD THE TREATS

The giving of treats really needs to be brought to every horse owner's attention. Apples, carrots, sugar cubes, biscuits, plums, bread, bananas, you name it! People love giving treats to their horses. The argument is often "oh, they hardly get any, it should be OK". But are people able to stop? Often not. I recommend scratches and kind words... far less risky! How many horses that receive treats get cranky when the owner does not bring one! Has anyone been bitten? If you must feed your horse's "emotion", a safer alternative is lucerne chaff, a piece of lucerne cube, a milk thistle or grass weed out of the garden.