NEIGHS + NOTES

EQUINE STUDY NOTES, WORKBOOKS + GUIDES

EQUINE NUTRITION

STUDY GUIDE

16 PAGES | 8 TOPICS | EASY TO READ FORMAT

CHAPTER 1: INTRODUCTION

Nutrition is the science of how food provides energy and materials for growth, repair and maintenance of body functions. For horses, nutrition is more than just feeding - it underpins health, performance, reproduction and welfare.

CHARACTERISTICS OF HORSES AS EATERS

HERBIVORES:
- Horses consume only plant-based materials.

NON-RUMINANTS:
- Unlike ruminants (eg cows and sheep), horses have a simple stomach rather than multiple stomach chambers.

HINDGUT FERMENTERS:
- Their caecum and large colon house microbes that ferment fibre into usable energy.

CONTINUOUS GRAZERS:
- Horses have evolved to graze 16–18 hours a day, consuming small amounts frequently while moving. This pattern keeps their digestive system healthy.

WHY NUTRITION MATTERS

GROWTH & DEVELOPMENT
Foals and youngstock require precise amounts of protein, minerals and energy to avoid developmental orthopedic diseases (DOD).

PERFORMANCE
Performance horses need energy for stamina, muscle recovery and focus.

REPRODUCTION
Broodmares require additional nutrition during late gestation and lactation.

IMMUNITY & HEALING
Proper nutrition strengthens the immune system and supports tissue repair.

LONGEVITY
Balanced feeding reduces risks of colic, laminitis, ulcers, Equine Metabolic Syndrome (EMS) and other conditions.

Malnutrition

Does not only mean deficiency—it can also mean overfeeding, leading to obesity and metabolic disease.

CHAPTER 2: NUTRIENTS

INTRODUCTION

Horses require six essential nutrient groups: carbohydrates, protein, fats, vitamins, minerals and water.

KEY FUNCTIONS OF NUTRIENTS:

- Energy Production → Nutrients like carbohydrates and fats provide the power and fuel the body needs for its daily activities..
- Body Structure & Growth → Proteins are crucial for building and repairing tissues, while other nutrients support bone health and overall body development.
- Regulation of Bodily Processes → Vitamins and minerals help control various chemical reactions, support immune function and maintain the smooth operation of different body systems including the brain, nerves and circulation.

The Horse's Diet

Horses have evolved to thrive on high-fibre, low-starch diets.
Diets too rich in grains disrupt gut health.

CARBOHYDRATES

- Primary energy source in the equine diet.
- Found in forage (hay/pasture) and grains.

STRUCTURAL CARBOHYDRATES

Cellulose, hemicellulose, lignin. Broken down in the hindgut by microbes, producing volatile fatty acids (VFAs)—acetate, propionate, butyrate—which supply 60–70% of the horse's energy needs.

NON-STRUCTURAL CARBOHYDRATES

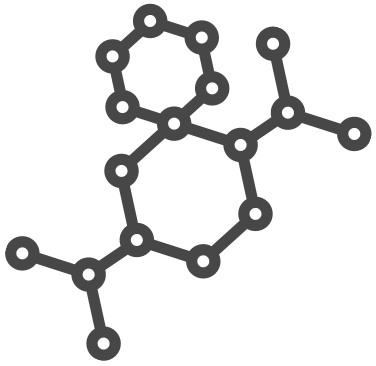
Sugars, starch and fructans. Digested in the small intestine. Excess intake overwhelms digestion and spills into the hindgut, causing acidosis and predisposing horses to laminitis.

PROTEIN

- Provides amino acids - the building blocks for muscles, tissues, enzymes and hormones.
- Critical for growing horses, lactating mares and horses in heavy work.
- Essential amino acids must come from the horse's diet—lysine is the most limiting.
- Sources: lucerne, soybean meal, linseed meal, lupins.

EXCESS PROTEIN

- Usually excreted as urea in urine (smell of ammonia).
- Can stress the kidneys if prolonged.
- Does not improve performance if energy needs are not met.



CHAPTER 2: NUTRIENTS

FATS/LIPIDS

- Provide 2–3 times more energy per gram than carbohydrates.
- Digested easily in the small intestine.
- Produce "cool energy"(sustained release without excitability).
- Improve body condition, coat shine and endurance.
- Aid absorption of fat-soluble vitamins (A, D, E, K).
- Sources: vegetable oils (soy, canola), rice bran, flaxseed or sunflower seeds.

VITAMINS

FAT-SOLUBLE (STORED IN BODY FAT):

- A: vision, immunity, growth (green forage).
- D: regulates calcium/phosphorus for bone health (sunlight + forage).
- E: antioxidant, muscle/nerve health (fresh forage).
- K: blood clotting (produced by hindgut microbes).

WATER-SOLUBLE (DAILY INTAKE NEEDED):

- B-complex: energy metabolism, nerve function (produced in hindgut).
- C: antioxidant (horses synthesise in liver).

Water

The most essential nutrient.
Functions to regulate body temperature, aid digestion and absorption, transport nutrients and waste and lubricate joints.
Horses at rest require 20-30L/day and those in heavy work, hot weather or lactating will consume 40+L/day.
Signs of dehydration include sunken eyes, dry gums and skin tenting.

MINERALS

MACRO MINERALS:

- Calcium (Ca): bones, muscles.
- Phosphorus (P): energy metabolism, skeletal health.
- Magnesium (Mg): enzyme activity, calm temperament.
- Potassium (K): vital for muscle function, lost in sweat.
- Sodium (Na) & Chloride (Cl): electrolytes, fluid balance (salt lick essential).

MICRO MINERALS:

- Copper (Cu): connective tissue, pigment.
- Zinc (Zn): hooves, skin, immunity.
- Selenium (Se): antioxidant; deficiency causes white muscle disease, but excess is toxic.
- Iodine (I): thyroid function.
- Iron (Fe): haemoglobin, oxygen transport.
- Manganese & Cobalt: bone and vitamin synthesis.

CHAPTER 3: THE DIGESTIVE SYSTEM

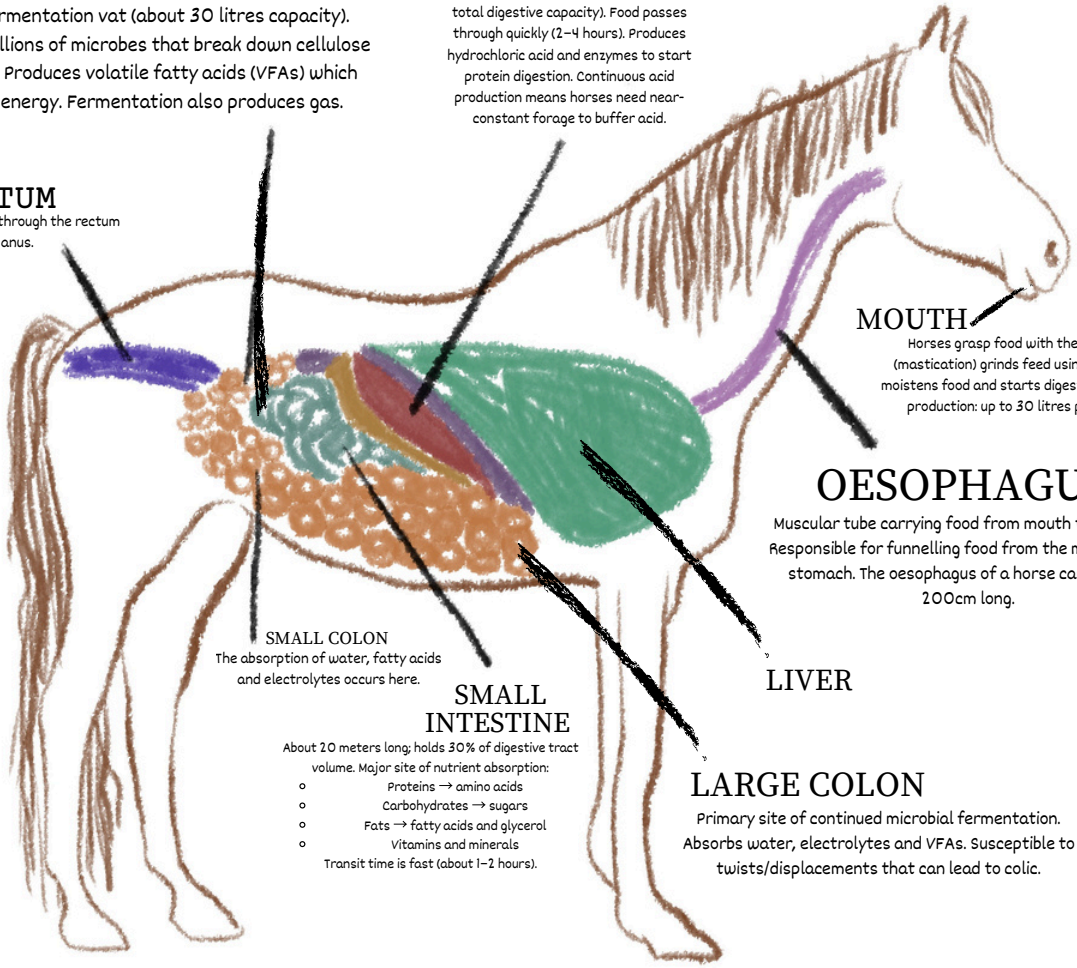
INTRODUCTION

Horses are non-ruminant herbivores (also called hindgut fermenters). Unlike cows and sheep, which have multi-chambered stomachs for fermentation, horses have a single stomach and rely heavily on their large intestine and caecum to break down fibrous plant material.
The digestive system is designed for continuous grazing, not large infrequent meals.

FUNCTIONS OF THE DIGESTIVE SYSTEM:

- Ingestion – Taking in food and water.
- Digestion – Breaking down food into smaller components.
- Absorption – Nutrients pass into the bloodstream.
- Elimination – Waste products are excreted as feces.

COMPONENTS OF THE DIGESTIVE TRACT



CAECUM
Large fermentation vat (about 30 litres capacity). Contains billions of microbes that break down cellulose and fibre. Produces volatile fatty acids (VFAs) which provide energy. Fermentation also produces gas.

STOMACH
Small, holding only 8–15L (about 10% of total digestive capacity). Food passes through quickly (2–4 hours). Produces hydrochloric acid and enzymes to start protein digestion. Continuous acid production means horses need near-constant forage to buffer acid.

RECTUM
Waste is expelled through the rectum and anus.

MOUTH
Horses grasp food with their lips and incisors. Chewing (mastication) grinds feed using cheek teeth (molars). Saliva moistens food and starts digestion of starches. Average saliva production: up to 30 litres per day when eating forage.

OESOPHAGUS
Muscular tube carrying food from mouth to stomach. Responsible for funnelling food from the mouth to the stomach. The oesophagus of a horse can be up to 200cm long.

SMALL COLON
The absorption of water, fatty acids and electrolytes occurs here.

LIVER

SMALL INTESTINE
About 20 meters long; holds 30% of digestive tract volume. Major site of nutrient absorption:
- Proteins → amino acids
- Carbohydrates → sugars
- Fats → fatty acids and glycerol
- Vitamins and minerals

Transit time is fast (about 1–2 hours).

LARGE COLON
Primary site of continued microbial fermentation. Absorbs water, electrolytes and VFAs. Susceptible to twists/displacements that can lead to colic.

CHAPTER 3: THE DIGESTIVE SYSTEM

TRANSIT TIMES

MOUTH: Seconds

ESOPHAGUS: 10-20 seconds

STOMACH: 2-4 hours

SMALL INTESTINE: 1-2 hours

CAECUM + LARGE COLON: 36-72 hours

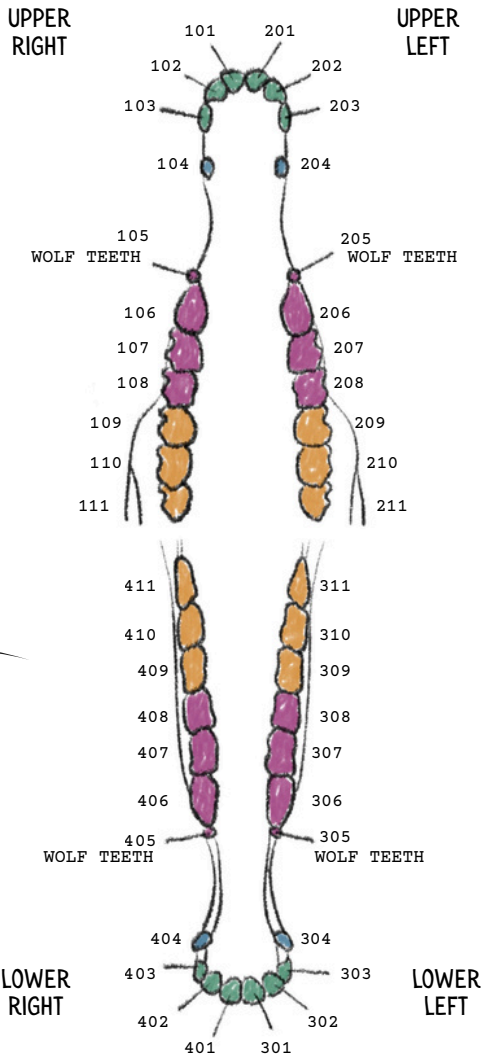
Total passage from mouth to manure: 36 to 72 hours.

KEY DIGESTION FEATURES

- Designed for constant forage intake (16–18 hours/day grazing).
- Small stomach means horses cannot handle large grain meals.
- Rely heavily on microbial fermentation in hindgut.
- Cannot regurgitate or vomit — makes colic particularly dangerous.

KEY DIGESTION FEATURES

- Colic – General term for abdominal pain; can be caused by gas, impaction or twisted intestine.
- Gastric Ulcers – Result of excess stomach acid without enough forage.
- Laminitis – Can be triggered by starch overload or hindgut disturbance.
- Diarrhoea – Often from sudden diet change, parasites or infection.



Cheek Teeth

Cheek TEETH (pre-molars and molars) are made up of three materials called enamel, dentin and cementum. These components work together to create an abrasive surface, allowing the grinding and breaking up of plant material for digestion.

CHAPTER 4: TYPES OF FEED

FORAGE - THE FOUNDATION OF THE EQUINE DIET

Horses should consume a minimum of 1.5–2% of body weight daily in forage.

TYPES OF FORAGE:

- Pasture: high in vitamins but lush grass increases the risk of laminitis.
- Grass hay such as oaten, ryegrass, timothy.
- Legume hay (lucerne, clover) contains higher protein and calcium levels.

Quality indicators: leafy, green, fragrant, free of dust and mold.

CONCENTRATES

Energy-dense feeds to supplement forage.

GRAINS:

- Oats = safest (fibre + starch balance).
- Barley = must be processed.
- Corn = highest starch, risky for laminitis/ulcers.

COMMERCIAL MIXES:

- Fortified with vitamins and minerals.

SUPPLEMENTS

- Electrolytes for sweating horses.
- Hoof support: biotin, zinc, methionine.
- Joint health: glucosamine, chondrition, hylaronic acid, MSM.
- Balancers: ensure adequate vitamins/minerals.

ALTERNATIVE FEEDS

- Beet pulp: fibre source, excellent for weight gain.
- Rice bran: high fat, stabilised preferred.
- Flaxseed: omega-3 fatty acids.

CHAPTER 5: FEEDING MANAGEMENT PRINCIPLES

INTRODUCTION

Feeding horses is not just about providing the right nutrients—it is about how, when and in what form those nutrients are offered. Even the best ration can cause digestive upset or behavioural issues if fed incorrectly. Feeding management practices are essential for maximising health, performance and welfare.

FORAGE FIRST

Forage should always form the foundation of the equine diet, meeting both nutritional and behavioural needs.

WHY FORAGE MATTERS:

- Provides continuous fibre → keeps hindgut microbes active.
- Stimulates chewing → promotes saliva production, which buffers stomach acid.
- Keeps the digestive tract full → reduces risk of gastric ulcers and colic.
- Satisfies the horse's natural need to graze, reducing stress and stereotypic behaviours like crib-biting or weaving.

PRACTICAL GUIDELINE:

Horses should receive at least 1.5–2% of their body weight in forage (hay or pasture) daily. For a 500 kg horse, this equals 7.5–10 kg of forage per day.

FEED SMALL, FREQUENT MEALS

- Horses are designed to eat little and often.
- The stomach is small (8–15 L) and empties quickly so large, infrequent meals overwhelm the system.
- Grain-based meals larger than 2 kg at once pass into the hindgut undigested, where they ferment rapidly, causing acidosis, colic and laminitis.
- If a horse requires concentrates, divide them into multiple small meals throughout the day (2–4 feedings).

CONSISTENCY AND ROUTINE

- Horses thrive on routine. Sudden changes in timing or feed type disrupt digestion and stress the horse.
- Microbes in the hindgut adapt slowly to changes. Abrupt alterations in starch, fibre or protein levels cause microbial die-off, gas production and colic.
- Feed at the same times every day.
- Maintain consistent feed types and amounts. If a change is necessary, introduce new feed gradually over 7–14 days. This will prevent digestive upset and allows the hindgut microbes to adjust. Replace only 25% of the old feed with new feed every 2-3 days until the full changeover is achieved.

CHAPTER 5: FEEDING MANAGEMENT PRINCIPLES

CLEAN, FRESH WATER

- Lack of water is the fastest route to colic—especially impaction colic.
- Horses will refuse dirty or icy water, even if thirsty.
- Clean buckets and troughs daily.
- Break ice in winter, provide shade in summer.
- For traveling horses, carry familiar-smelling water to prevent refusal.

MATCH DIET TO HORSE'S NEEDS

- Feeding should be based on the individual horse's body weight, body condition, workload, age and health status.
- Overfeeding idle horses leads to obesity, insulin resistance and laminitis.
- Underfeeding hard-working horses results in weight loss, fatigue and poor performance.
- Use Body Condition Scoring (BCS) to monitor fat cover.
- Adjust diet seasonally (e.g., higher energy in winter when forage quality drops).
- For performance horses, balance energy sources (fibre, fat & starch) to match workload.

TIMING FEED AND EXERCISE

- Exercise affects digestion and blood flow.
- Large grain meals immediately before exercise increase risk of colic, tying-up and poor performance.
- Full stomachs restrict lung expansion and may cause discomfort.
- Avoid heavy exercise for at least 1 hour after feeding grain.
- Forage meals (hay) are safe before exercise and can protect against ulcers.

TRAVEL AND COMPETITION FEEDING

- Horses in competition or on the road may refuse unfamiliar feeds and water.
- Stress increases the risk of ulcers and colic.
- Keep feed as close to the home diet as possible.
- Pre-soak feeds at home to accustom the horse to changes.
- Offer small hay nets frequently during travel.

CHAPTER 6: NUTRITIONAL NEEDS

Different horses have different nutritional requirements depending on their age, physiological state and workload. Feeding a horse correctly means understanding its specific nutrient demands and matching them with the right type and amount of feed.

HORSE	DEFINITION	NEEDS	FEEDING STRATEGY	EXAMPLE RATION
NO/LIGHT WORK	Horses kept for pleasure, pasture pets or those in very light work (walking/trotting only).	• Energy requirements are low. • Forage usually provides everything required. • Protein, vitamins, and minerals must still be balanced.	• Good-quality pasture or hay at 1.5–2% body weight per day. • Free-choice salt block and water. • A vitamin/mineral balancer if forage quality is poor. • No grain or concentrates unless extra calories are needed in winter.	500kg horse: • 8–9 kg grass hay. • Access to pasture. • Salt block + water. • 200 g balancer pellet daily.
PERFORMANCE	Light work: pleasure riding, hacking. Moderate work: regular schooling, lower-level competition. Intense work: racing, eventing, endurance, polo.	Increased calorie demand to fuel muscles. • Supplement with fat for energy and controlled starch for energy. • Protein needed for muscle repair. • Electrolyte supplementation essential to replenish mineral losses after sweating. • Antioxidants & B-vitamins.	• High-quality forage as base (⩾1.5% BW). • Controlled grain or pelleted feed for energy. • Fat supplementation for endurance and stamina. • Daily electrolytes during training/competition.	500kg eventer in moderate work: • 7.5 kg grass hay + 2.5 kg lucerne hay. • 3 kg performance pellet (split into 3 meals). • 1 kg beet pulp (soaked). • 500 ml vegetable oil. • Electrolyte mix in water.
PREGNANT BROODMARE		• Early pregnancy is close to maintenance horse needs. • Late pregnancy: Fetal growth accelerates. Increased demand for protein, calcium, phosphorus, trace minerals. Energy requirement increases slightly.	• High-quality forage always. • Protein supplements (lucerne, soybean meal) in late pregnancy and lactation. • Concentrates for energy during lactation. • Minerals: especially Ca, P, Cu, Zn.	500kg, late pregnancy: • 6kg grass hay + 3kg lucerne hay. • 2-3kg specific broodmare pellet • 0.5-1kg soaked beet pulp. • Free-choice salt/mineral block + fresh water
LACTATING BROODMARE		• Milk production requires large amounts of water, protein, calcium and energy. • Nutrient intake must increase by 25–50%.		500kg horse: • 6 kg grass hay + 3 kg lucerne hay. • 3.5 kg mare-and-foal pellet. • 1 kg beet pulp. • Free-choice salt. • Fresh water (can drink 40–60 L/day when milking).
FOAL/GROWING HORSE		• Protein: critical for muscle and tissue growth. • Minerals: calcium, phosphorus, copper, zinc essential for bone and joint development. • Energy: must be carefully controlled—excess calories cause rapid growth, leading to joint problems.	• Creep feed or balanced foal pellets. • Access to good pasture. • Monitor growth rates and adjust feed to avoid obesity or rapid gain.	300kg weanling: • Free-choice pasture. • 4 kg grass hay. • 2 kg foal pellet (split into 2–3 meals). • 0.5 kg lucerne hay. • Salt block + water.
SENIOR	Older horses often face dental issues, reduced digestive efficiency, increased risk of weight and muscle loss.	• Highly digestible fibre sources (beet pulp, hay cubes, chaff). • Soaked feeds to make chewing easier. • Extra protein to maintain muscle. • Fat for safe calories. • Vitamin/mineral supplementation to support aging metabolism.	• Replace long hay with soaked hay cubes or complete senior feeds if teeth are poor. • Provide high-quality protein sources. • Avoid overfeeding starch (laminitis risk).	500kg horse: • 4 kg soaked hay cubes. • 2 kg beet pulp mash. • 2 kg senior complete pellet. • 200 ml vegetable oil. • Vitamin/mineral supplement. • Salt block + water.

CHAPTER 6: NUTRITIONAL NEEDS

OTHER CLASSES OF HORSES

STALLIONS

- During breeding season: increased energy and protein demand.
- Vitamin E and zinc important for fertility.
- Base diet: forage + concentrates.

HORSES WITH METABOLIC ISSUES EG EMS, CUSHINGS, INSULIN RESISTANCE):

- Require low-NSC diets (low sugar and starch).
- Strict weight management.
- Soaked hay to reduce sugar content.
- No grain or lush pasture access.

HORSES RECOVERING FROM INJURY OR ILLNESS:

- Need high-quality protein for tissue repair.
- May require higher calories for recovery.
- Diet must remain digestible and palatable.

CHAPTER 7: NUTRITION PROBLEMS

Nutrition-related disorders are among the most common health issues in horses. Many are preventable with proper feeding management.

COLIC

DEFINITION: Abdominal pain caused by digestive upset.

DIET RELATED CAUSES:

- Sudden feed changes.
- Excessive grain intake → fermentation gas build-up.
- Moldy or poor-quality feed.
- Inadequate water intake → impaction colic.
- Insufficient forage → reduced gut motility.

SIGNS: Pawing, rolling, flank-watching, reduced manure.

PREVENTION:

- Feed forage first, avoid sudden diet changes.
- Ensure constant access to clean water.
- Feed multiple small meals instead of large ones.
- Provide regular exercise to stimulate gut motility.

LAMINITIS

DEFINITION: Inflammation of the laminae in the hoof, leading to lameness.

DIET RELATED CAUSES:

- Overconsumption of non-structural carbohydrates (grains, lush spring grass).
- Obesity and insulin resistance.
- High-risk horses: ponies, easy-keepers, horses with Equine Metabolic Syndrome (EMS).

PREVENTION:

- Avoid sudden access to lush pasture (especially spring/autumn).
- Limit sugar/starch intake.
- Use soaked hay for overweight horses.
- Keep horses at a healthy Body Condition Score (BCS 5–6).

OBESITY

CAUSES: Overfeeding energy, lack of exercise, "easy-keeper" breeds.

HEALTH CONSEQUENCES: Laminitis, insulin resistance, EMS, joint stress.

PREVENTION:

- Limit concentrates and restrict pasture access (grazing muzzles, dry lots).
- Provide low-calorie forage.
- Monitor body condition regularly.

CHAPTER 7: NUTRITION PROBLEMS

EQUINE GASTRIC ULCER SYNDROME

DEFINITION: Erosions in the stomach lining caused by excess gastric acid.

DIET RELATED CAUSES:
- Low forage/high grain diets.
- Fasting periods (acid continues to flow even when stomach empty).
- Stress, transport, competition.

SIGNS: Poor appetite, girthiness, weight loss, dull coat, crib-biting.

PREVENTION:
- Constant forage availability (especially before travel/work).
- Reduce grain and starch.
- Provide turnout and reduce stress.
- Use lucerne hay pre-ride to buffer acid.

TYING-UP (EXERTIONAL RHABDOMYOLYSIS)

DEFINITION: Muscle damage following exercise causing stiffness, pain, sweating.

CAUSES:
- High-grain/starch diets in unfit horses.
- Genetic predisposition (RER, PSSM).

PREVENTION:
- Replace starch with fat and fibre as energy sources.
- Provide consistent exercise and turnout.
- Supplement vitamin E and selenium for muscle health.

NUTRIENT DEFICIENCIES

CAUSES: Poor-quality forage, unbalanced rations.

EXAMPLES:
- Selenium deficiency → white muscle disease.
- Calcium deficiency → weak bones.
- Protein deficiency → poor growth, weak topline.

PREVENTION:
- Forage testing.
- Use of vitamin/mineral balancers.
- Adjust diet to horse's stage of life/work.

CHAPTER 8: THE FEED RATION

Formulating a balanced ration ensures a horse receives everything it needs without deficiencies or excesses.

STEP BY STEP RATION FORMULATION

1. DETERMINE BODY WEIGHT AND NEEDS

- 500 kg adult horse = baseline example.
- Consider: maintenance, light/moderate/intense work, pregnancy, lactation, growth, senior.

2. CALCULATE FORAGE INTAKE

- Base diet: 1.5–2% BW in forage daily (7.5–10 kg hay for a 500 kg horse).

3. EVALUATE FORAGE QUALITY

- High-quality pasture may cover most nutrient needs.
- Poor hay may lack protein, minerals and vitamins.

4. ADD CONCENTRATES IF NEEDED

- Performance horses → extra calories.
- Growing foals → protein and mineral support.
- Seniors → more digestible feeds.

5. BALANCE MINERALS

- Maintain Ca:P at 2:1.
- Add trace minerals as needed (salt, balancers).

6. ENSURE WATER AND SALT ACCESS

- Always free-choice.

COMMON RATIONING MISTAKES

- Feeding by volume instead of weight (scoops vary in density).
- Overfeeding concentrates while underfeeding forage.
- Ignoring mineral ratios.
- Adding multiple supplements without checking overlap.

GLOSSARY OF KEY TERMS

Acidosis (Hindgut Acidosis) – A condition where excess starch or sugar reaches the hindgut, causing rapid fermentation, increased acidity, and potentially colic or laminitis.

Amino Acids – The building blocks of protein. Some (essential amino acids) must be supplied in the diet; lysine is the most important for horses.

Antioxidants – Substances (such as Vitamin E and selenium) that protect cells from oxidative damage, especially important in performance horses.

Balanced Ration – A diet that provides all nutrients (energy, protein, vitamins, minerals, water) in the correct amounts and ratios to meet a horse's needs.

Balancers (Vitamin/Mineral Balancers) – Concentrated feeds that supply vitamins, minerals, and protein without adding unnecessary calories.

BCS (Body Condition Score) – A numerical system (1–9) used to assess fat cover on a horse's body. Ideal range for most horses is 5–6.

Beet Pulp – A by-product of sugar beet processing; a safe, digestible fibre source often soaked before feeding.

Broodmare – A female horse used for breeding. Nutritional needs increase significantly in late pregnancy and lactation.

Calcium (Ca) – A macromineral vital for bone health and muscle contraction. Needs to be fed in balance with phosphorus.

Carbohydrates – Main source of energy in the equine diet, divided into structural (fibre) and non-structural (starch, sugar).

Caecum – A large fermentation vat in the horse's hindgut where microbes break down fibre into volatile fatty acids (VFAs).

Colic – A general term for abdominal pain in horses, often linked to feeding issues such as sudden diet changes or excess grain.

Concentrates – Energy-dense feeds such as grains or commercial pellets, used to supplement forage-based diets.

Creep Feeding – The practice of feeding foals separately from mares to ensure they receive adequate nutrition.

Crib-Biting – A stereotypic behavior often linked to stress and poor feeding management, where a horse grips a surface with its teeth and sucks in air.

Dehydration – A lack of adequate body water, leading to reduced performance, colic risk, and metabolic disturbances.

Developmental Orthopedic Disease (DOD) – A group of skeletal disorders in young horses, often linked to rapid growth and dietary imbalances.

Digestible Energy (DE) – The amount of energy a horse can extract and use from feed after digestion.

Electrolytes – Minerals (Na, Cl, K, Mg) lost in sweat, essential for hydration and muscle function.

EMS (Equine Metabolic Syndrome) – A metabolic disorder linked to obesity and insulin resistance; affected horses are prone to laminitis.

Essential Nutrients – Nutrients that must be provided in the diet because the body cannot synthesize enough (e.g., lysine, vitamins A & E).

Forage – fibre-based feeds such as pasture, hay, or haylage that form the foundation of the horse's diet.

Foal – A young horse less than one year old.

Gastric Ulcer (EGUS) – Lesions in the stomach lining caused by excess acid, often linked to high-grain/low-forage diets and stress.

Glucosamine – A joint supplement that supports cartilage health.

Hay Cubes/Pellets – Processed forage products that can be soaked for horses with poor teeth.

Hindgut Fermentation – Microbial digestion of fibre in the caecum and large colon, producing VFAs.

GLOSSARY OF KEY TERMS

Impaction Colic – A blockage in the intestine often caused by poor water intake or low-quality forage.

Iodine (I) – A trace mineral needed for thyroid hormone production; excess or deficiency can cause goiter.

Laminitis – Inflammation of the laminae in the hoof, leading to lameness; often linked to high sugar/starch intake or metabolic disorders.

Lactation – The period when a mare is producing milk for her foal. This is the most nutritionally demanding stage of her life.

Legume Hay – High-protein forage (lucerne, clover) often used to boost protein and calcium intake.

Lignin – An indigestible plant fibre component, contributes bulk but not energy.

Macrominerals – Minerals required in larger amounts (Ca, P, Mg, K, Na, Cl, S).

Microminerals (Trace Minerals) – Minerals required in small amounts (Cu, Zn, Se, I, Fe, Mn, Co).

NSC (Non-Structural Carbohydrates) – Sugars, starches, and fructans found in grains and lush grass; excess can cause laminitis.

Obesity – Excessive fat accumulation, commonly caused by overfeeding and lack of exercise; linked to EMS and laminitis.

Oats – A commonly fed grain, considered safer than corn due to higher fibre and lower starch concentration.

Overfeeding – Providing more calories than required, leading to obesity and metabolic disease.

Pasture – Grazed forage; high in vitamins but risky in spring/autumn due to high sugar levels.

Phosphorus (P) – A macromineral essential for bone health and energy metabolism; must be balanced with calcium.

PSSM (Polysaccharide Storage Myopathy) – A muscle disorder where horses store abnormal glycogen, leading to tying-up.

Protein – Nutrient providing amino acids for growth, repair, and tissue maintenance.

Ration Balancer – A concentrated feed designed to "balance" a forage-only diet with protein, vitamins, and minerals.

Roughage – Another term for forage (hay, grass, fibre feeds).

Salt Block – A block of sodium chloride provided free-choice for horses to meet electrolyte needs.

Selenium (Se) – An essential trace mineral; deficiency causes white muscle disease, excess is toxic.

Senior Horse – An older horse (typically over 15–20 years), often requiring easily digestible, soaked feeds.

Soaked Hay – Hay soaked in water to reduce sugar content, often used for laminitis-prone horses.

Starch – A carbohydrate found in grains, digested in the small intestine; excess spills into hindgut and causes acidosis.

Supplement – A feed product added to a diet to correct a specific deficiency (e.g., biotin for hooves, electrolytes for sweat loss).

Tying-Up (Exertional Rhabdomyolysis) – A muscle condition triggered by exercise, often linked to high-starch diets and poor fitness.

VFAs (Volatile Fatty Acids) – Acetate, propionate, and butyrate; produced by fibre fermentation in the hindgut and provide energy.

Vitamin A – Fat-soluble vitamin important for vision, growth, immunity; found in fresh forage.

Vitamin D – Fat-soluble vitamin regulating calcium absorption; obtained from sunlight and forage.

Vitamin E – Antioxidant important for muscle and nerve function; found in fresh forage, often deficient in high-grain diets.

Vitamin K – Fat-soluble vitamin produced by hindgut microbes; essential for blood clotting.

Weight Tape – A measuring tape used to estimate a horse's weight by girth circumference.

White Muscle Disease – A degenerative muscle condition caused by selenium deficiency.

Workload (Light/Moderate/Heavy) – Classification of exercise intensity used to determine a horse's nutritional needs.