

Choosing the ideal market lamb is an important step in a successful 4-H livestock project. The next step is developing the best feeding program possible. Your goal is to create a feeding program that can produce a healthy lamb at its ideal weight by show time. A poor nutrition program can cause deficiencies and imbalances, which hurt your lamb's health and body condition.

You can learn about ways to feed lambs from many different sources. Developing a ration that works for your program may take some time but will hopefully pay off in the show ring. This nutritional guide will tell you the basics of lamb nutrition and help you design the best feeding program for your lambs.

Market Lamb Project Guide:

Nutrition

Nutrition Basics

WATER

Lambs' bodies are made of 60 to 80 percent water. Obviously, water is very important for lambs. A lamb can go without water for long periods of time, but its performance may suffer. Most lambs drink about 2 pounds of water for each pound of feed eaten. A lamb that eats 3 pounds of grain and hay per day will drink about 6 pounds of water. One gallon of water is about 8 pounds. Since water is so important, the lamb must always have access to clean, fresh water. Water is especially important during the hot, humid summer months in Mississippi. Don't offer lambs water that is dirty, warm, or stale.

ENERGY

Energy is the fuel source for a lamb and is necessary for breathing, walking, maintaining heartbeat, and regulating body temperature. Most dry feeds provide a lot of energy in the form of starches, sugars, and fats.

A common measurement of the energy content in a feed is Total Digestible Nutrients (TDN). Lamb rations should contain 65 to 75 percent TDN. Generally, the higher the TDN content of the ration, the quicker a lamb will gain weight. Feed a ration that will allow your lamb to achieve its ideal weight. Grains, such as corn and oats, are high in energy (69 to 80 percent TDN), while feeds like cottonseed hulls and rice hulls are relatively low in en-

ergy content (10 to 40 percent TDN). Fat can also provide energy in the ration. The TDN content of hays and grasses is generally somewhere between that of grains and hulls. Good quality forages have a higher TDN content than poor quality forages do.

PROTEIN

After energy, protein is the second most abundant nutrient found in lamb feeds, but the protein content varies among rations. Most grains, such as corn and oats, contain 8 to 12 percent protein. Hays and grasses contain 6 to 15 percent protein. Soybean meal, a common protein supplement, generally contains over 40 percent protein. Usually, you have to feed a mixture of grains and protein supplements to make sure lambs get the right amount of protein.

Lamb feed should contain between 12 and 20 percent protein. This nutrient helps develop wool, hooves, skin, organs, and muscles. A lamb's protein requirement gets smaller as it gets older.

MINERALS

Minerals are involved in the formation of bone and teeth. They are also involved in many chemical reactions that take place in the body. Lambs must have minerals but only in small amounts. Generally, less than 10 percent of the lamb's diet consists of minerals.

There are two common types of minerals: those that are needed in larger quantities (macrominerals) and those that are needed in smaller quantities (microminerals, or trace minerals). Macrominerals include calcium, phosphorus, potassium, sodium, chlorine, magnesium, and sulfur. Microminerals include cobalt, copper, iodine, iron, manganese, molybdenum, selenium, and zinc. Most rations contain some of the minerals needed by the lamb, but it is often necessary to supplement feed with compounds like limestone, dicalcium phosphate, or a salt block.

When feeding lambs, remember that an excess supply of minerals can lead to health problems. An imbalance in the calcium-to-phosphorus ratio can lead to urinary calculi, or formation of salts. The ideal ratio is two

parts calcium to one part phosphorus. Check the feed labels to see which minerals are in the feed. Some trace minerals may contain levels of copper that could be toxic to sheep. For example, hog feeds contain levels of copper that could be toxic to a lamb.

VITAMINS

Like minerals, vitamins are necessary in small amounts. The most important vitamins for lambs are A, D, and E. Green grasses and hays are good sources of vitamins, but grains and low quality hays are poor sources of vitamins. It is common to supplement lamb rations with vitamins.

Additional Lamb Nutrition and Feeding Tips

PELLETED RATIONS

Pelleted rations may be more appealing to lambs and less dusty than other rations. Pellets are easier to handle and keep sheep from sorting out ingredients. Because pelleted feed can be more expensive, you and your family must decide if pelleting is worth the expense.

UREA

Urea can provide protein to weaned lambs and will reduce ration costs when protein supplements are expensive. Urea is best used when lambs are on a high-grain ration. No more than 25 percent of the total protein in the diet should come from urea.

FEEDING TIPS

When buying lambs, ask the producer what kind of feed the lambs have been fed. At first, lambs should be fed a similar ration. If you need to change the ration, do so over a period of days or weeks. This will allow the microbes in the rumen to adjust in order to digest the new feed. Rumen microbes help lambs digest grains and forages. Remember to feed lambs at the same time each day.

Stressful situations, such as long distance travel, can reduce the efficiency of a lamb's digestion. Do not push lambs too hard on arrival, or lambs may eat too

much food. After traveling, let lambs rest for several hours and then offer some good quality hay. After they eat, offer them water. If lambs are in a new location, a dripping water faucet may help them locate the source of water.

Introduce grain to lambs gradually. For example, lambs may be started on $\frac{1}{4}$ to $\frac{1}{2}$ pound of feed per day. Gradually increase the amount of grain fed over a 7 to 10 day period until a full ration is fed. If you bring several lambs onto your farm at once, they may need to be fed together until they get used to the surroundings and can be separated and fed individually.

Lambs that weigh less than 50 pounds should be fed a ration consisting of 16 to 18 percent protein. Dairy pellets are a common first ration. You can also formulate a starter ration. For lambs weighing between 50 and 85 pounds, include more energy and around 14 to 16 percent protein in the rations. Remember to increase the energy source in the ration gradually. Lambs weighing over 85 pounds need around 11 to 12 percent protein in the ration, and energy content should be high. You may consider lamb finisher rations at this weight. When lambs are overfed protein, the excess protein changes into energy. This is an expensive way to supply energy to lambs, so it is important to match the level of protein to the stage of development.

Final show weight depends on the feeder. Determine the desired show weight of the lamb and divide it by the number of days before the show. The result is the number of pounds the lamb needs to gain per day to reach that desired weight. Keep track of the weight of your lambs closely. Each lamb has a different potential for gain, and you may need to adjust the ration for individual lambs over time. Replacing forages with grain will increase weight gain, and replacing grain with forages will decrease weight gain. This is important to remember, as lambs may carry different amounts of condition at the same weight.

CHECKPOINTS OF NUTRITION MANAGEMENT

- Before buying lambs, make sure you have the right facilities. Pens should be large enough for the lambs to exercise. Two hundred square feet of space per lamb is ideal. Access to shade and shelter from bad weather is important. Electricity for lights and fans is also helpful.
- Be sure bedding in the stalls is clean and dry.
- Make clean, fresh water available at all times. In cold weather, break any ice on water buckets.
- Gradually introduce lambs to feed. Failure to do this may lead to digestive problems, and lambs may go off of feed for a while.
- To encourage lambs to gain weight at a desired rate, feed them a balanced ration. Avoid overfeeding or underfeeding lambs. Overfed lambs may carry too much condition by show time.
- Keep the feed and water troughs clean. Do not allow old feeds to get moldy or water to become dirty, warm, or stale.
- Be sure feeds are mixed thoroughly. Use fresh feed ingredients.
- Feed lambs on a regular schedule.
- Avoid sudden changes in the ration. Introduce new feed gradually over a period of days or weeks rather than at one feeding.
- Avoid feeding lambs on the ground.
- Do not use swine feeds; high copper levels in the feed may cause toxicity in lambs.
- Remember to include minerals and vitamins in a balanced ration. These nutrients are required in small amounts, but failure to provide them will reduce the performance of lambs. You may offer free-choice minerals.
- Feed two or more lambs together, especially when the lambs are in new surroundings.
- Keep complete, accurate feeding and management records. Know how each lamb responds to the amount of feed offered at each feeding.

- ❑ Determine the competitive weight and finish you want for your lambs. Many judges prefer to have a market lamb with 0.1 to 0.2 inches of back fat thickness.
 - Learn how to estimate back fat thickness and what a correctly finished lamb feels like.
 - If you can easily feel ribs and backbone when handling a lamb, it is too thin and has around 0.05 inches of fat thickness.
 - If it's hard for you to feel ribs and backbone, the lamb is likely over-conditioned and has a back fat thickness more than 0.2 inches.
 - Decide what you want your lamb's final weight to be in the Mississippi State Fair or Dixie National Junior Round-Up. The ideal weight depends on each lamb's frame size. Proper feeding and exercise will help you to achieve the desired competitive weight.
- ❑ Be aware that the following factors may affect feed requirements:
 - Cold weather can increase feed requirements.
 - A freshly shorn lamb needs more feed, especially during cold weather.
 - Lambs that are exercised regularly need more feed.

By **Dr. Dean Jousan**, Assistant Extension Professor, Animal & Dairy Sciences and **Mr. Roy Higdon**, Area Extension Agent IV, Clarke County Extension Service.

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