Horse Nutrition

S. P. Schmidt
Horse Digestive Tract

- Esophagus: 4-5 feet
- Stomach: 8-17 qt
- Small intestine: 70 feet, 48 qt
- Cecum: 4 feet
- Small colon: 10-12 feet
- Large colon: 10-12 feet
- Rectum: 14 qt
- Anus: 1 foot
- Large intestine: 29 feet
- Total: 130 qt
Horse Digestive Tract

- Relatively small stomach
  -
- Small intestine
  -
Horse Digestive Tract

- Large hind-gut
- Graze 15-20 Hours per day
Feeding Horses

- **Don’t** feed more than a few pounds of grain
  - System doesn’t work well
  - Can’t digest all the starch
  - Colic or founder could occur
Feeding Horses

- Rule of Thumb:
  More than 6 lb of grain, split into 2 or more feedings spaced throughout day

- When measuring amount of feed use weight, not volume
  - Horse require a certain weight of nutrients based on body weight
Feeding Horses

- Colic (abdominal pain)
Feeding Horses

- Colic (abdominal pain)
  - Diet causes
Feeding Horses -- Colic

- Odd design of the cecum
  - Feed enters at top & expelled at top
  - Entrance and exit only 2-3 inches apart

![Diagram of horse intestines showing the cecum, small intestine, and large intestine.]
Feeding Horses

- Founder (also called laminitis)

- Causes
Founder (Laminitis)

- **Normal**
  - Hoof wall and laminae are parallel

- **Founder**
  - Laminae distorted
  - Coffin bone rotated down
  - Pushes sole down
  - Horse lame (tender on feet)
  - Abnormal hoof growth (tip of hoof wall curls up)
Feeding Horses

- A horse should be shifted from one type of feed to another over a period of 2-3 wk
  - Gives microorganisms in cecum time to adapt
  - Example:
    - Period 1:
    - Period 2:
    - Period 3:
    - Period 4:
    - “Period” may be 3-4 days to a week
Feeding Horses

- Nutrition based on forages
  - Pasture
  - Good quality hay
    - Remember...horse cannot vomit to get rid of “bad” feed
- Limit grain
  - If needed, feed small amount several hours apart
What type of grain feed?

- Keep it simple
  - Expensive or complex feed not necessary
- For someone with few horses, can get by with just one feed
  - 12% protein if grass/grass hay fed
  - 10% protein if alfalfa used
- Grains – oats or corn/oats mixture
- Protein – soybean meal (linseed meal)
- Ca & P from dicalcium phosphate & limestone
- Molasses? – reduce dustiness; palatability
Feed Allowances for Horses

- Normally consume 2-2.5% of BW (DM)
  - Weanlings & Yearlings may eat 3-3.5% of BW
- As grain intake \( \uparrow \) total DMI \( \downarrow \)
- Frequency of concentrate feeding:

<table>
<thead>
<tr>
<th>Amount of concentrate fed daily</th>
<th>.5% BW</th>
<th>1.0% BW</th>
<th>1.5% BW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency of feeding the concentrate</td>
<td>1X per day</td>
<td>2X per day</td>
<td>3X per day</td>
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Feeding the Pleasure Horse

- Difficult to keep horses used for recreation in desired condition...
  - used irregularly & variable degrees of work

- Suggested daily feed allowance:

<table>
<thead>
<tr>
<th></th>
<th>Lb Daily/100 lb BW of Horse</th>
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<tbody>
<tr>
<td></td>
<td>Light use</td>
</tr>
<tr>
<td>Hay</td>
<td>1¼-1½</td>
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<tr>
<td>Grain</td>
<td>0 - ½</td>
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Hay/ pasture only is adequate most of the time, even light use.
Examples of Working Horses

- **Light work**
  - Western and English pleasure, bridle path hack, equitation

- **Moderate work**
  - Ranch work, roping, cutting, barrel racing, jumping

- **Intense work**
  - Race training, polo