

Building a Nutritional Foundation for Distance Riding

The Foundation is Forage

- Pasture, hay, hay pellets or cubes, beet pulp fed at 1.5 to 2% x Body Weight or more
- Provides much of the protein, energy and electrolytes needed by most horses
- Serves as a reservoir to hold water in the hind gut

Grass Hay vs Alfalfa

- Alfalfa alone may provide too much energy (calories) while not providing enough gut fill
- Protein is an inefficient source of energy
- Excess protein in alfalfa can increase urine output leading to dehydration
- Excess calcium levels can affect the hormones (calcitonin, calcitriol and parathyroid hormone) that regulate mobilization of calcium levels in the blood, contributing to the metabolic disorder “thumps” [asynchronous diaphragmatic flutter]

Energy

- Most horses at maintenance or light work can meet their energy (calorie) needs by fermentation of fiber in the hindgut
- Additional energy can be provided by
 - Increasing amount or changing type of hay fed
 - Increasing carbohydrates (sugar and starch)
 - Increasing fat (normal grass/hay diet is 2-3% fat)
- Adding a more digestible hay such as Timothy or oat hay or including beet pulp can improve long term energy availability without adding grain
- Sugars and carbohydrates provided by grains are converted to glycogen and provide a quicker source of energy which can be utilized for fast anaerobic exercise (sprints, hill work)
- Fats require oxygen and glycogen to produce energy and are best utilized for longer, slower distance work. Up to three months are required for the horse’s metabolism to shift to utilizing fat as a primary energy source.

Electrolytes

- These are primarily the minerals Calcium, Magnesium, Potassium, Sodium and Chloride.
- Unlike humans, who often have diets deficient in Potassium but high in salt, most horses receive four to ten times their daily requirement from their forage intake but do not receive enough Sodium and Chloride.
- Sweat losses are mainly Sodium, Chloride and Potassium, with smaller amounts of Magnesium and Calcium.
- Horses should start competition with adequate stores of both water and electrolytes
 - Forage helps the horse store water and electrolytes in the hind gut
 - Supplementing salt (NaCl) - and calcium and magnesium if needed - on a daily basis to meet the daily requirement at the horse’s work level ensures an adequate reserve on competition days
- Some commercial electrolytes are high in potassium, low in sodium and chloride

- Look for electrolytes with twice as much chloride as sodium, and potassium slightly less than sodium (see link in resources for comparison chart)
- Electrolytes formulated for sweat losses without first meeting the daily baseline requirement for NaCl will not encourage your horse to keep hydrated.
- If your horse is already dehydrated and doesn't want to drink DO NOT give electrolytes. He needs fluids by tube or IV.

BCS - Body Condition Score

- Ideal for endurance or distance riding is 4.5 to 5.5 (can discern ribs when moving)
- Less than 4.5 - not enough reserves for longer distances
- Higher than 5.5 - less efficient cooling
- See BCS link for good examples

Further reading and resources

American Endurance Ride Conference

<http://www.aerc.org/default.aspx>

Under the Education Link you'll find articles and links on a variety of topics.

Archived Issues of Endurance News

http://www.aerc.org/EN_Archived.aspx

Archives contain selected articles back to January 2008.

Articles by Ken Marcella, DVM, Endurance Vet

<http://www.klmequine.com/client-education/>

Articles by Susan Garlinghouse, DVM, Endurance Vet and competitor

http://www.allcreaturesanimalhealth.com/site/view/212994_EquineNutritionArticles.pml

HAY FOR HORSES: ALFALFA OR GRASS? - Anne Rodiek, PhD, CSU Fresno

<http://alfalfa.ucdavis.edu/+symposium/proceedings/2001/01-061.pdf>

Good BCS description and photos here

<http://msucares.com/livestock/equine/pdfs/p2465-horses.pdf>

Karen Chaton's Blog - Electrolytes comparison chart

<http://enduranceridestuff.com/blog/electrolytes/>

Analyzing Hay and Feeds - how and where

<http://www.desertequinebalance.com/articles/analyzing-hay-and-feeds>