SMALL RUMINANT NUTRITION

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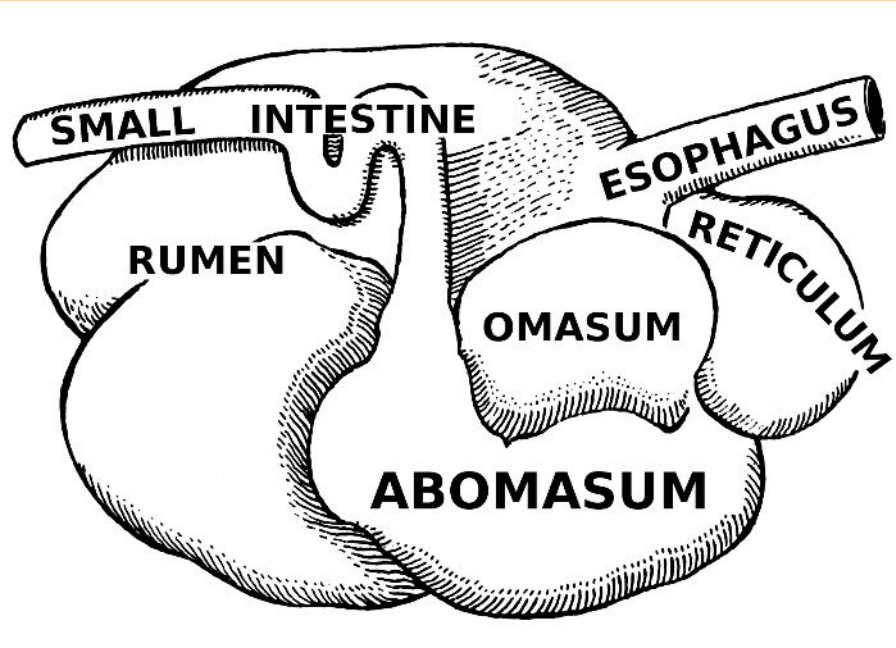
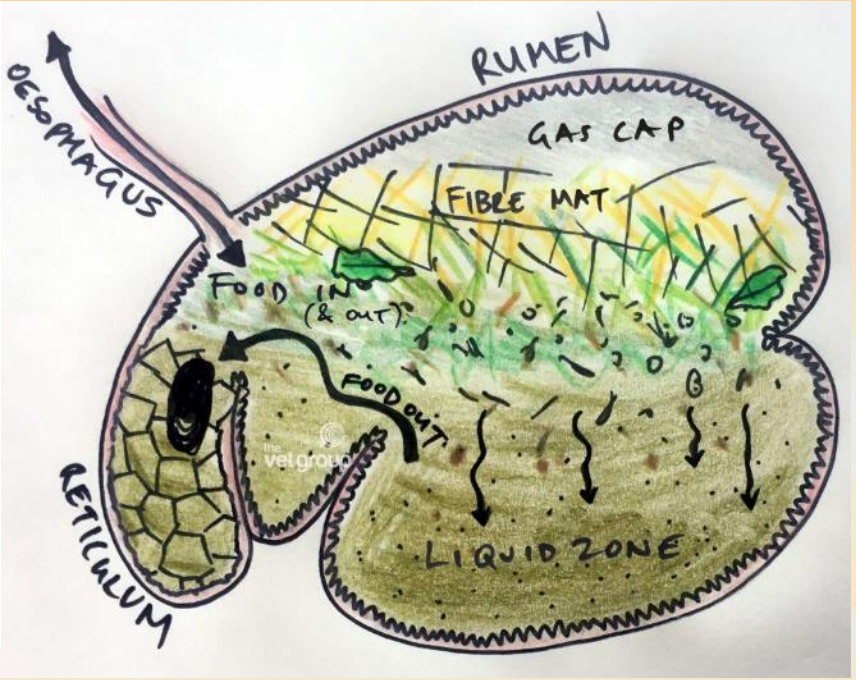
THE RUMINANT'S GASTROINTESTINAL TRACT





BODY CONDITION SCORING (BCS)

In Small Ruminants, we use a scale of 1 to 5 (1 is emaciated, 5 is obese)

BCS *1 to 5*	Nutritional Demand	Target BCS	Acceptable Ranges
For most stages of production	Low to moderate	3.0	2.5-4.0
Does at kidding	High	3.5	3.0-3.5
Does at peak lactation	Very high	2.5-3.0	2.0-3.5
Does at breeding	High	3.0	2.5-3.5
Bucks at breeding	High	3.5	3.0-4.0


1
a
b
c
2
a
b
3

BODY CONDITION SCORING

BCS 1

BCS 2

BCS 3

BCS 4

BCS 5

BASIC METABOLIC REQUIREMENTS

WATER→ 3.5L to 7L non-lactating does; Up to 7L to 15L lactating does

Dry Matter Intake→ minimum 7% protein (goal)

Grass hay only*- 2% of body weight (1 lb hay for 50# goat / 3lbs hay for 150#)

Grain not necessary - "Boy Goats Do Not Need Grain"

Protein supplements - pellets, molasses-based products

*exception pregnant does

Minerals (10-25g daily requirement)

7 macrominerals (Calcium, Phosphorus, Sodium, Potassium, Chloride, Sulfur, Magnesium)

8 microminerals (Iron, Copper, Cobalt, Zinc, Manganese, Selenium, Molybdenum, Iodine)

Vitamins - rumen naturally synthesizes B vitamins; Fat-soluable Vitamins A, D, E and K are supplemented

Breeding and Milking Does

Goal is BCS of 3 to 3.5 at BREEDING and maintain that through pregnancy

- Months 1-3: Grass/alfalfa hay mix 2-3% of body weight, monitor BCS throughout
    - If BCS decreases >0.5, supplement with alfalfa
- Months 4-5: Hay intake decreases to about 1.5% BW, supplement with milking ration 0.5% to 1% BW
- Lactation: 1lb grain per 3lbs milk produced is general rule
- SPLIT grain into 2 or more feedings per day

MOORMAN'S® SHOWTEC® SHAZAM™

Guaranteed Analysis

Crude Protein, min.	8.0%
Crude Fat, min.	0.75%
Crude Fiber, max.	3.0%
Calcium (Ca), min./max.	12.0-14.4%
Phosphorus (P), min.	2.0%
Salt (NaCl), min./max.	17.0-20.0%
Copper (Cu), min.	600 ppm
Selenium (Se), min.	0.3 ppm
Zinc (Zn), min.	1,800 ppm
Vitamin A, min.	100,000 IU/lb
Vitamin D3, min.	15,000 IU/lb
Vitamin E, min.	300 IU/lb

Ingredients

Calcium Carbonate, Salt, Corn Distillers Dried Grains with Solubles, Dicalcium Phosphate, Extracted Citric Acid Presscake, Cane Molasses, Dehulled Soybean Meal, Zinc Amino Acid Complex, Yeast Extract, Sodium Propionate (A Preservative), Vegetable Oil, Magnesium- Mica, Biotin, Gelatin, Vitamin A Supplement, Vitamin D3 Supplement, Vitamin E Supplement, Menadione Sodium Bisulfite Complex, Riboflavin Supplement, Niacin Supplement, Calcium Pantothenate, Thiamine Mononitrate, Vitamin B12, Pyridoxine Hydrochloride, Folic Acid, Iron Oxide, Magnesium Oxide, Artificial and Natural Flavors, Calcium Sulfate, Copper Sul- fate, d-alpha Tocopheryl Acetate, Copper Amino Acid Complex, Selenium Yeast, Hydrated Sodium Calcium Aluminosilicate, Ascorbic Acid, Manganous Oxide, Cobalt Glucoheptonate, Ethylenediamine Dihydriodide.

FIONA

75lbs

MONTHS 1-3: 1.5 to 2.25 lbs hay daily

MONTHS 4-5: Intake decreases to 1.1 lbs/day

Add 0.4 to 0.75 lbs ration/day

In Lactation →

1lb grain per 3 lbs

milk produced

RUTTING/BREEDING MALES

- Grass Hay Only
- Monitor BCS 3 to 3.5
- Supplement with Grower Ration as needed to maintain body condition

SHOW ANIMALS

Disclaimer: Feeding a high protein diet is not ideal for longevity

Grain available 45 minutes 2x daily (60-70% of total daily intake)

- Kids: eat 3-4% of BW daily (at least 1lb hay + concentrate)
- Does/Bucks: 3-5 lbs. concentrate

Free choice grass hay (30-40% of total daily intake)

Must have adequate fresh, clean water at all times

Ammonium Chloride…what should we do??

WHAT ABOUT THE BABIES?

Newborn kids need 10-20% BW in colostrum within 3 - 12 hours of birth

Colostrum absorption rapidly decreases from birth to 36h of age

Avoid bovine colostrum (hemolytic crisis / anemia; lower IgG content)

Free of Caprine Arthritis Encephalitis / Johne's

Tube feed with 14-18 French red rubber (nose to last rib); esophagus is on the left

MILK PRODUCTION

- If milk volume is insufficient to support more than 1 newborn, leave strongest kid with dam and tube/bottle feed the weaker/weakest kids.
- If bottle feeding replacer, feed colostrum for 2 to 3 days as it is rich in Vitamin A, energy, protein and local gut-acting antibodies
- Colostrum also acts as laxative
- Bottle feed 10-20% of kids' BW (in L) of replacer divided into 4 feedings until week 3
- Maintaining BG is critical
- Replacer should be 20% protein : 20% fat with Vitamins A, E and D

CREEP FEED

- Use of supplemental feed for nursing kids
- Make available as soon as possible, especially to orphaned kids (establish rumen function)

DISORDERS / DISEASES

- Hypocalcemia - dairy goats!
  - Right before or after kidding
  - Compounded by hypophosphatemia and/or hyper/hypoMg
  - IV calcium gluconate, propylene glycol, IV fluids, hospitalization
- Grass tetany - hypoMg
  - Early spring, pastures well fertilized with N and K→ elevated N and K reduce Mg absorption from the GIT

DISORDERS CONTINUED

- Urolithiasis
  - Early castrated wethers
  - Pushing too hard with grain
- GI Parasites
  - Negative effect on energy and amino acid metabolism, increase in GIT protein turnover

CASE STUDY

- Timon, 4 year old MC Nigerian Dwarf owned by family in Hillsborough County, FL
- Pizzle amputation 2 years ago due to obstruction, off grain and alfalfa since
- Re-presented obstructed 2 weeks ago
- Emergency tube cystostomy
- Calcium carbonate stones identified as the culprit!


K AND ARROW MATCH BLACK O WHEN
CLIPPER REORDER NO 26410100 AAMI/ISO

QUESTIONS?

REFERENCES

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Freking, et. al. 2023 Oklahoma State University Extension, Feeding Goats and Nutrition, Chapter 5.

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