Feeds and feeding to avoid acidosis in horses

Wild Horses

Before domestication, wild horses grazed a diet of mixed pasture species, Horses have upper and lower teeth which allows them to select a variety of fresh, leafy herbage wherever possible. Since horses have small stomachs, wild horses spend about 65% of their time trickle feeding, ie eating small meals often.

With changing seasons, pastures mature and grasses form seed heads which also become part of their diets. The seeds of these natural pastures were small, contained a little amount of starch, and were consumed over the course of a day, not in single feeds. This diet was well suited wild horses, when their only demands were to maintain body condition and occasionally run from predators

Today's Athletic Horse

Our horses of today have a greater nutritional need because they are asked to do work. Modern horses are mostly ridden for pleasure and performance, and most of these horses are confined to barns, corrals or fenced in small paddocks. With grazing horses, pasture quality can vary from either very degraded paddocks, to ultra-lush pastures containing just one or two plant species. A large proportion of horses are kept in barns and corral's, and as these horses do not get to go shopping at the feed store, the only choice of feed they get is what they are given, which is hay plus some form of hard feed.

Nowadays we ask our horses to perform as an athlete, which increases their nutrient requirements - especially for energy. Since pasture cannot provide sufficient energy for performance, horsemen traditionally "hard" feed horses with diets based on grain. Grains are inexpensive and contain useful levels of certain minerals, small amounts of fiber and oils, and energy from starch. These grains include oats, wheat, maize, and barley, which are the seed heads of plants in the grass family. These grasses have been selected over the centuries for starch content, and now contain starch levels exceeding 60%. The horse however has only a limited capacity to digest starch (4g starch/kg bodyweight/meal), and feeding high levels of starch can cause *starch overload*, i.e. the horse cannot digest all the starch and it passes to the hind gut, causing hind gut acidosis..

What is Hindgut Acidosis?

The horse's hindgut is basically a large fermentation vat full of friendly bacteria, who ferment the fibrous feeds to produce energy for the horse. When confronted with a lot of starch, the bacteria rapidly ferment the starch producing lots of acid. The acid accumulates in the hindgut, causing 'hindgut acidosis'.

For more information or to order CoolStance/PowerStance, please call 803-647-1200 or e-mail Claudia@stanceglobal.com

Hindgut acidosis is a known cause of laminitis (or founder) and has even been linked to 'hot' or excitable behaviour in horses. Horses with hindgut acidosis can't utilise fiber nearly as well, and in chronic cases the condition can lead to B-vitamin deficiencies and poor appetite. Feeding high levels of grain (and hence starch) to horses is also linked with tying up, (EPSM and RER) and to various forms of colic.

High starch diets are "hot" feeds, and although starch feeding is linked to many of the metabolic disorders in modern horse nutrition, there is no requirement to give the starch and sugar (NSC) content on the bag tag.

What About Safer Starch?

Attempts have been made by feed companies to ensure better digestion of starch in the small intestine by extruding, steam-flaking, pelleting or micronizing grains. These processing methods do change the site of starch digestion, but they do not change the total starch content of the feed, and so doesn't reduce the risk of diseases linked to *starch overload* like tying up and colic.

The dilemma...how do you feed an athletic horse energy, without overfeeding starch?

What are the Energy Alternatives?

On a typical hay, pasture and grain-based diet, horses derive energy from starches, protein, digestible fiber and oil. Starches are potentially useful and safe in small quantities, but can be problematic when fed to excess and causing *starch overload***.** Feeding NSC levels above 10-12% in some horses can be problematic.

How about Protein or Fiber?

Protein is an inefficient energy source, which is expensive financially and metabolically and so protein should only be fed to provide the essential and non-essential amino acids required by the horse.

Digestible fiber is a desirable and safe source of energy, and is provided from pasture, hay and some feeds such as Cool Stance. Fiber is the most important and natural source of energy for non-performing horses, but fiber alone will not meet the energy demand for the athletic, performance horse.

Oil - an Appealing Option

Oil is the most useful non starch source of extra energy for athletic horses. Oil is 2 to 3 times more energy dense than starch or protein and once horses are adapted to it, oil is well accepted, digested and metabolised. Horses readily adapt to oil-rich diets and burn it to produce valuable energy for their muscles during medium and high intensity exercise.

Choosing the Good Oil

Oils are cool feeds, because they don't cause the metabolic disorders associated with starch feeds, and oil does not produce as much waste heat during digestion and metabolism as do other sources of energy. This is good news for hard working horses or horses living in hot climates.

Oils vary considerably however in the way they are metabolised. Most vegetable oils are polyunsaturated, slowly absorbed, and prone to rancidity. By comparison, the tropical oils such as coconut oil contain the unique medium chain fatty acids (MCFA) which are readily absorbed and digested, are not prone to rancidity, are very palatable, and can promote gut health.

CoolStance is a natural horse feed that provides the unique combination of a low NSC, good digestible fiber, balanced protein, and a MCFA oil to provide non starch energy to the athletic horse.

When fed sensibly, dietary oil can help to meet the energy challenge for the modern horse and reduce the reliance on starch-rich grains.

Remember...keep feeding simple....feed a balance of nutrients and don't overload with starch, and keep the feed/work balance.

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