High Feed Costs – Strategies to Survive Them
Steven M. Jones, Associate Professor - Animal Science

Many factors have converged to make it more expensive to feed livestock, including small ruminants. Regardless of the purpose of their enterprise, most sheep and goat producers want to know how they can reduce their feed costs. Everything we feed our animals is more expensive than it was a few years ago, and it is likely to stay this way for the foreseeable future.

However, there are some steps producers can take to reduce feed costs. Many of the steps are common sense and cost little to no money to implement. Other strategies require a financial investment and should pay for themselves in the long run. What works for one producer may not work for another. Some strategies may require some economies of scale.

Feed balanced rations.

The first step towards reducing feed costs is fine-tuning your feeding program to make sure you are meeting, but not exceeding, your animals’ nutritional requirements. Sheep and goat nutrition requirements are based on size (weight), age and stage and level of production. Environmental conditions also affect nutrient requirements. Animals that have to walk further for feed as well as animals below their critical temperature have higher nutritional needs.

It is difficult to know how much to feed a sheep or goat if you don’t know how much it weighs. Ideally, you should weigh your animals at least once per year. Prior to breeding is usually the best time. If you never weigh your livestock, your feeding program will be rooted in guesswork. Very few people, if any, can accurately estimate the weight of livestock. Consider purchasing a scale or sharing a scale with other producers. Accurate weights will also aid in your animal health program. One of the quickest ways to increase anthelmintic resistance is to underdose an animal.

Divide herd into production groups.

Sheep and goats should be divided into production groups and fed according to their nutritional requirements. If you keep pregnant and lactating females in the same feeding group, some females will be overfed.
and some will be underfed. If you keep females nursing triplets in the same feeding group as females nursing twins or those nursing singles, the same thing will happen. Feeding growing animals in the same group as mature animals is also problematic. Overfeeding or underfeeding sheep and goats is costly in many ways. Overfed livestock are obviously more expensive to feed. They tend to experience more reproductive problems (embryo loss, pregnancy toxemia, dystocia, prolapses). Fat rams and bucks may be too lazy to breed. It may cost less to underfeed an animal, but you’ll probably lose more money in the long run as a result of poorer performance and health. If your financial resources prevent you from feeding properly, you should reduce your animal numbers, not reduce how much (or what) you feed to the whole flock.

**Balance rations.**

You can balance rations by hand (using simple math) or by using a personal computer. If you are a goat producer, you can use Langston University’s Ration Balancer and Nutrient Requirements Calculator. Commercial ration-balancing programs may also be purchased and used to formulate least-cost rations for sheep and goats.

Forages are usually the most variable part of any feeding program for ruminant livestock. Forage quality varies by plant species, stage of plant maturity and various other production factors. Because of this, forages should be tested to determine their nutritive content. A simple hay analysis only costs about $20. It can easily pay for itself. If hay is not tested, you may be overfeeding or underfeeding certain nutrients. You may be feeding more grain than is necessary or you may not be feeding enough grain to meet the nutritional requirements of your high-producing animals. Because forages vary in cost and nutritive value, it’s important to feed the right forage at the right time to the right group of animals.

**Weigh feed.**

All feed should be purchased and fed by weight. Sheep and goat nutritional requirements are based on weight not volume (bale or bucket). If you don’t know what a bale of hay weighs, you don’t know how much you are feeding your livestock or how much they are eating, and you don’t know how much it is costing you. You cannot compare its cost to other feedstuffs. The same is true of grain. A scoop of corn does not weigh the same as a scoop of pellets. It’s not necessary that you weigh every bale or scoop of grain, but you need to know what your bales weigh (on average) and what your scoop or bucket of grain weighs.

**Minimize feed wastage.**

Hay and grain should generally not be fed on the ground. There is considerably more feed wastage when feeding on the ground. Feeding on the ground can also spread diseases. All feed should be fed in feeders. You should favor feeders that minimize wastage and keep the feed clean and free from fecal or other foreign matter. Feeders can be built on the farm or purchased from commercial vendors. There are many different designs for feeders. Not all feeder designs will work equally well for all classes of sheep and goats. Goats are particularly adept at getting into feeders and on top of feed.

If feed is limit-fed, there needs to be enough feeder space for all animals in the feeding group to eat at one time. It is generally recommended that each female have 16 to 20 inches of feeder space. Lambs and kids should have 9 to 12 inches of feeder space. These space measurements may need to be adjusted up or down depending upon the species, size of the animals and presence of horns or dominant behavior. Animals that do not get their fair share of feed because of lack of feeder space will end up costing you money because their nutritional needs will probably not be met.

**Cull unproductive animals.**

When feed costs are high, culling standards should be equally high. You can’t afford to take a chance on marginally productive animals when feed costs are high. Why feed an ewe or doe that raises only one offspring when there are plenty of other females that will raise twins or triplets. Don’t make excuses for an ewe or doe that fails to raise any offspring. Get rid of her. On average, a female’s most productive years are from 3 to 6. The most efficient females in the flock are the ones that wean a greater proportion of their body weight. It’s a good idea to weigh and condition score your females at the start of breeding season and to weigh their offspring at the time of weaning. This will enable you to determine which females in your flock are the most efficient and which ones’ offspring you should retain for breeding. Replacements should be selected from the most productive females in the flock. These won’t necessarily be the “prettiest” ones. They’ll be the ones that utilize expensive feed resources to produce babies that grow well.

You can increase productivity by breeding ewe lambs and doelings. Well-grown ewe lambs and doelings can be bred to produce offspring by the time they are one year old. Size is more important than age when deciding if or when to breed lambs and kids. The recommendation is that females achieve approximately two-thirds of their mature weight before being bred.
Ewe lambs and doelings should be managed and fed separately from mature females, (ideally) up until the time they wean their first set of offspring. If ewe lambs and doelings aren’t big enough and you can’t manage them separately, you should not breed them until the second year of life.

Every extra lamb or kid that you produce will reduce your feed costs, because it will spread out your fixed costs (overhead). Feed costs tend to comprise 50 to 75 percent of the production costs on a sheep and/or goat farm.

Extending the Grazing Season

John Jennings, Professor - Forages

Summer drought reduces the hay crop yield, and long, cold winters increase the amount of hay needed. The past couple of years in Arkansas have included both weather extremes. The typical length of the hay feeding season in Arkansas is 135 days, starting around mid-November and lasting until March 31. It is interesting to know that the average hay feeding season for Wisconsin, Missouri and Mississippi lasts 140 days, about the same as in Arkansas (Lacefield, personal communication, 2011). But think about the location of those states. Missouri is in the middle of the continental U.S., Mississippi is on the Gulf Coast and Wisconsin is in the Great Lakes region. The climate and forage choices in Arkansas are conducive to a much shorter hay feeding season and a much longer grazing season. Farmers enrolled in the Arkansas 300 Days Grazing Program have successfully extended their grazing seasons to over 300 days by using the forage base existing on their farm, adding legumes and making some simple adjustments in forage planning and management. For most farms, extending the grazing season can be accomplished in five basic steps.

1. Start with an inventory of your forage base and livestock stocking rate.
2. Determine what management practices to add to increase seasonal grazing from your existing forage base.
3. Add complementary forages to fill in seasonal gaps.
4. Plan forage and grazing practices ahead for the year.
5. Monitor and adjust forages and livestock as needed.

Determine what management practices to add to increase seasonal grazing from your forage base.

Improving grazing management often makes the single largest contribution to pasture improvement. Pastures that are continuously grazed with no rotation are usually less productive than rotationally grazed pastures. Continuous grazing leads to only 35 percent utilization of the forage produced, or in cases of pastures too heavily stocked, it leads to overgrazed pastures that become weak and unproductive. Well-managed rotational grazing can improve forage utilization to as much as 65 percent and encourages growth

Inventories provide useful information on success of previous management and give direction for future management decisions.

Forage inventory tells you which forage species you have on the farm and when those forages are producing useful livestock feed. A forage inventory has two parts: 1) what species are in each pasture and 2) if the pastures provide adequate forage for the herd during spring, summer, fall and winter.

Pasture inventories are simple to conduct and give the landowner a chance to really look over fields. The pasture inventory form can also be printed from the Agriculture/pasture/forages section of the University of Arkansas Cooperative Extension Service website at www.uaex.edu. Start the inventory by walking a line across the field. Stop at every fourth or fifth step and then record a tally mark on the sheet next to the category corresponding to what is at the end of your right toe, whether it is a grass, legume, weed or bare ground. Continue walking across the field until you collect at least 50, preferably 100, such points. Record the data for each pasture on different tally sheets. Calculate the percentage of each category represented from the field. Inventories can also be conducted with an ATV. Hold a length of PVC pipe or similar pointer stick to drag on the ground. Stop after a certain number of feet or seconds and record the plant found at the end of the pointer stick. Inventories provide useful information on success of previous management and give direction for future management decisions.

Inventory forage for type and seasonal production.

Questions regarding pasture improvement are frequently focused on which new forage variety to plant. However, improving a pasture system often involves more assessment and management of existing forages rather than planting new forage species or varieties. A forage inventory tells you which forage species you have on the farm and when those forages are producing useful livestock feed. A forage inventory has two parts: 1) what species are in each pasture and 2) if the pastures provide adequate forage for the herd during spring, summer, fall and winter.
of legumes. Pasture regrowth rates are higher and the pasture becomes more productive. Rotational grazing can help maintain forage productivity longer into a drought period. Research has shown that increasing the rotation frequency from twice per month to twice per week increased the number of grazing days per acre by 40 percent. In Arkansas, producers who strip-grazed stockpiled fescue nearly doubled the number of animal-unit grazing days per acre and the savings per animal unit, compared to producers who continuously grazed the winter pasture.

**Add complementary forages to fill in seasonal gaps.**

Complementary forages add to the forage base instead of substituting for an existing forage. Examples would be adding winter annuals like ryegrass to a bermudagrass pasture or adding clover to a fescue pasture. Both the ryegrass and clover are high-quality forages that extend the grazing season for the pasture. Annual ryegrass provides excellent spring grazing when bermudagrass is dormant and reseeds readily in many cases. Clover added to fescue helps improve animal performance, especially in KY-31 toxic endophyte fescue fields. Clover added to bermuda can be grazed in spring to allow nitrogen fixed by the clover to be recycled to boost bermudagrass growth in summer.

**Plan forage and grazing practices ahead for the year.**

Advance planning of the forage production and grazing schedule helps avoid unexpected problems caused by poor weather. For example, in a forage system with fescue/clover mixed pastures and bermudagrass pastures, a plan might include the following strategy:

| Spring          | • Start rotationally grazing fescue at greenup to get the rotation sequence under control before rapid grass growth begins.  
                  | • If high-quality clover is needed in May or June, graze clover pastures 30 days earlier so the regrowth will be ready when needed.  
                  | • Control winter annual weeds on bermudagrass pastures. Fescue pastures grow at the same time in spring as winter weeds in bermudagrass, so grazing both at the same time may not be a good option. Selective herbicide application on weeds in bermudagrass may help.  
                  | • Plan summer grazing sequence.  

| Summer          | • Rotationally graze bermudagrass. This will help keep the grass in a high-quality growing condition and will give the opportunity to protect accumulated growth for limit-grazing in case of drought conditions.  
                  | • Fertilize bermuda pasture in blocks on a 30-day schedule. Fertilize a few acres for June growth then more in July if conditions warrant. Under good summer rainfall, N fertilization may be minimal on pasture.  
                  | • Fertilize some bermudagrass pasture in August for fall stockpiled pasture to graze in October-November to reduce hay feeding.  
                  | • Plan fall grazing sequence.  

| Fall            | • Fertilize some fescue pasture for stockpiled pasture to graze from December to February. This is a very cost-effective practice and greatly reduces hay feeding in winter.  
                  | • Strip-graze stockpiled bermudagrass pasture during October/November. This allows time for fescue/clover to grow for grazing in November and December.  
                  | • Annual ryegrass can be overseeded onto bermudagrass pasture after strip-grazing if needed.  
                  | • Rotationally graze fescue/clover pastures in fall before cold winter weather. Clover does not hold up well under freezing conditions, so it should be grazed before grazing the stockpiled fescue pastures.  
                  | • Plan winter grazing sequence.  

| Winter          | • Strip-graze stockpiled fescue.  
                  | • Overseed clover on fescue pastures where needed.  
                  | • Plan spring grazing sequence.  

Monitor and adjust forages and livestock as needed.

Both animals and forages should be observed for responses to changes in either part of the system. Forage growth changes as weather changes. Changes in livestock management or animal stocking rate affect forage growth and availability. By monitoring how well the forage and animal systems matched during each season and for the year, adjustments can be made to optimize the system. Good monitoring also helps with future plans for expansion.

Diseases: Prevention and Management

Disease can enter a producer’s farm or ranch from many sources. Introducing new animals is the usual avenue, but it is definitely not the only way that illness finds its way into the herd.

1. Bringing new animals into the herd from off site.
2. Shows are a huge source of infection and illness. They are similar to children’s day-care centers – incubators for disease.
3. Poor health management practices within the herd.
4. Poor nutrition.

The most basic method of disease control in individual herds/flocks is to avoid introduction of disease agents. If possible and practical, producers should keep a closed herd/flock. Most diseases of a contagious nature are introduced into operations when new animals are added. Disease agents can be introduced when breeding animals are added to an operation, when animals commingle at a fair, show or sale or when animals contact wildlife. If a closed herd/flock is not feasible, then use an animal quarantine program. A useful isolation program consists of a facility that prevents commingling of animals for at least 30 days, including separate water supplies.

Most producers are aware that they should quarantine new animals brought from outside the ranch property in order to protect their goats from whatever diseases the new animals might be carrying. However, the reverse is just as true: newly introduced goats need to be protected from organisms present on the ranch to which their immune systems have not been previously exposed. Recognize that these goats are on a new property in a changed environment and are often in a much different climate than they had been previously adapted for living. From the moment they left their previous homes, these new goats’ immune systems are under constant assault.

Vaccinating the herd/flock can provide some insurance against specific common diseases. However, each vaccination program must be tailored to an individual operation. It is also important that producers understand what they are vaccinating for and why it is important. This is an instance where a veterinarian’s assistance can be critical. Just because there is a vaccine available for a specific disease does not mean producers should use it. There should be economic or other justification to vaccinate for specific diseases. Producers should work through the risk factors and other control programs with a veterinarian and decide whether or not it makes sense to vaccinate. The clostridial vaccines are the only ones that can be recommended on a blanket basis for almost all sheep and goats. All other vaccination programs need to be developed specific to a herd/flock.

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Sheep and goats should be vaccinated for Clostridium perfringens Types C and D and tetanus (CD&T) at appropriate times. Combination vaccines (7- and 8-way) are also available against other clostridial diseases, such as blackleg and malignant edema. These vaccines are inexpensive, and when used properly, are very effective in preventing losses. Clostridial diseases are endemic to all sheep and goat operations. They are caused by specific bacteria that commonly live in the gut and manure of sheep and goats and, under specific conditions, can affect both sheep and goats.

When handling vaccinations, it is important to follow label directions, as vaccines must be stored, handled and administered properly. Only healthy livestock should be vaccinated.
Nutrition is vital for raising healthy livestock and for proper reproductive management. Flushing or feeding females so they gain weight prior to breeding will help them conceive. Forages should be used as much as possible when feeding sheep and goats, but producers may need to supplement with protein or energy, depending on nutritional demands. Important times to supplement are during late gestation, during lactation, during growth of replacement breeding stock and prior to breeding.

Minerals and salt should also be provided year-round in a block, mixed in feed or loose. Minerals used should be designed and formulated for the species of animal being fed. Goats should be fed minerals formulated for goats, and sheep should be fed minerals formulated for sheep. Remember to pay particular attention to copper content of feeds and minerals used for sheep, as they are very susceptible to copper toxicity. Proper mineral nutrition can enhance the immune system of animals. Well-fed livestock are more resistant to diseases and parasites, so balanced rations appropriate for production stage should be fed in order to maintain body condition and control losses due to parasitism and infectious diseases. Any changes in feeding should be made gradually.

A sound management program to keep animals healthy is basic to production of both sheep and goats. Producers must observe animals closely to keep individual animals and the whole herd or flock healthy and productive. If the health status of a herd is compromised, that operation will not be as efficient as possible.

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