



What Kind of Hay is Best for Goats?

By Jackie Nix

What kind of hay is best for goats? I hear this question a lot and my answer surprises many goat owners. The short answer is GOOD hay. Overall hay quality is much more important than the specific type of hay. Let me elaborate. Goats, being ruminants, thrive on forages. The rumen houses microbes that ultimately feed on these forages. These microbes allow ruminants to make use of plant materials that are indigestible by monogastric (single-stomached) animals such as humans. Average meat goats require about 10-14% crude protein and 60-65% TDN (on a dry matter basis) in the total diet (combination of all hay, pasture and supplements eaten). There are many different species of grasses and legumes out there that are regularly harvested as hay. While some goat-owners may have a personal preference as to the type of hay that their goats receive, there is no one type of “goat hay” out there that can, or even should, be used. Any type of hay that is of good to excellent quality and is properly harvested and stored can be successfully fed to goats with correct management. This is not to say that different plant species do not each have their own specific advantages and disadvantages. As they say, there is no free lunch... even for goats! For the remainder of this article I will provide an overview of a few of the most popular species of forages that are harvested as hay and fed to goats.

Fescue

Fescue is a widely grown cool-season forage grass. There are roughly 100 different species of Fescue but the most cultivated species are Tall Fescue and Meadow Fescue. Both are high yielding, broad-leafed perennial bunchgrasses. Some advantages of fescue are that it is relatively easy to establish and maintain and that it is well suited to wet-natured, organic soils and moderate environmental conditions found in much of the United States. Fescue has adequate palatability and is a nutritious forage option that can be successfully used in goat operations. Average fescue hay typically contains 8-9% crude protein and 55-60% TDN on a dry matter basis. As with all hay, nutritional content varies widely according to management and harvesting conditions and can be higher or lower than these figures. Another advantage of fescue is its ability to retain quality after “stockpiling.” After frost, stockpiled fescue can be grazed as “standing hay”. Most species of fescue contain a symbiotic parasitic fungus called an endophyte. This fungus affords the fescue plant much of its resilience and adaptability. This same endophyte can create havoc for livestock. In cases of high levels of endophyte infestation, fescue toxicosis can result. The fescue endophyte is known to interfere with blood flow and heat regulation in the animal. As a result, toxicity symptoms include reduced feed intake and milk production (animals spend more time in shade and water and less time grazing) and poor conception rates. In extreme cases animals can experience necrosis on tips of ears as well as lameness and hoof malformation. Fescue endophyte infection level is variable from field to field. Pastures with lower infection levels will cause fewer problems than those with high infection levels. Fescue toxicity is more

common in malnourished animals and those suffering heavy parasitism. There are several management options to minimize the negative effects of the fescue endophyte including use of low-endophyte fescue varieties; establishment of other forages (commonly clover) in pastures and hay fields to dilute the amount of endophyte consumed; adequate parasite control measures and finally nutritional supplementation.

Bermudagrass

Bermudagrass is a fast growing, hearty species of warm-season perennial grass found extensively in the Southeast. Bermudagrass thrives on well-drained, sandy-type soils and temperatures above 70° F. Improved hybrid varieties of bermudagrass are well suited for hay production. Common varieties include Coastal, Tifton 44, Tifton 85 and Tifton 78. Many goats do quite well on bermudagrass pastures and hay. An advantage of bermudagrass is that it is relatively easy to establish and maintain. However, hybrid varieties of bermudagrass must be sprigged rather than seeded. Since sprigging is best accomplished by professionals, establishment of hybrid bermudagrass can be relatively expensive. Another disadvantage is that bermudagrass has a high fertilization requirement. Hay fields or pastures that are not regularly fertilized and/or limed produce poor yields and contain low nutrient content. Another disadvantage is that bermudagrass can grow so fast during summer months that it can easily become over-mature without regular mowing or good pasture management. The desired canopy height for vegetative growth of bermudagrass pastures is fairly low (2 to 4 inches) and can aid in the spread of parasites. However, strategic rotational grazing can help alleviate this disadvantage. Average Coastal Bermudagrass hay tests out at roughly 10-12% crude protein and 55% TDN on a dry matter basis. But once again, poorly fertilized or over-mature hay can contain much lower nutrient values while well fertilized hay that is properly harvested at the vegetative stage can deliver even higher nutritional values.

Alfalfa

Alfalfa is a high-quality legume that is commonly grown in the Northwest, Northeast and Midwest. Alfalfa is extremely drought resistant with a substantial taproot. It requires well-drained soils with a low water table. Unless you live in an area where alfalfa is grown locally, this hay option can be quite expensive. Advantages of alfalfa are that it is an excellent source of protein and is highly palatable to livestock. Good quality alfalfa hay delivers 15-20% crude protein and 55-60% TDN. Alfalfa is used extensively in dairy operations where alfalfa helps deliver high protein and calcium needed for heavy milk production. The majority of meat, fiber and hobby goats; however, do not require these high levels of protein. Excess protein can be converted into energy to a certain extent, but this is a very expensive way to provide energy. Most excess protein is ultimately converted into urea and excreted in the urine. In cases of extreme over-feeding of protein, kidney damage can occur. Also, very high quality alfalfa hay can present a frothy bloat hazard. Another disadvantage of alfalfa hay is that the leaves (where the nutritional value is) can be easily lost if hay is too dry or improperly transported or stored. Since alfalfa is relatively high in calcium and low in phosphorus, one must be more mindful of the calcium to phosphorus ratio in the total diet. In most cases, a mineral supplement is essential to make sure that proper balance is maintained in order to prevent urinary stones.

Orchardgrass

Orchardgrass is a popular cool-season perennial bunchgrass that is grown mainly in the Midwest, Northeast and Northwest. It is tolerant to shade, fairly drought resistant and has moderate winter hardiness; however will not tolerate wet-natured soils. Orchardgrass is well adapted to inter-seeding with legumes such as alfalfa, clovers and lespedeza. Another advantage of orchardgrass is its potential for high yields when well fertilized. Average Orchardgrass hay contains about 9-10% crude protein and 55% TDN on a dry matter basis. Average orchardgrass-alfalfa mix hay will contain roughly 14-17% crude protein and 53-56% TDN on a dry matter basis. The palatability of orchardgrass is good and goats readily consume it. A disadvantage of orchardgrass is that it has relatively poor disease resistance. Also, if it is overgrazed (leaving less than 3-4 inch stubble), root depletion is common and kill off can occur.

Annual Ryegrass

There are several different types of ryegrass. Annual (Italian) ryegrass is a popular variety in the Southeast. Even though it is called annual ryegrass it is not a true annual and may come back for two or more years depending on environmental conditions. Annual ryegrass is used primarily for winter grazing. It is easy to establish and works well when overseeded onto dormant Bermudagrass pastures. Ryegrass is high-quality forage with excellent palatability that works extremely well for goats in rotational grazing systems. Due to its high protein and moisture content, it is common for goats to experience loose stools when grazing lush ryegrass. This causes no medical concern, just an esthetic nuisance. One disadvantage of ryegrass is that growth occurs quickly in the spring and it is easy for ryegrass to get over mature. But with strategic rotational grazing and/or hay harvest, ryegrass can be maintained in a high quality vegetative state. Average ryegrass hay contains about 8-9% crude protein and about 60% TDN on a dry matter basis. Obviously, one disadvantage of this forage is that it must be reseeded often, which can become expensive.

So Which One is Best?

Well, actually any one of them can be. It all depends on your individual circumstances. As I emphasized earlier in this article, the nutritional quality of the hay is more important than the actual type of hay. Excellent quality Bermudagrass hay is much better goat feed than poor quality alfalfa hay. And the only way to accurately determine nutritional quality is through a forage analysis test. These tests can be performed by the state-run forage lab or through a privately owned lab. Contact your local Cooperative Extension agent or feed store representative for more information on your options.

While the only truly accurate way to determine good hay quality is through a forage analysis, there are several visual indicators that can help identify bad hay. First of all, presence of excessive stems and seed heads in the bales is often an indicator of lower nutritional quality. As are presence of foreign objects, and unpalatable or poisonous weeds. It also goes without saying that presence of mold is an indicator of poor harvesting and/or storage practices and will result in lower quality hay.

When choosing a forage species to plant, the first consideration needs to be that the forage type you choose is compatible with your soil type, local environmental conditions and management style. Different forages are better suited for different areas. If you try to fight Mother Nature in

this, you will lose the battle eventually. I suggest that you contact your local Cooperative Extension agent or National Resource Conservation Service (NRCS) representative for more information on the forage species that are best suited to your area. Once you establish the forage species and variety that performs best in your situation, it is important to test each and every lot of hay cut (a lot is defined as hay from the same field, that has been managed and harvested (within 48 hours) under the same conditions). This will not only allow you to better match your hay to the nutritional needs of your goats (or those of your hay customers), but it will also provide invaluable feedback as to the effectiveness of your forage management and harvesting practices.

If you purchase hay, it is usually more economical to buy locally grown hay when possible. Therefore if Bermudagrass is the prevalent hay type in your area, seek to find the best quality Bermudagrass hay available locally instead of importing expensive hay from other regions. Of course, in exceptional cases, it MAY be more economical to import hay. As always, you need to keep your pencil sharp when calculating total feed costs. You can contact your local Cooperative Extension, NRCS, or Dept of Agriculture representative or your local feed store for a list of local hay producers. There are also many hay network lists on the Internet that are worth checking out.

Always ask for a forage test analysis on hay prior to purchase. Many reputable hay producers will gladly provide copies of forage analysis reports. It allows them to highlight the quality of their hay. If the hay producer you deal with has not forage tested in the past, you can offer to split the cost of testing on the hay you are interested in purchasing. Many reputable hay producers will be willing to do this for you. In my opinion, it is much better to do business with a hay producer who is willing to work with you regarding forage testing. It shows that they care about the quality of their hay and your satisfaction. If your local hay source is unwilling to test the hay before you purchase it, be sure to have this forage analysis performed soon after the purchase. Always remember that you often get what you pay for in terms of nutritional quality. Be prepared to pay a bit more for good to excellent quality hay as opposed to “take it as-is” hay. Also remember that the term “horse hay” is meaningless without a forage analysis report to back it up.

What Supplements are Needed?

In every case, no matter how good your hay is, a supplement will be necessary. The exact type of supplement will depend upon the quality of your hay and how its nutritional composition matches the specific needs of your goats. In some cases, protein and/or energy supplementation will be necessary in addition to mineral/vitamin supplementation. In others, only minerals and vitamins will be needed.

Nutritional supplements come in all shapes and sizes and range from commercially produced tubs, blocks or pellets to natural feedstuffs known to be relatively high in protein or energy such as soybean meal or corn. Choosing which type is best for your operation will vary according to individual circumstances. In many cases a variety of supplement products will best meet your goats' needs. Sweetlix[®] offers a variety of supplement products to allow the greatest amount of flexibility for goat producers. Here are the Sweetlix[®] supplements available through your local Sweetlix[®] dealer.

Sweetlix® Meat Maker™ Roughage Converter Tub

- High molasses content is ideal for does susceptible to pregnancy toxemia
- 55 to 60% TDN – energy content comparable to high quality grass hay
- 16% protein from all-natural sources to supplement low quality hay
- 100% of daily-recommended amounts of trace minerals, including copper and selenium
- Convenient 50-lb non-returnable, plastic yellow tub can be placed directly in the pasture with goats
- Superb weatherability – will not crumble, melt or blow away
- No additional salt or minerals needed or recommended

Sweetlix® Meat Maker™ 20% Pressed Block

- All natural protein supplements ideal for young, growing kids and lactating does
- 20% protein level to supplement low quality hay
- All natural protein sources – no urea added
- Delivers 100% of daily recommended amounts of trace minerals, including copper and selenium
- Convenient 33.3-lb pressed block can be placed out in the pasture with goats
- Ideal size for small goat herds
- No additional salt or minerals needed or recommended

Sweetlix® 16:8 Meat Maker™

- Highly palatable free-choice mineral for goats
- Uniquely balanced for the needs of goats
- 2 to 1 calcium to phosphorus ratio to help prevent urinary calculi
- Delivers 100% of daily recommended amounts of trace minerals, including copper and selenium
- No additional salt or minerals needed or recommended

Sweetlix® 16:8 Meat Maker™ with Rumensin®

- Medicated with Rumensin® for the prevention of coccidiosis
- Uniquely balanced for the needs of goats
- 2 to 1 calcium to phosphorus ratio to help prevent urinary calculi
- Delivers 100% of daily recommended amounts of trace minerals, including copper and selenium

Sweetlix® Caprine Magnum-Milk

- Uniquely balanced for the needs of lactating dairy goats
- Can be used free choice or mixed into a feed ration
- 1 to 1 calcium to phosphorus ratio to help balance legume diets
- Delivers 100% of daily recommended amounts of trace minerals, including copper and selenium

In summary, hay quality is much more important in determining suitability for goats rather than type of hay. Each type of hay has unique advantages and disadvantages. Each type can be

successfully fed with correct management. In each case, goats will need supplementation of some type to maintain optimum productivity when hay is fed. Hay quality and the nutritional needs of your goats (i.e. a lactating doe vs. a mature buck, etc.) will determine the type of supplement needed. Feed supplements pay for themselves in added production when used properly. For more information about the Sweetlix[®] Meat Maker[™] line of products for goats and information to help you decide how they fit into your management situation, visit your local Sweetlix[®] dealer, call **Sweetlix[®]** at 1-87SWEETLIX, 1-800-325-1486 or visit www.sweetlix.com.

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