

NUTRITIONAL CONSIDERATIONS FOR PREGNANCY AND HEALTH

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Nutrition for Health

- Major Categories of disease:
- Wounds and injuries
- Congenital or birth defect
- Poisoning
- Nutritional and metabolic diseases
- Neoplasms or cancer
- Infectious diseases



Nutrition for Health

- Immune System is body's first line of defense against infectious diseases, whether it be viruses, bacteria, parasites and cancer



Factors Affecting Immune System

- Genetics
- Stress
- Nutrition
- Immune system is at far end of the table when it comes to nutrition. The immune system is nutritionally depressed before an animal starts to lose weight
- Obesity also depresses the immune system



Nutrition and the Immune System

- Protein and energy are required for immune system functioning. Is the animal in good body condition?
- Vitamins A, D and E are very important in disease prevention.
- Vitamin D from sunlight
- Vitamin A & E from leafy green forages or supplements

Minerals Important for Immunity

- Selenium, Copper and Zinc major importance
- Iron, Manganese and Magnesium also important



Mineral Deficiencies

- County Agent or University Extension Specialist may know general mineral deficiencies in an area, such as Selenium or Iodine
- Forage analysis of what animals are eating including hay \$30./sample
- Liver sample analysis at Michigan State Diagnostic Laboratory most informative.

Mineral Supplementation

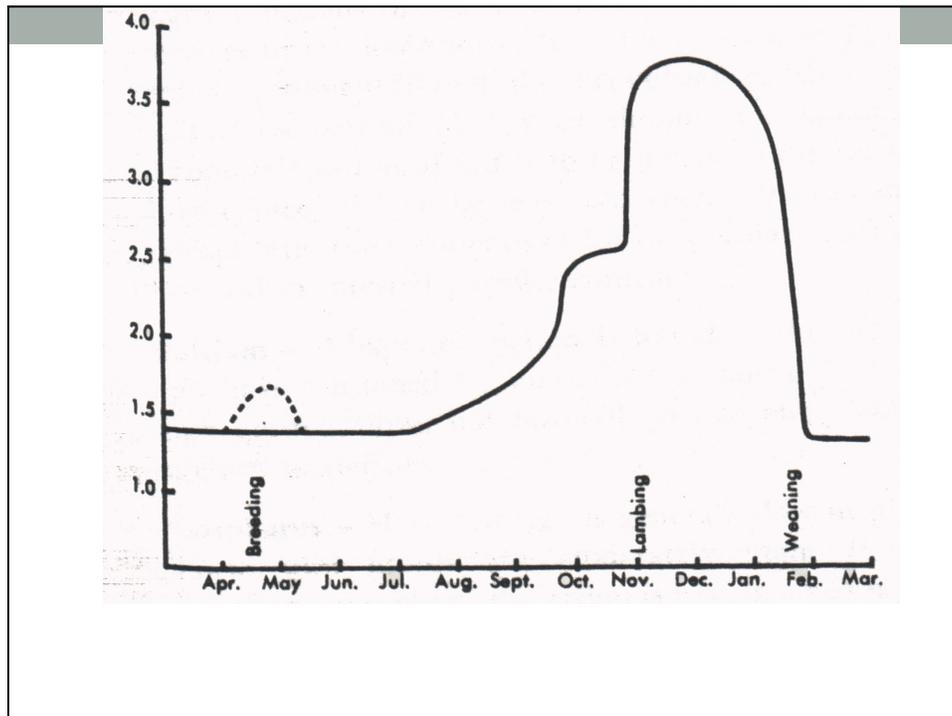
- Use a good mineral that animals will consume
- Loose mineral available at all times, protected from the rain
- Liver analysis will tell you how you are doing
- Mineral deficiencies usually affect health and reproduction and are more difficult to diagnose

Growing Replacements

- If planning to lamb as yearlings, must provide extra nutrition
- Supplement with some grain
- Supplement with best pastures or creep forward grazing
- Weighing or chest circumference to make sure you are on target to reach breeding weight

Flushing

- Providing extra nutrients to ewes beginning a few weeks before breeding season and continuing through part of breeding season
- Flushing may increase lambing % and number of triplets
- Ewes in BCS >3 generally do not respond
- Ewes in BCS <2.5 may respond



Early Gestation

- Goal is to keep BCS 3.0-3.5 first 100 days of gestation
- Undernutrition at this time reduces placental size which results in low birthweight lambs and reduced livability



Late Gestation

- Last 6 weeks of gestation
- 70% of fetal growth
- Development of mammary system
- Rumen capacity (and intake) is decreasing
- Higher quality feed is needed



Late Gestation

- Energy is most likely to be deficient
- Only a slight increase in protein requirement
- Calcium requirements virtually double during late pregnancy
- Selenium and vitamin E are critical in late gestation

How much nutrition?

- Weight and Age of Ewe
- Number of fetuses
- Need high quality forage
- Will often need to supplement some grain
- If forage quality is low, you may need to supplement protein or calcium

Consequences of Inadequate Nutrition

- Pregnancy toxemia or ketosis
- Small weak lambs and higher lamb mortality
- Reduced quantity and quality of colostrum
- Low milk production
- Will wean fewer and lighter weight lambs and have more health problems

Consequence of Overfeeding

- Pregnancy toxemia
- Increased lambing difficulty
- Large lambs with higher mortality
- Increased prolapses

Feeding Management

- Adequate feeder space
- Yearlings fed separately
- Clean fresh water



Feed Additives

- Use Rumensin or Deccox to prevent coccidiosis
- Antibiotics may be needed to prevent infectious abortions
- Mineral nutrition is important

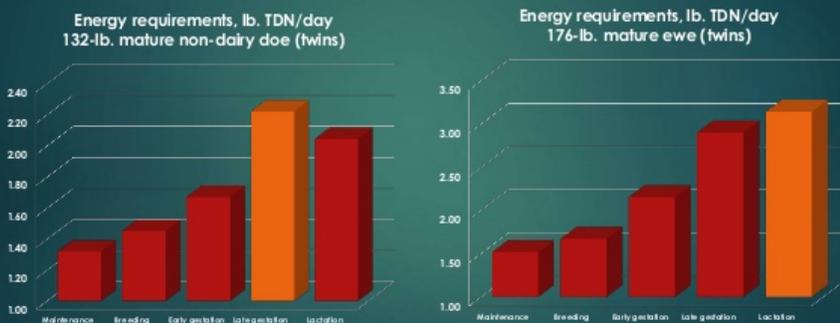
Feeding After Lambing

- Water, even warm water
- Best quality hay
- Keep on same feeding regimen they were on previously
- Gradually increase grain in diet up to 1 lb/day /lamb

Nutrition During Lactation

- Ewes highest nutritional requirement is first 6-8 weeks of lactation
- Energy requirement is increased by 30% and protein requirement increased by 55%
- Ewe can't consume enough and will use her body reserves and lose weight
- Importance of having sufficient body condition at lambing

Energy requirements vary by stage of production



Source: Nutrient requirements of small ruminants, 2007

Feeding During Lactation

- Yearlings need to be fed and managed separately
- Ewes with singles have lowest nutrient requirement
- Ewe with twins require 20-40% more than a single
- Triplets require 40-60% more than ewe with single
- Almost impossible for ewe to raise triplets on pasture with no supplement

Lamb Nutrition

- Milk is all that is needed first couple of weeks
- Lambs start nibbling at solid food from day 1
- Ewe milk peaks between 3 and 5 weeks of lactation
- At 6 weeks of age lambs are getting half their nutrition from solid food



Creep Feeding

- Providing additional grain to nursing lambs while excluding ewes
- Advantageous for early weaning, high level of multiples
- Increases weaning weights

Creep Feeding

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Creep feeding

ewes



- ▶ Lambs gain access through a "creep" – an opening in the fence or gate that is large enough for the lambs to get through, but too small for the ewes to enter.



- ▶ The creep area should be located in a high traffic area.
- ▶ A light will help to attract the lambs.
- ▶ It should be kept dry and well-bedded.
- ▶ Besides providing feed, it is a place for lambs to loiter and sleep.
- ▶ Should have ~2 square feet per lamb.
- ▶ Can also set up a creep feeder on pasture.

Creep Feeding

- Palatable feed with soybean meal and cracked or ground corn
- 18-20% all natural protein
- Coccidiostat Rumensin or Deccox
- Keep feed clean fresh and dry
- Feeders that lambs can't stand in

Creep Grazing

- Have a small high quality pasture exclusively for lambs such as oats, crabgrass or alfalfa
- Use a creep gate so that only lambs can access the forage



Creep Forward Grazing

- A rotational grazing scheme using a creep gate to allow lambs to access the next rotational pasture to be grazed
- Allows lambs to have highest quality pasture without competing with ewes
- May help with parasite level
- May help with reducing weaning stress?

Weaning

- When 30 days to 6-7 months of age natural weaning
- Usually 60-120 days of age
- Causes stress to lamb and consequent sickness
- Causes mastitis in ewes
- Must prevent coccidiosis

Low Stress Weaning

- Leave lambs in same group in familiar surroundings, same diet
- Move ewes to across the fence
- Put one or two nanny ewes in with lambs
- After a couple of days open the ewe pasture to the next pasture and they will leave on their own

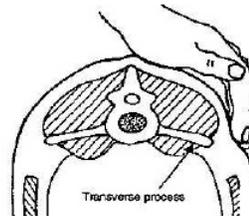
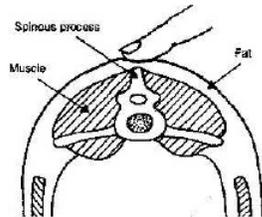
Weaning

- Feed low protein/low energy diet 5-10 days preweaning -3-5 days post weaning
- Restrict water intake before/after weaning
- Wean cold turkey
- No special feeding or management needed when lambs are weaned late or naturally

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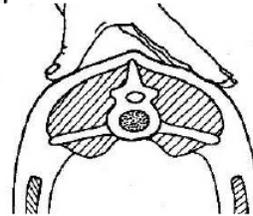
Body condition scoring

an estimate of fat and muscle



- ▶ It is a subjective score. The exact score is not as important as the relative scores and differences between scores.

- Both the vertical bone protrusion (spinous process) and horizontal protrusion (transverse process) of the loin are felt and used to access body condition scoring.



Body condition scoring

- ▶ The system most widely used in the U.S. uses a scale of 1 to 5, with 1 being an emaciated sheep, 3 being a sheep in average condition, and 5 being an obese sheep.
- ▶ Half scores are commonly used.
- ▶ On average, 1 condition score is equal to about 13 percent of the live weight of a ewe at a moderate condition score of 3 to 3.5.
- ▶ Most sheep have body condition scores between 2 and 4.
- ▶ A ewe's body condition score will change throughout her production cycle.
- ▶ The three most important times to body condition score ewes are prior to breeding, late gestation, and weaning.

