Forage Nutrition for Horses

What's the best forage for your horse's needs? What affects the nutrient content of the plants in your pasture? Do you have highway grass; looking lush and thick when driving by, but thin with bare spots when walking through it? Do you have an easy keeper that doesn't need healthy grass because it makes him unhealthy?

Let's consider some factors to help understand what affects nutrient content in forage plants. The demise of many good horses can be attributed to ignorance. The lack of knowledge can cripple and/or be a killer.

Carbohydrates in Forages

There are two basic types of carbohydrates in forages. One is Structural Carbohydrates that is in cell walls and includes cellulose and hemi-cellulose. The second is Non-structural Carbohydrates (TNC) that is inside cells and includes sugars, starch and fructan (a type of sugar). The TNC are the ones that can cause problems with laminitis (founder) and/or in horses that have metabolism challenges.

Note: There are also Non-fiber Carbohydrates (NFC), a fraction of plant nutrients calculated by proximate analysis that includes NSC plus pectin and organic acids.

The levels of TNC in a plant vary with the rate of photosynthesis and respiration. Photosynthesis is the plant's creation of sugars from sunlight energy, water and carbon dioxide. Respiration converts those sugars into energy for growth.

The TNC accumulate in many plant parts (leaves, stems & roots) when the rate of photosynthesis exceeds the rate of sugar utilization (respiration and growth). This happens when there are very sunny days and cool nights; normally in the spring and fall seasons. The rates of photosynthesis and respiration determine in large part the amount of TNC in the pasture and hay.

Knowing that shade slows photosynthesis, you might choose to put the horse prone to founder in a shady pasture instead of the sunny one so his forage isn't as "rich". Or if you want lower-sugar hay, cut your hay field after a few days of cloudy weather. Lack of sunlight slows photosynthesis reducing the production of sugars that can be detrimental.

Things to know about forages and carbohydrates:

1) Lower portions of stems are higher in TNC than upper portions (overgrazed pastures tend to higher concentrations of TNC than healthy plants).
2) Developing seed heads are very high in TNC.
3) Stems have more TNC than leaves.
4) TNC is often high in stem bases, stolons and rhizomes (underground stems and roots) of mature plants.
5) Carbohydrates are usually high in spring and fall (cool temperatures and bright sunlight).
6) Fructans occur on cool-season grasses under cool conditions.
7) Mature grasses generally have lower TNC.
8) Some TNC are lost from harvested hay during drying time, especially if it has been rained on (TNC is water-soluble).
9) Protein content is generally high when photosynthesis is high, and increases with nitrogen application.
10) Mineral content varies with many factors; plant part, stage of growth, soil moisture, soil fertility, and harvesting conditions.

Remember, the textbooks offer generalities about forage; real values must be measured. Visual observation for judging forage quality is not a good indicator, forage analyses are best. And, much of the "organic hype" is a hoax. There is no scientific basis for a lot of it.

Mineral Nutrition for Horses

Is your horse getting the daily minerals that are required to maximize his health and performance? Does your hay, pasture and/or grain provide all of the necessary daily minerals for your horse? A yes answer to these questions is very doubtful.

Adding *MAXIMUM PERFORMANCE* horse supplement to your feed program will go a long way to balance your horse's diet. *MP* will provide the daily minerals and vitamins needed to maintain a healthy horse.

Phyllis McMurry Tate added *Maximum Performance* to her horse feed program. She tells us a couple of her "success stores">>>

"My 17-year-old Palomino Quarter Horse mare came out of the winter with a very heavy, wooly coat, which she was not shedding out. She is cresty of neck and heavy; a possible Cushing's sufferer. We started giving her Maximum Performance free choice in a stall feeder. Within two weeks, the hair coat began to come out forming a thick blanket on the floor of her stall. She is now a slick golden color. The cresty neck is still partially there, but she is loosing weight, has more energy, and is reaching a healthier state. She has perfect feet, no chips or cracks in spite of her weight and the hard summer ground."

"A friend's retired 26-year-old Quarab mare has a 5-year history of Laminitis, complicated by severe hypo thyroidism. She had feet plagued by abscesses, structural failure and pain. Her feet were so dished out that they were almost dinner plate size, even though she is a small horse. She has had a multitude of drug therapy (Bute, thyroid powder, circulatory stimulants, etc.) and endless Ferrier procedures (excision of dead hoof tissue, pads, hoof ointments, shoeing in various odd conformations, etc.). With Maximum Performance, good nutrition (oats and rice bran with good grass hay) and weight management, the bloated, blimp of a horse is gone, her feet are now near perfect; straight, strong hoof wall. And, best of all, she has been declared sound for riding!"