



Equi-Analytical Laboratories

Winter 2016 Newsletter

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Using Your Roughage Analysis in Natural Feeding

*Special guest article by independent horse nutritionist Alexandra
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Why is roughage important?

When I speak to horse owners about how they feed their horses, most of them tend to focus on the manufactured feeds they give and consider roughage as a filler. However, roughage or forage provides many nutrients. On top of that, it has many other valuable characteristics for horses. A roughage-based diet supports a healthy hindgut where billions of bacteria ferment the roughage, releasing nutrients and producing vitamins. The same fermentation also produces heat and serves as an 'internal stove' to help maintain a normal body temperature. A roughage-based diet can also support performance, as it enhances the ability of the hindgut to serve as a water and electrolyte reservoir which is especially beneficial in endurance sports.

In nature, horses spend most of their time grazing (14 to 18 hours per day). Roughage therefore provides a great deal of entertainment. Cutting down feed intake, for example by replacing a lot of roughage with smaller amounts of concentrates, leads to boredom and frequently results in stereotypical behaviors, such as crib-biting/windsucking and weaving. Horses' teeth are suited to wear down with naturally prolonged, extensive chewing and generally wear down correctly by chewing roughage.

Furthermore, the chewing action stimulates the production of saliva, which buffers stomach acid and naturally supports a healthy stomach lining and the prevention of gastric ulcers. Altogether, roughage-based diets support physical and mental health and well-being of horses, plus help to prevent the development of stereotypical behaviors and digestive problems frequently associated with cereal-based diets.

In pointing out the benefits and necessity of plenty of roughage in the diet, I frequently encounter concerns about how well roughage will cover nutritional requirements. With such a strong focus being placed on manufactured feeds, it can be hard to believe that a suitable roughage can cover the nutritional requirements of most horses. Protein is usually of good quality and minerals are generally provided in a good ratio in many grass species. Vitamin content in roughage is usually sufficient to cover requirements and fresh grass contains

omega-3 fatty acids which are known to have anti-inflammatory effects. Having said that, the nutritional composition of roughage is affected by many factors, including maturity, plant species, and time of day. As grass matures, it provides fewer energy and nutrients, and drying (for example, into hay) can further decrease values, especially of vitamins. Dietary shortfall by feeding roughage alone is therefore possible. When considering the number of horses that are overweight, however, dietary excess should be just as much of a concern.



Alexandra with her horse, Sensation

Determination and utilization of nutritional value

The trick to getting feeding right is through knowing the energetic value and nutritional composition of your feeds, together with knowing how well these suit your horse's requirements. Nutritional requirements need to be determined for horses on an individual basis and are affected by multiple factors, including body weight, exercise level, and breeding status. Nutritional content of roughage may be estimated with a ballpark figure, but in order to know its actual value, a roughage analysis is required. A roughage analysis can include moisture, dry matter, digestible energy (DE), crude protein with estimated lysine, fat, acid, and neutral detergent fiber (ADF and NDF), lignin, ethanol soluble and water soluble carbohydrates (ESC and WSC), non-fiber carbohydrates (NFC), starch, minerals, and trace elements. Some companies, including Equi-Analytical, offer a variety of analytical packages and pricing. These are very useful for obtaining a nutritional profile for particular uses, such as a fast analysis for main components, an analysis specifically for those concerned about

carbohydrate levels, or a comprehensive analysis for those who wish to take their horse's nutrition to the next level.

The numbers on the analysis report are the one side of the coin for formulating your horse's diet. On the other side are the nutritional requirements and the eating capacity of your individual horse. Using these figures, the analysis report can be interpreted and a diet formulated. Nutritional requirements are dependent on multiple factors and involve a number of calculations. You can use general guidelines to do these calculations, ration evaluation software, or you can leave the calculations and report interpretation to a horse nutritionist. Natural Feeding (see below) also shows a method for determining nutritional requirements and comparing these to a roughage analysis. Whichever way, the analysis report needs to be compared to requirements in order to formulate your horse's diet.

Recommendations

I recommend formulating the diet to contain as much roughage as your horse's nutritional requirements allow. Ideally, a horse would have constant access to roughage, whether it is pasture or a preserved roughage such as hay. Depending on how much your horse can eat, your roughage can be one of three things: it may be perfect for your horse's requirements; it may not (entirely) cover your horse's requirements and require supplementation in certain areas highlighted by the analysis; or it may be too rich. Depending on its form and nutritional composition, a less rich roughage can be mixed in; it can be soaked or pasture management methods can be undertaken.

Even if your horse's roughage does not suit requirements perfectly, there are still ways to provide a continuous roughage supply. Roughage should always form the foundation of the diet and ideally, be provided on a continuous basis throughout the day.

Alexandra is an independent horse nutritionist who writes, consults and presents on horse nutrition. As part of her MSc in Animal Science, she studied the effect of different roughage-based diets on the hindgut health of horses. Author of *Natural Feeding for Horses*, she puts the health of the horse first by reasoning from what they need by nature. Read more of her articles or contact her via <http://www.HorseConsult.co.uk>.

Natural Feeding for Horses is a roughage-based feeding system for horses that guides you in assessing your horse's requirements, comparing them to your roughage and making horse feeding more natural. Find out more about the Natural Feeding approach at: <http://www.NaturalFeedingForHorses.com>

Come and visit us at
these upcoming events!

February

Sunday 2/14: Rutgers Horse Management Seminar: "Why do they do that? Behavior and Training of Horses"
8 AM to 4PM at the Cook College Campus Center

<http://esc.rutgers.edu/outreach-events/>

Friday 2/19: Kentucky Hay School
9 AM to 3 PM at the Kentucky Dam Village
\$10 each. Call 270-928-2168 to register

Thursday and Friday 2/25-2/26: 2016 Idaho Hay and Forage Conference, Burley, ID.

<http://www.idahohay.com/conference.htm>

Introducing the Dairy One and Agro-One Pasture Management Package

The Dairy One Forage Lab and the Agro-One Lab are offering a package to help you better understand your pasture. The package is designed for use in one pasture during a growing season. Testing your pasture from top to bottom (clippings and soil) will tell you what you are providing for your animals and what you might need to supply for your pasture.

Pasture Management Package Includes:

Forage Testing You will get 3 Forage testing kits and sample submission forms to be used throughout the grazing season.

Soil Testing One soil sample to determine the nutrient needs of the pasture (Phosphorus, Potassium, and pH)

Interpretation Each forage sample result will come with an interpretive sheet. The sheet will have the Dairy One Forage Lab sample ranges for comparison to your results and some management suggestions for changing your pasture.

Price \$75.00

(includes all shipping costs and is a 15% savings over list price)



Dairy One
Forage Laboratory



Agro-One
Agronomy Services

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