



Dietary management

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Learning Outcomes

By the end of this section you should be able to:

- Define the nutrient requirements of horses and ponies, and provide recommendations on rations



Dietary management



Content

- Determining bodyweight
- Condition scoring
- Nutrient requirements
 - Horses at maintenance
 - Breeding horses
 - Growing horses
 - Working horses

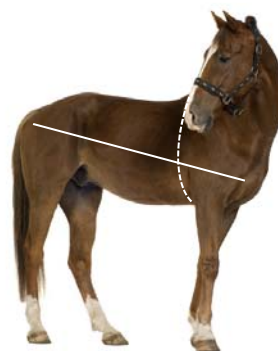


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Determining bodyweight

- Essential part of dietary management
- Can be done by:
 - Weigh tape
 - Weighbridge
 - Measuring tape
- Equation: $BW (kg) = [\text{heart girth (cm)}^2 \times \text{length (cm)}] / 11877$



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Condition scoring

- 0 to 5 system
 - Carroll & Huntingdon, 1988
 - Ideal = between 2 to 3
- 1 to 9 system
 - Henneke *et al.*, 1983
 - Ideal = between 5 to 7

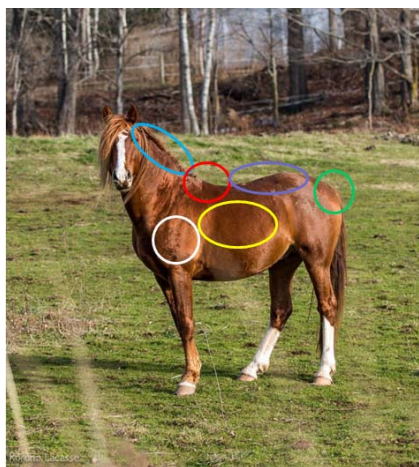


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Condition scoring

- Henneke – scored on 1 to 9 scale
- Areas of body are graded 1 to 9
 - average taken
- Areas assessed:
 - Loin
 - Ribs
 - Tailhead
 - Withers
 - Neck
 - Shoulders



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Condition scoring – thin horse

- Loin
 - negative crease
- Ribs
 - Very prominent
 - Easily seen and felt
 - No fat padding
- Tailhead
 - Prominent
- Withers
 - Affected by conformation
 - Easily visible
- Neck
 - Can see bone structure of neck
- Shoulder
 - Prominent



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Condition scoring – obese horse

- Loin
 - Crease down back
- Ribs
 - Not seen
 - Very difficult to feel
- Tailhead
 - Bulging fat
- Withers
 - Bulging fat
- Neck
 - Thick all round “cresty”
- Shoulder
 - Bulging fat, especially behind the elbow



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Nutrient requirements:

- Categories:
 - Maintenance
 - Pregnancy and lactation
 - Growth
 - Work
- Requirements are additive:
 - Maintenance + activity
- Under/over supply of nutrient
 - Limit performance/productivity
 - Affect health
- Balancing diet = begins with maintenance



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Maintenance:

- Horses that are not:
 - Pregnant
 - Growing
 - Working
- Requirements depend on:
 - Bodyweight
 - The environment
 - Individual digestive and metabolic efficiency
- Feed intake
 - Generally 2 % of bodyweight
- Forage only (with forage balancer)



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Breeding - pregnancy:

- **Pregnancy:**
 - Gestation = 11 months
 - First 4 months = maintenance
 - Last 7 months = adjust ration
- **Requirements:**
 - Increased energy and protein
 - Reduced intake
 - Due to foetal growth
- **Feed intake**
 - Can reduce to 1.75 % of bodyweight
- **Feed energy dense feeds (e.g. oils) and ↑ protein feeds**



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Breeding - lactation:

- **Lactation:**
 - Early and late lactation
 - Early lactation = 0 to 12 weeks
 - Late lactation = 12 weeks to weaning
- **Requirements:**
 - High energy requirements
 - Early lactation = 2 x maintenance
 - Late lactation = 1.75 x maintenance
- **Feed intake**
 - Can increase to 2.5 % of bodyweight
- **Ensure ad lib water available**



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Breeding - lactation:

- Feeds good quality forage
- Feed a stud mix
 - No more than 40 % of the ration
 - Feed little and often
- Monitor condition
 - Feed more mix of losing weight
 - For good does use a forage balancer to reduce calories



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Breeding - stallion:

- Breeding season:
 - Naturally starts in spring
- Requirements:
 - Non-breeding season = feed as for maintenance
 - Breeding season = 1.2 x maintenance energy and protein
 - Increased vitamin and mineral requirements
 - Depends on the number of mares covered
- Feed intake
 - 2 to 2.5 % of bodyweight
- Feed broad spectrum vitamin and mineral supplement



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Breeding - stallion:

- Feed good quality forage
- Can feed a stud mix
 - During breeding season
 - Feed little and often
- Monitor condition
 - Obesity affects breeding performance



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Growing horses:

- Aims:
 - Steady increase in size and bodyweight
 - Avoid very rapid growth rates
 - Avoid compensatory growth spurts
 - Avoid getting overweight
- Foals:
 - Newborn = 10 % of adult weight
 - One year old = 60 to 70 % of adult weight (80 to 90 % of adult height)
- Feed intake
 - 0 to 3 months = mare's milk
 - 3 months mare's milk ↓ and foal's requirements ↑



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Growing horses:

- Feeding the foal:
 - Begin to introduce feeds at 3 months ready for weaning
 - Weaning occurs around 4 to 6 months
- Feed types:
 - Good quality protein feeds
 - Low starch
 - Good vitamin and mineral levels
 - Good quality forage (e.g. grass)
 - Feed a youngstock pellet (if required)
 - Good doers = balancer only



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Growing horses:

- Yearlings to two years:
 - Growth rate begins to slow
 - Correct feeding still essential
- Feeding:
 - Feed ad lib forage
 - Feed a forage balancer
 - Good quality forage should meet energy and protein requirements
 - Some youngsters may need supplementary feeding (stud feed)
- Two years onwards
 - Requirements affected by training (e.g. racehorse)
 - If not in training then forage alone
 - Growing horses in training have ↑ nutrient requirements
 - Diet should still be good quality forage plus supplementary feed



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Working – light work:

- Light work:
 - Recreational riding
 - Beginning of training programme
- Requirements:
 - Appetite = 2 % BW
 - Good quality forage
 - Possibly supplementary feeds deepening on individual
 - Forage should comprise minimum 70 % of the ration
- Supplementary feeds
 - Low energy mix, sugar beet pulp, alfalfa, oil
- Feed broad spectrum vitamin and mineral supplement



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Working – energy sources:

- Dietary energy sources:
 - Oil
 - Carbohydrate (fibre, starch and sugars)
- Type of energy source required depends on:
 - Intensity of exercise
 - Duration of exercise
 - Temperament of the horse
 - Any clinical conditions
- Energy - calories
 - Horse diets use megajoules (1 MJ = 239 calories)
- Digestible energy (DE) energy digested in the GIT

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Working – energy sources:

- Fibre as a energy source:
 - Slow release energy
 - Essential for gut health
- Starch as an energy source:
 - Instant energy
 - May cause excitability in horses
 - Not suitable for obese horses/for horses with certain clinical conditions
- Oil as an energy source:
 - Slow release of energy (high energy content)
 - Less excitable behaviour
 - Must be introduced gradually (100 ml per week)
 - No more than 100 ml oil/100 kg BW (Vit E should be added to ↑ oil diets)

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Working – moderate work:

- Moderate work:
 - Novice/intermediate level eventer
 - Dressage horse (medium level)
 - Grade A showjumper
- Requirements:
 - Appetite = 2.25 % BW
 - Good quality forage
 - Supplementary feeds
 - Forage should comprise minimum 60 to 70 % of the ration
- Supplementary feeds
 - Mix, Sugar beet pulp, HT alfalfa, Oil



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Working – heavy work:

- Heavy work:
 - 3 day eventer
 - Endurance horse (70 to 100 mile rides)
- Requirements:
 - Appetite = 2.5 % BW
 - Good quality forage plus supplementary feeds
 - Forage should comprise minimum 50 to 60 % of the ration
- Supplementary feeds
 - Mix
 - Sugar beet pulp
 - HT alfalfa
 - Oil



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Working – very heavy work:

- Very heavy work:
 - Racehorse
- Requirements:
 - Appetite = 2.25 % BW
 - Good quality forage
 - Plus supplementary feeds
 - Forage should comprise minimum 50 of the ration
- Supplementary feeds
 - Mix
 - Sugar beet pulp
 - HT alfalfa
 - Oil



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Rules of feeding:

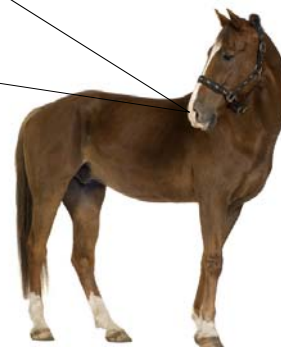
- Provide adequate forage
- Feed concentrates little and often
- Feed consistently: amount and type
- Provide a good water source
- Control parasites
- Check teeth
- Monitor condition (and weight)
- Provide regular exercise

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Dietary management- conclusion

- Feed high quality forage
- Use high degradable fibrous feeds
- Feed cereals in moderation
- Feed little and often
- Monitor bodyweight





Thank you for listening