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PNER Seminar 2004

**Pacific Northwest Endurance Riders Conference
Jan 2004 Conference Reports**
from ERABC Members who attended the Conference

Speakers were

- Susan Garlinghouse on "Supplements"
- Carla Person, Shaman, on "Animal Communication"
- Beth Valentine on "Why Feed Fat" and PSSM Diet
- Rick Synowski on "The CMK Horse"
- Susan Garlinghouse on "Beating the Metabolic Pull"

1. Notes compiled by Shari McFarlane and Karen Ellis
2. Polysaccharide Storage Myopathy (Muscle Disease - PSSM) - Terre O'Brennan's Report
3. Carla Person's Animal Communication - notes by Linda Karius
4. PSSM Diets - Beth Valentine's handout

1. Notes compiled by Shari and Karin

- don't waste time and money on hair analysis for nutritional status...does not work.
- blood samples no good for vitamin/mineral status but do work for e-lytes and selenium.
- forage analysis recommended.
- biotin recommended for endurance horses...15-25 mg/day
- horses that tie up...add vit E and selenium to diet
- vit A helps soft tissue...found in grass pasture and carrots (feed 2 lbs per week). vit A very sensitive to heat so not wise to purchase as "supplement"
- vit C not needed as a supplement as horses manufacture their own in their liver
- iron supplements interfere with vit C absorption
- our horses here in the northwest need SELENIUM...4-5 mg/day (toxicity levels about 20 mg)..some horses will need as much as 7-8 mg of selenium per day
- adding supplements (except for selenium) not needed if feeding 4-5 lbs of commercial horse feed per day
- stick with big name brands of feed as they are doing lots of research...ie purina
- flax is great for coats
- extra vit B and brewers yeast no good for endurance horses as acts as diuretic (makes them pee more and increases dehydration)
- joint supplements best given as injectables..ie adequan or legend
- can give horses up to 2 cups of oil (fat) per day per 1000lbs...soy oil cheapest, canola or corn oil also okay. flax oil and olive oil quite expensive but good

Metabolic Stuff

- endurance horses sweat 1.5-3.75 gallons per hour
- about 40 gallons on a 50 mile ride
 - 4% dehydration...performance affected
 - 6-8% " "2-3 second cap refill time
 - 10% " " (3 second cap refill time)....treatment needed
 - 12% " "death
- horses can only replace 2/3 of lost fluids by drinking

For Sat Ride

- feed lots of wet hay and beet pulp week before
- avoid large meals before or during ride
- let horse eat small amounts many times during ride, go no more than 2-3 hours in between meals (helps avoid fluid shifts)
- feed carrots...10 lbs of carrots equals 1 gallon H₂O
- E-lyte small doses but often
- avoid hi protein feeds..no more than 10%
- protein produces heat! Energy is required to process protein, producing uric acid, requiring the horse to pee which further dehydrates the horse.

Gut motility:

- food in stomach cause hormones release
- bulky foods (beet pulp) react with stretch receptors triggering hormonal response which increases motility
- therefore better to feed hay or beet pulp rather than grain due to "bulk"
- tired horses do not produce enough saliva and prone to choke...good idea to soak hay rather than feed dry
- wheat bran does NOT act as a laxative for horses and provides only limited nutrition
GI tract at bottom of "pecking order"
- as intensity of exercise increases, blood is shunted away and guts slow down (due to excessive demand elsewhere)
- if one follows the rules of good hydration, gut motility is usually okay

Polysaccharide Storage Myopathy notes compiled by Terre O-Brennan

A brief report on Dr. Beth Valentine's presentation to the 2004 PNER Convention on "Why Feed Fat". I'm going to do this in bullet form—I think it will be more understandable that way!

1. Horses did not evolve to eat grain; they evolved eating forage. Grain (carbohydrate) metabolizes into glucose and is stored as glycogen (a polysaccharide) in liver and muscle; forage metabolizes into volatile fatty acids and is stored as fat throughout the body.
2. We feed grain to working horses to supply extra energy; until recently it was believed horses could not digest fat, since they lack a gall bladder. In fact, they *can* metabolize fat; they simply use a different mechanism than omnivores.
3. Glycogen (from grain) is ideally stored throughout muscle tissue in a diffuse, even pattern than makes it readily accessible to working muscle tissue. In many horses*, however, it is being stored in big "clumps", which makes it less available and negatively impacts muscle function.
4. Horses that exhibit this storage pattern are prone to various muscle problems including tying up. Other problems range from diminished performance, to undefinable lameness, to 'shaking', cramping, etc.
5. In many horses, these problems can be resolved simply by eliminating or severely restricting grain intake. (a number of videos were presented).
6. If these horses require extra energy for work, that energy should be supplied in the form of oils and fats rather

than grain. (diets appended)

*sidebar: Dr. Valentine found this pattern in 60% of draft horses and 30% of 'light' horses. Ie, they necropsied all the dead horses available to the university, and found this in a 'random' population. Interesting points: these numbers are high enough to suggest to me that this is not a 'storage abnormality', but may in fact be a fairly normal response to an abnormal diet—grain. Dr. Valentine speculates that these high numbers (compared, presumably, to prehistoric wild horses) are due to centuries of human breeding for increased strength and agility; in other words "improved muscle". The difference between draft and light horses might be accounted for this way; draft horses will have been bred specifically for strength longer and more intensively than light horses.

PS—there was no "gender bias"—mares did not exhibit the abnormal storage pattern in higher numbers than males. It appears that this disorder triggers typing up in mares more often than males; it manifests with other symptoms in geldings and stallions but is present as frequently.