

NUTRITION OF THE EWE AND HER LAMBS



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Flushing: pre-breeding → breeding

- ▶ Start supplementing ewes a few weeks before the start of the breeding season, so that they are actively gaining weight.
- ▶ Continue feeding for the first several weeks of the breeding season.
- ▶ Flushing may increase lambing percentage by increasing the number of eggs that are ovulated and improving embryo survival.
- ▶ Flushing has more effect early in the breeding season, but may also improve embryo survival late in the breeding season.
- ▶ Ram may need extra feed, too.



Flushing: pre-breeding → breeding

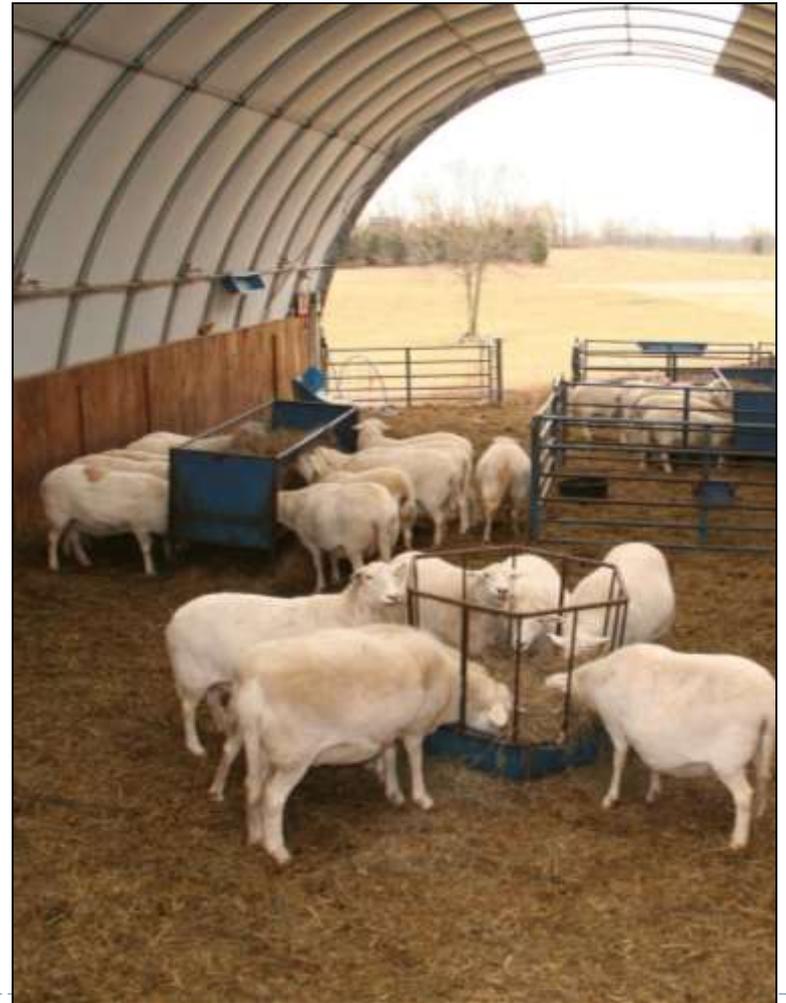
- ▶ Flush thin ewes (BCS < 2.5/5.0)
- ▶ Ewes that are already in good body condition generally do not respond to flushing.
- ▶ Mature ewes respond better to flushing than yearlings.
- ▶ Flush ewes by feeding them 0.5 to 1.0 lb. of grain per head per day or by moving them to a better quality pasture.
- ▶ Do not breed on pastures contain higher percentage of legumes (phytoestrogens) or endophyte-infected fescue (ergot alkaloids).



Early to mid-gestation

Placental development occurs first 30 to 90 days of pregnancy.

- ▶ Placental size (or weight) affects the nutrient transfer between the ewe and her fetuses.
- ▶ Underdeveloped placentas result in low birth weights, regardless of late gestation nutrition.
- ▶ 21 days of severe underfeeding or 80 days of moderate underfeeding can affect placental development.
- ▶ Do not overfeed or underfeed; aim to have ewes with a body condition score of 3 to 3.5.
- ➔ Nutrient requirements are only slightly above maintenance.



Late gestation



- ▶ Proper feeding and management during late gestation are crucial to a successful lambing season.
- ▶ During the last 4 to 6 weeks of gestation:
 - ▶ 70 percent of fetal growth is occurring.
 - ▶ The ewe's mammary system is developing.
 - ▶ The ewe's rumen capacity is decreasing.
 - ▶ She may have reduced activity.



Extra nutrition is needed.

- ▶ To support fetal growth.
- ▶ To support mammary tissue development.
- ▶ To prevent pregnancy toxemia (ketosis) and milk fever.
- ▶ To ensure the birth of strong, healthy, lambs of moderate birth weight.



Late gestation nutrition

- ▶ Energy (TDN) is the nutrient required in the largest quantity.
 - ▶ Energy is the nutrient most likely to be deficient in the diet.
 - ▶ Protein requirements (CP) are not significantly higher.
 - ▶ Calcium requirements virtually double during late pregnancy.
 - ▶ Selenium and vitamin E are also critical nutrients during late gestation.
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Late gestation nutrition



- ▶ Level of nutrition depends upon the size (weight) and age of ewe and the number of fetuses she is carrying.
- ▶ To meet the energy needs of pregnant ewes, you usually need to some feed grain.
- ▶ If forage quality is low, you may also need to supplement protein and/or calcium in the diet.



Do not underfeed ewes.

Even the fat ones!

- ▶ Inadequate nutrition can result in:
 - ▶ Pregnancy toxemia (ketosis).
 - ▶ Small and weak lambs.
 - ▶ Higher lamb mortality
 - ▶ Reduced quality and quantity of colostrum.
 - ▶ Poor milk production.
 - ▶ Reduced wool production in offspring due to fewer secondary follicles.



Do not over feed ewes

Even the thin ones!

▶ WHY?

- ▶ Fat ewes are more prone to pregnancy toxemia.
- ▶ Fat ewes experience more lambing difficulties (dystocia).
- ▶ Fat ewes are more likely to prolapse.
- ▶ Large fetuses can cause dystocia.
- ▶ Oversized lambs have a higher mortality.
- ▶ Fat is expense to put on.



Proper feeding management

- ▶ Have enough feeder space so that all sheep can eat at once . . . with room to spare.
- ▶ Feed and manage yearlings separately from mature ewes.
- ▶ Do not feed on the ground.
- ▶ Provide plenty of clean, fresh, ice-free water.



Feed additives (during late gestation)

- ▶ Feed a coccidiostat* to reduce coccidia in the lambing environment and as an aid to prevent abortions caused by toxoplasmosis (cat coccidia).
 - ▶ Bovatec®
 - ▶ Rumensin® ☠ to equines
 - ▶ Deccox®
- ? Antibiotics to prevent abortions (will require Vet Rx in 2017).
- ▶ Make sure mineral mix contains adequate selenium.
 - ▶ It is best to force feed minerals.



Two common health problems during late pregnancy

- ▶ Pregnancy toxemia (ketosis)
 - ▶ Inadequate intake of energy during late gestation.
 - ▶ Fat breakdown produces toxic ketone bodies.
 - ▶ Treat with propylene glycol or IV glucose (or c-section).
- ▶ Milk fever (hypocalcemia)
 - ▶ Low blood calcium caused by not enough or too much calcium in diet.
 - ▶ Treat with oral, sub-Q, or IV calcium solution.



Similar symptoms



Feeding after lambing

- ▶ Plenty of ice-free, clean, fresh water.
 - ▶ Some producers give warm water.
- ▶ Feed best quality hay. Ideally, legume or legume-grass mix
- ▶ No grain first 24 hours after lambing.
- ▶ Gradually increase grain in lactation diet.



Feeding during lactation



- ▶ Ewe's highest nutritional requirements are during first 6 to 8 weeks of lactation.
- ▶ Highest percentage of feed bill.
- ▶ Energy and protein requirements increase by 30 and 55 percent, respectively.
- ▶ Ewes should have body reserves (fat) for optimum performance.
- ▶ Inadequate energy intake increases protein need.



Feeding during lactation



- ▶ Ideally, ewes should be separated into production groups for feeding.
- ▶ General rule of thumb is one lb. of grain per lamb or access to better pasture (quality and quantity).
- ▶ A loss of weight and body condition is acceptable (and expected).
- ▶ Yearlings should be fed and managed separately until they wean their first set of lambs; ideally until they are bred for the second time.



Feeding during lactation



- ▶ Singles
 - ▶ Lowest nutritional requirements.

- ▶ Twins
 - ▶ Produce 20 to 40 percent more milk than ewes nursing singles.
 - ▶ A ewe nursing twin lambs growing at 0.66 lbs. per day is as productive as a dairy cow producing 66 lbs. of milk/day.

- ▶ Triplets
 - ▶ Full feed?
May need to limit forage intake.
 - ▶ Hard for a ewe to raise triplets on pasture without supplementation.
 - ▶ Ewe nursing triplets is equivalent to a high producing dairy cow.

General rule of thumb is 1 lb. of grain per lamb.

Lamb nutrition: Colostrum

- ▶ Colostrum is the first milk produced by the female. It is rich in maternal antibodies and nutrition.
- ▶ Both the ability of the lamb to absorb antibodies and the supply of antibodies in colostrum decrease rapidly after birth.
- ▶ It is vital that the lamb receives its mother's first milk in the first few hours after birth for a high level of protection against disease.
- ▶ By 24 hours, a lamb loses the ability to absorb antibodies from the colostrum.
- ▶ Lambs need one ounce of colostrum per pound of body weight during their first 24 hours of life.



Colostrum sources

- 1) From the lamb's mother
- 2) Fresh colostrum from another ewe that has lambed. *Old ewes produce better colostrum than young ewes*
- 3) Frozen colostrum from another ewe in the flock. *Thaw slowly!*
- 4) Fresh or frozen goat or ewe colostrum from another farm (of similar disease status).
Disease risk: OPP, CAE, Johne's risk?
- 5) Cow colostrum
*Colored breeds produce colostrum with more fat
Give one third more volume. Johne's risk?*
- 6) Synthetic colostrum (bovine origin)
Colostrum Supplement - not a substitute
Colostrum Replacer (contains antibodies)
- 7) Ewe milk replacer
not a substitute for colostrum



Feeding orphans

- ▶ Adequate colostrum.
- ▶ Good quality milk replacer
milk proteins
high fat (ewe)
- ▶ Mix properly.
- ▶ After first few days, feed cold milk to
prevent lamb(s) from overeating.
- ▶ Small numbers - bottle
Large numbers - lamb bar
- ▶ Start on creep feed early.
- ▶ Wean at 4-6 weeks (min. 20 lbs.)



Young Lamb Nutrition

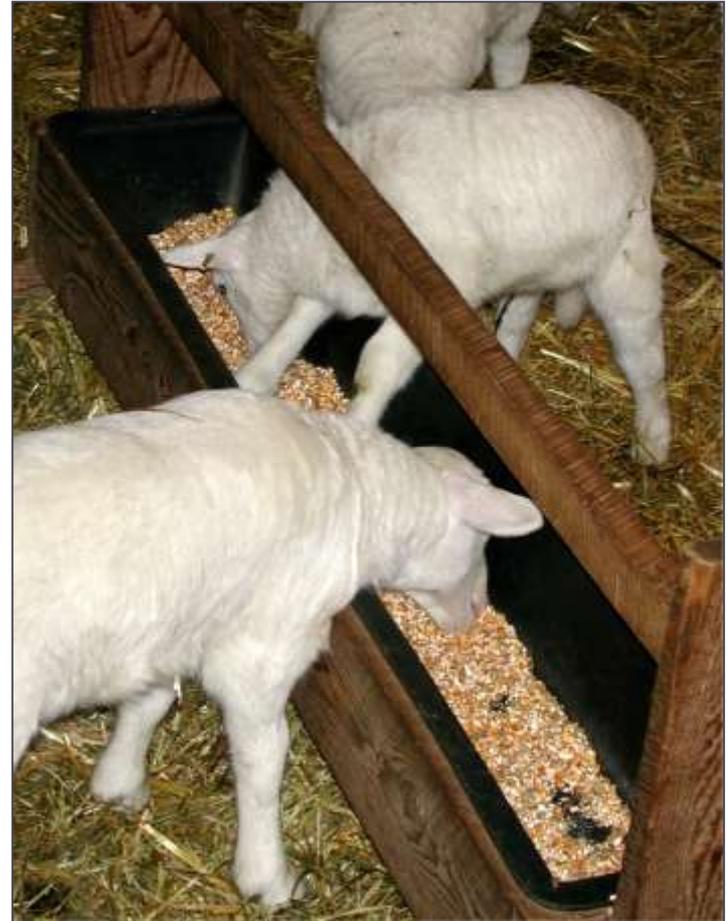


- ▶ For the first several weeks of life, all a lamb needs for nourishment is its mother's milk.
- ▶ Lambs will start to nibble on solid food soon after birth.
- ▶ 74% of the ewe's milk is supplied in the first 8 weeks of lactation.
- ▶ A ewe's milk production peaks between 3 and 5 weeks of lactation.
- ▶ By the time lambs are 4 to 6 weeks old, they may be obtaining as much as 50 percent of their nutrient intake from sources other than their mother's milk.



Creep feeding

- ▶ A means of providing extra nutrients (usually grain) to nursing lambs – puts on extra pounds and helps to develop rumen.
- ▶ Beneficial to lambs managed an intensive system in which early weaning is practiced.
- ▶ Advantageous in flocks that have a lot of multiple births or flocks where milk production is limited.
- ▶ It is more efficient to feed the lamb directly than to feed the ewe to produce more milk.
- ▶ Is of less value for lambs that will be developed on pasture.
- ▶ May not be cost-effective in all situations.



Creep feeding



- ▶ 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



- ▶ Start when lambs are 1-2 weeks old.
- ▶ Feed palatable feeds with small particle size: soybean meal, cracked or ground corn.
- ▶ 18-20 percent all-natural protein.
- ▶ Include a coccidiostat.
- ▶ Fresh and dry. Don't let feed run out.
- ▶ Clean, fresh water
- ▶ Good quality hay.
- ▶ Feeders that the lambs cannot stand or play in.
- ▶ Creep-fed lambs should be vaccinated for overeating disease (enterotoxemia).



Creep feeding on pasture

▶ Creep feed

- ▶ Depends on quantity and quality of grazing.



▶ Creep grazing

- ▶ Allow lambs to graze higher quality pasture than ewes.



Weaning

removing the milk diet



- ▶ Weaning age varies from less than 30 days to 6 or 7 months of age (natural weaning).
- ▶ Usually 60 to 120 days.
- ▶ Causes stress to lambs (nutritional) and ewe (mastitis risk).



Weaning: Lamb

- ▶ Leave lamb in familiar surroundings.
- ▶ Leave lamb in same group.
- ▶ Leave lamb on same diet.
- ▶ Be sure to vaccinate for overeating disease prior to weaning.
- ▶ Treat for coccidiosis prior to weaning.
- ▶ Maintain fence line contact with dam to minimize weaning stress (works with cattle ?).



Weaning: Ewe



- ▶ Feed low protein-low energy diet 5-10 days before weaning and 3-5 days after weaning.
- ▶ Restrict water intake before/after weaning (?)
- ▶ Wean cold turkey
- ▶ No special feeding or management is needed when lambs are weaned late or naturally.

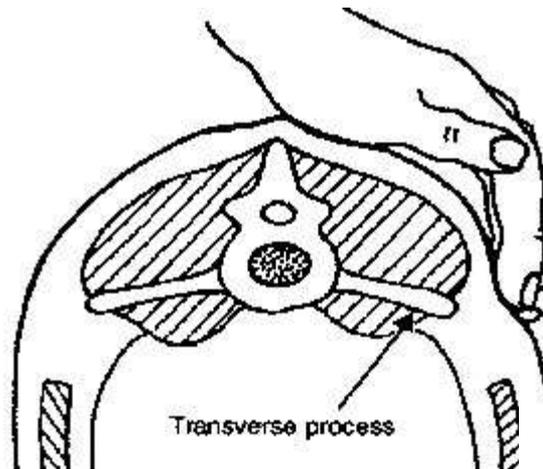
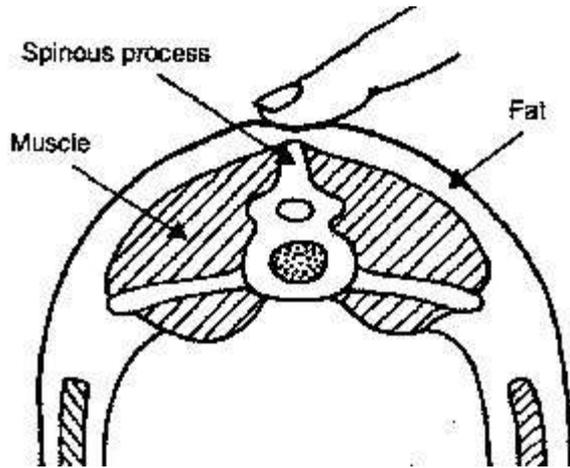


Body Condition Scoring

A way to evaluate nutritional program.

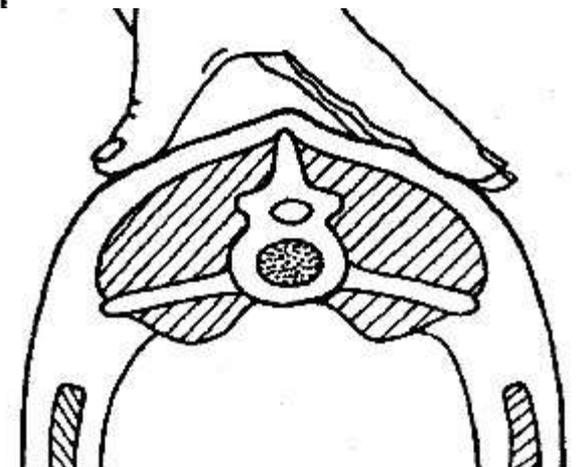
Body condition scoring

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 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.





Questions ?