RATION FORMULATION

Equine Nutrition #6

Created for Canadian Pony Club Education

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ESTABLISHING A PLAN

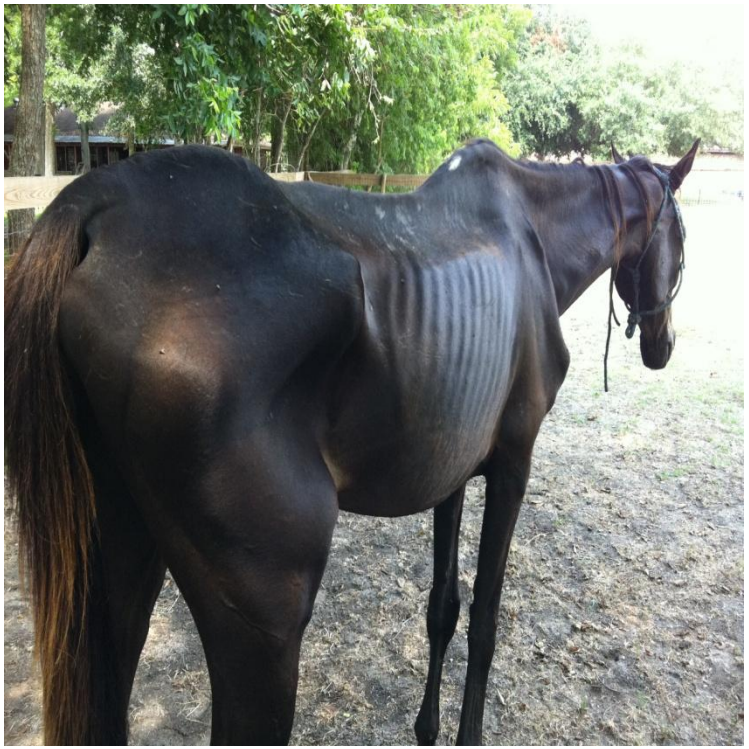
- When creating a ration formation, consider:
  - Age of the horse
  - Size of the horse
  - Breed of the horse
  - Temperament of the horse
  - Health and condition of the horse
  - Current weight of the horse
  - Amount of exercise horse undergoes
  - Living conditions of horse
  - Season
  - Access to pasture
  - Quality of feedstuffs available

BASELINE - ESTABLISH BODY SCORE

- The Henneke Body Condition Scoring System (Henneke et al, 1983) is a rating system that allots scores between 1-9 for amount of fat on a horse's body
- The areas where fat can be most readily gauged will be the:
  - Loins
  - Ribs
  - Tail head
  - Withers
  - Neck
  - Shoulder
    - Each of these areas is graded, then the scores are averaged
- An ideal score would be between 5 and 7

WEIGHT EXTREMES

Fat pockets; top of body score chart



No fat on body; bottom of chart

BODY WEIGHT

- All nutritional calculations are based on body weight
- There are three main ways to establish a horse's body weight:
  - Scale or weighbridge
  - Weight tape
  - Standard measuring tape
- To establish weight using a standard measuring tape:
  - Measure the heart girth (in cm)
  - Measure the length of the horse from point of shoulder to point of buttock (in cm)
  - Heart girth squared, multiplied by the length, divided by 11877 will give you body weight in kg

MAINTENANCE VS. WORK

Nutritional requirements will be set based on amount of work horse performs

- Maintenance
  - Not breeding, pregnant or lactating; not working at all
- Breeding
  - Mare in foal (last 7 months); lactating; breeding stallion
- Growing
  - Foal to yearling
- Working
  - Light work
    - Green horses or hacking
  - Moderate work
    - Lower level eventing/dressage/hunters or jumpers
  - Heavy work
    - Upper level eventing, racing, endurance

General Rules

- Establish horse's weight
- Establish horse's work level
- Base feedstuff amounts on maintenance ration, then add on extras
- Feedstuff amounts required for:
  - maintenance:
    - 2 pounds per 100 lbs of body weight (0.9 kg per 45 kg of body weight) or 2% of body weight
  - Light work
    - 2 pounds per 100 lbs of body weight or 2% of bodyweight
  - Moderate work
    - 2.25% of body weight
  - Heavy work
    - 2.5% of body weight

MAINTENANCE DIET

- The maintenance diet can typically be made up of forages
- This horse should be fed 2% of its bodyweight
  - Exceptions would be based on individual horse due to metabolic rate or other factors
  - Low temperatures may necessitate an increase in energy requirements
  - This horse may need a vitamin/mineral supplement

LIGHT WORK

- Feed as per maintenance rations
- 2% of body weight
  - So, for instance, a 1000 lb horse will require 20 lbs over the course of a day
    - this includes all grass, grain, hay and supplements he consumes
- Forage should cover requirements, but if adding supplemental feeding (grain, oil, etc.):
- Ration should be maximum 30% supplementals
- Determine type of supplementals to be fed based on:
  - Intensity and duration of work
  - Temperament of horse
  - Clinical condition/health of horse

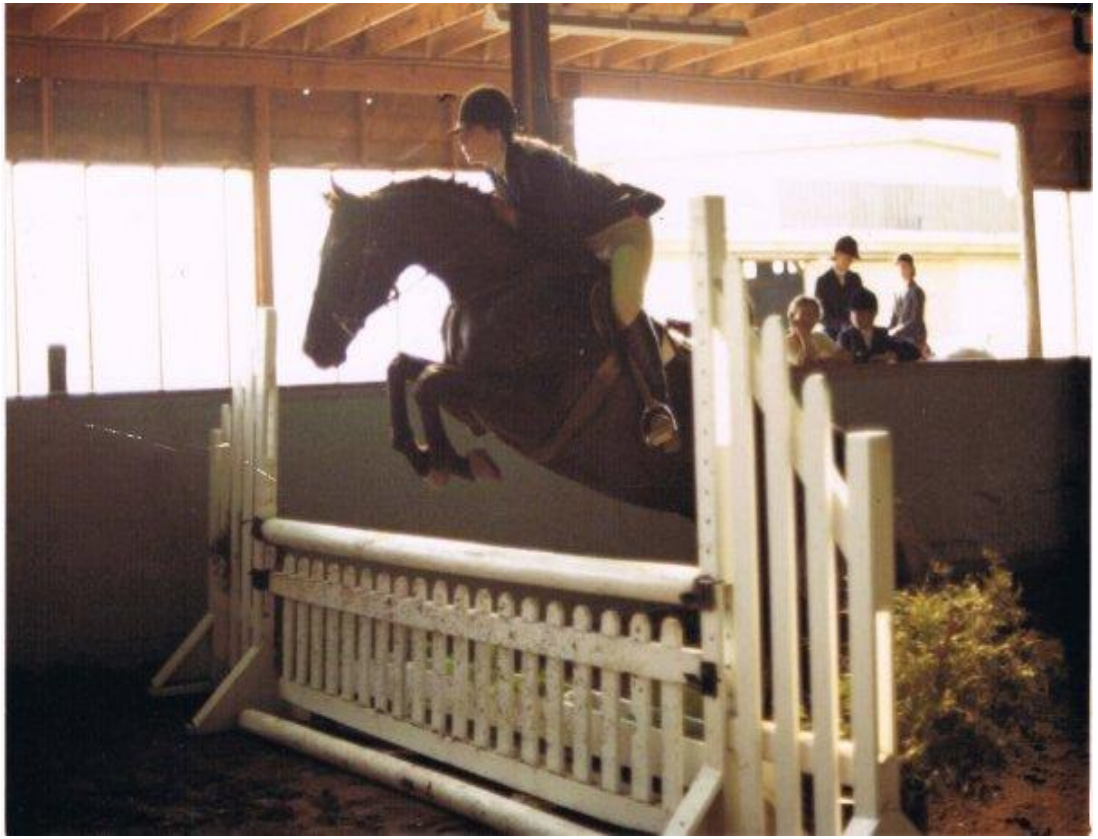
LIGHT WORK

A horse or pony doing lower level Pony Club (up to D2 level) could be considered to be in light work

MODERATE WORK

- Feed up to 2.25% of bodyweight
- Supplemental feeds (grains, etc.) should not exceed 30-40% of ration

MODERATE WORK



Dressage is considered moderate work, as is hunters, jumpers, and lower level eventing (up to Training level)

HEAVY WORK

- Horse may require up to 2.5% of body weight
- Supplemental feeding should not exceed 40-50% of ration
- Extremely important that forage should not drop below 50%
- This can result in:
  - digestive disturbances
  - an increase of stable vices, in particular chewing, cribbing, etc. – horse is adapted to be chewing constantly

HEAVY WORK

ANOTHER FORMULA TO TRY

- One other formula that one could use to calculate food needs over a 24 hour period:

- Weight of horse X 2.5/100= amount to be fed

CALORIES VS. MEGAJOULES

- Energy is calories
- In horse diets, we measure in megajoules (MJ)
- 1 MJ = 239 calories

DIGESTIBLE ENERGY

- Digestible energy is the amount that is digestible in the gastro-intestinal tract
- Amount eaten – amount expelled in feces = amount absorbed in GI tract
- Amount absorbed in GI tract = digestible energy

HIGH MAINTENANCE NEEDS

WHAT SHOULD YOU BE FEEDING?

- Start with the best hay you can afford
- Supplement with pasture if at all possible
- If horse requires more than this due to work load or individual needs, add grain
- What grains should you feed?
  - That depends on the horse and work requirement
  - If in doubt, talk to your vet or nutritionist

QUESTIONS

- 1. List some of the considerations to make before creating a feed program for a horse.
- 2. Outline the steps to estimating a horse's weight.
- 3. Explain the Henneke Body Scoring system.
- 4. What is the difference between a horse in moderate and hard work, and give an example of each type of work.
- 5. How do we measure energy requirements for horses?
- 6. Create a feed program for a 16 hand horse in moderate work.