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# Kulshan Veterinary Hospital



**FORT DODGE**

# Nutrition

## ❖ **Body Condition Score—BCS**

- **Ranks horse's physical condition**
  - **Scale 1 (poor) to 9 (extremely fat)**
  - **Scores of 5 (moderate) to 7 (fleshy) optimum**
- **Assess fat in specific areas visually and by palpation**
  - **Ribs**
  - **Neck**
  - **Withers**
  - **Shoulder**

# Body Condition Score

- ❖ **1-3 extreme to moderate thinness**
- ❖ **4-6 ideal**
- ❖ **7-9 increasing stages of obesity**

# Geriatric Feeding

**Loss of muscle mass in geriatrics  
Activity, protein absorption, ?**

**(Hintz, Proceed Cornell Nutri Conf,  
1995)**

**In geriatric rats (?) suppl leucine  
may enhance muscle mass  
maintenance...**

**Alfalfa may be rich in leucine =>  
might be beneficial in preventing  
muscle loss ????? (Siciliano, Vet Clin NA,  
2002)**

# Geriatric Feeding

- ❖ **Immuno-suppression may be related to adrenal tumors, protein malnutrition, mineral deficiency**
- ❖ **Geriatric's may have a reduced response to Influenza vaccination (?)**

# Concentrate Feeding

- ❖ **Low activity - no riding or 1-2X/week**
- ❖ **100% Forage**
- ❖ **Trace mineral mix**
- ❖ **10% CP**

- ❖ **Moderate activity**
- ❖ **3X/ week**
- ❖ **< 25% concentrate**

- ❖ **Strenuous activity**
- ❖ **<40% concentrate**
- ❖ **Daily exercise -  
reiners, jumpers,  
race horses in  
training**

- ❖ **Elite athletes**
- ❖ **<50%**  
**concentrate**
- ❖ **Race, endurance**

# Feeding and Colic

- ❖ If feed 2 large CHO's meals daily.....expect for increase incidence of colic (GI ulcers, DOD, myositis)
- ❖ Feeding > 6 # grain/day increase incidence of colic & founder

# Feeding and Colic: Lowered risk

- ❖ Whole grain.
- ❖ No grain.
- ❖ Turn out 24 hours per day.
- ❖ Foals weanlings and yearlings.
- ❖ Mixed breed horses.

# Colic & Feeding

- ❖ Establish a routine (feeding, exercise, turnout, etc)....and **DON'T** alter it
- ❖ Feed roughage based diet, divide concentrate into **>2** feedings
- ❖ Parasite control (including small strongyles & tapeworms)
- ❖ Don not feed on ground (sandy soils)

# **Insulin Resistance**

**Horses with a BCS >7 will usually be more likely to develop insulin insensitivity**

**(Davison, Proceed Purina Eq Nutri Symp, 2005)**

**Regular exercise increases insulin sensitivity in horses**

**(Powell et al, Eq Vet J, 2002)**

**Greater insulin insensitivity in obese horses, and in horses consuming higher NSC diets vs those consuming low NSC diets**

**(Williams et al, J Anim Sci, 2001)**

# Super Fiber Sources

- ❖ **Fiber feeds which are good sources of energy are: almond hulls, beet pulp, citrus pulp, cereal-by-products, oat hulls, rice bran**

# Beet Pulp

- ❖ **Can be with w or w/o water**
- ❖ **Good Source of Structural CHO's**
- ❖ **May improve hay digestion**

**(Moore-Cloyer Eq Nutri Phys, 2001; Hastic Eq Nutri Phys 2001)**

# Feeding Fat to Horses

- ❖ **Most energy dense feed**
- ❖ **Vegetable oil is a very palatable form of fat**
- ❖ **Easily feed 30% of caloric intake as fat, if slowly introduced**
- ❖ **During low to moderate exercise, horses can mobilize FA from adipose tissue => sparing glycogen => delaying fatigue**

# Omega 3 fatty acids

- ❖ Omega -3 fatty acids may enhance **fat & insulin** metabolism and decrease inflammation (? - Wilson 2003)
- ❖ Horses can't make omega -3 & corn-veg oil has little - none (canola, soy, linseed oil)

# Omega-3 FA's & Reproduction

**Dietary modification to increase Omega-3 FA in semen can improve motility of cooled-stored & frozen-thawed spermatozoa (marginally fertile stallions or those that don't cool or freeze well )**

Brinsko et al, AAEP Proceed, 2003; Brinsko et al, Therio  
2005

❖ **Feeding a supplement that increased Omega-3 => increased DSO, % normal spermatozoa**

Harris et al. Animal Repro Sci 2005

# Feeding Horses and Vit A

- Forage stored > 1 yr or rain damaged may have decreased Vit A activity during winter
- If not on pasture or green intake... consider suppl retinyl-palmitate (Greiwe-Crandall JAS 1997)

# Geriatric Feeding

## Biotin ?

- **15-30 mg/d may be of benefit in older horses with chronic laminitis...** (Buffa Eq Vet J 1992, Jossek Eq Vet J 1995, Reilly Eq Vet J suppl 1998, Zenker Eq Vet J 1995)
- **Older horses had lowered response to very low conc of suppl Biotin than did younger horses** (Frane 1998)

# Geriatric Endocrine Disease

## ❖ Decreased circulating Thyroid Hormone:

- **Energy rich diets** (Glade J Endocrin, 1985)
- **CP, Zn, Cu, I rich diets** (Swinker, J Anim Sci, 1989)
- **High CHO to roughage ratio** (Powel,1997)
- **Feed deprivation** (Messer AJVR, 1995)
- **Grazing Infected Fescue** (Auburn

# Equine Mineral

**Good quality mineral salt mixture designed for your locale (12-10% Ca, 10-8% P, trace minerals..., 90 ppm Se, salt) offered free choice in normal animals.**



Making a *difference*  
in the *life* of your horse.



ANIMAL HEALTH