FIBRE: ESSENTIAL TO HORSE HEALTH

The horse is a non-ruminant herbivore. And like all herbivores, it can fill most of its daily energy requirements by eating plant fibre. In fact, at pasture, the horse spends more than 70% of its time grazing, as much as 18 hours a day.

Fibre is a desirable energy source for the horse, as are starch (grain) and fat (vegetable fat). What's more, fibre is indispensable to the horse's digestive balance. Indeed, to stay healthy, the horse must have at least 1% of its body weight in long stem fibre.

A MINIMUM THAT MUST BE MET

While it is often necessary to add grains, commercial feeds or vegetable oil to the diets of horses with higher calorie needs (lactating mare, growing foal, horse in training), fibre remains the most important ingredient in any equine diet. Generally it supplies enough energy for the horse's basic needs, such as breathing, digesting, grazing, walking and sleeping. Apart from the young 18-month-old horse in training, every horse should have at least 50% of its daily ration in fibre to maintain optimum digestive health. For most adult horses, this percentage can be increased considerably, sometimes to as much as 100% fibre, if the horse is not working, or if it maintains body condition easily.

How does the horse use fibrous feedstuffs? Fermented in the cecum and colon by billions of bacteria, the fibre ends up as volatile fatty acids, which can then be absorbed by the horse and converted to energy.

QUALITY AND DIGESTIBILITY

Depending on its origin, fibre can vary considerably in quality and digestibility. Fibre is comprised of three main substances: cellulose, hemicellulose, and lignin. Lignin, which gives plants their rigidity, cannot be digested by the bacteria in the horse's large intestine. The horse's energy needs are therefore met by cellulose and, especially, hemicellulose. A fourth substance available in fibre, pectin, is drawing growing attention. Extremely digestible, pectin is found in large quantities in beet pulp, soybean hulls, and young forages.

Much more than crude fibre (CF), a very imprecise value usually found on feed labels, the best indicators of a fibre's digestibility are the percentage of NDF (neutral detergent fibre) and ADF (acid detergent fibre). The only way to determine the NDF, ADF and CF values in what you are feeding your horse is through sampling and laboratory analysis.

PRINCIPAL FIBRE SOURCES

There are numerous fibre sources for the horse. The best known remain, of course, fresh grass and dry hay. It is important to understand that the digestibility of the fibre found in pasture and hay varies according to the climate, the time of year, and the degree of plant growth. Fresh grass is the most natural fibre source for horses, the latter having evolved to eat large quantities of it. Pasture grass that is 4 to 8 inches high generally offers very good digestibility for the horse. On the other hand, grass that is over 8 inches high is more mature and ligneous, with a corresponding drop in digestibility. This is why pasture maintenance is highly recommended, especially if it is the horse's only nutrition source.

With regard to hay, if harvested early in the season, while the plant is still young, the general fibre content will be lower than that of hay harvested later in the season, but its nutritional value will be higher. Hay cut when young will contain lower levels of lignin and, by the same token, display higher fibre digestibility than mature hay cut when it is in flower; at that point the stem becomes hard and fibrous, which affects palatability and fibre digestibility, in addition to lowering its nutritional value.

BEET PULP AND BRAN

It isn't always easy to find quality hay for horses. And at the price that hay bales sometimes sell for, horse breeders and owners are increasingly turning to a hay alternative.

Beet pulp remains a popular fibre source with people in the equine world. This highly digestible feedstuff comes from the fibrous portion of the sugar beet, once the sugar has been extracted. Served wet, it can be useful as a complement to poorer quality hay. However, like hay, beet pulp is not a complete food. For this reason, if the horse’s diet does not include an adequate portion of a good-quality complete feed, the beet pulp should be served with a complete vitamin and mineral supplement, such as Equilizer or Optimal.

Beet pulp can also be used for horses with teeth problems or senior horses that have trouble chewing. That being said, keep in mind that the calorie intake from beet pulp is low and is not enough to maintain a horse's body condition, especially if the horse is older. Adding concentrates should then be considered.

Contrary to popular belief, wheat bran, which comes from the outer covering of the wheat kernel, is not a choice source of fibre. Low in density, the fibre digestibility of bran is quite poor compared to beet pulp, which means that the horse will have to eat very large quantities of it to meet its needs. What's more, bran is high in phosphorus and low in calcium, which could lead to a calcium-phosphorus imbalance in the diet, especially for a growing foal. Serving it from time to time as a mash is not harmful - even though it often does more for the owner than for the horse -but serving it daily or as a fibre source is not recommended.

HORSE HAY EXTENDER

Horse hay extenders are an interesting alternative to hay. Consisting of fibre sources chopped and pressed into small or large pellets, hay extenders are convenient and easy to store. They generally have low dust content and their nutritional content is uniform and digestible.

However, horse hay extenders should not, ideally, replace more than 50% of the horse's hay ration, the fibre stem length in the cube being too short to keep the horse’s digestion healthy and active. For example, when adding a hay extender to the diet of a horse that is usually fed 8 kg of hay a day, one would feed a maximum of 4 kg of hay extender plus 4 kg of hay per day. When feeding horses both hay and hay extender, the hay portion should never be less than 0.5% of the horse's body weight. Dehydrated horses and greedy horses that tend to bolt their ration of hay extender are more at risk of choking (obstruction of oesophagus) and impaction colic. Soaking the feed in warm water until it’s been all absorbed before serving will help the fibre transit through the digestive system by slowing the horse’s intake. There are two Purina products that can be used as a hay substitute: Simplici-T Nature and Equilibrium Fibra Classic.

HIGH-FIBRE COMPLETE FEEDS

Complete feeds that are high in good-quality fibre are also recommended when hay is either scarce or of poor quality and digestibility, especially for the working horse or the horse whose body condition is difficult to maintain. Complete feeds that are high in digestible fibre are ideal for the special needs of these types of horses. However, be sure to ask your supplier about the quality of the fibre used. Indeed, in order to keep prices low and still show a high total percentage of crude fibre on the label, such feeds can contain a large volume of fibre sources that are poorly digestible to the horse. Soybean hulls and beet pulp, both highly digestible, should be the preferred fibre sources in this type of feed; it makes for a better quality product but, by the same token, a more expensive one too.

In addition to their high percentage of highly digestible fibre, complete feeds of this type have the advantage of providing many other nutrients that are essential to the horse, notably adequate amounts of vitamins and minerals. Also, the calorie content of these products being higher than that of the other fibre sources enumerated above, these feeds can at once replace part of the hay, while providing the horse with the energy needed to maintain body condition, whether the horse is in training or not. There are different fibre-based feeds on the market, some of them are formulated for the specific needs of the performance horse and others specifically formulated for the needs of the growing horse or the senior horse.

As with hay extenders, the fibre content of these feeds is especially high. It is recommended to wet feeds high in digestible fibre for dehydrated horses or for greedy horses that tend not to chew their food.

At Purina, the high-fibre complete feeds are SuperFibra Intégri-T (must be served wet at all times), Simplici-T Fibra, SuperFibra Plus, SuperFibra Classic, Evolution Maternity, Evolution Juvenile, Evolution Sport Elite, Evolution Senior and Equilibrium Trimax.