

Feeds *for* Goats

The composition of feedstuffs commonly eaten by goats varies widely (Table 2).

For information on composition of specific feedstuffs, see FSA3043, *Composition of Some Beef Cattle Feeds*. In grazing situations, goats consume an ever changing combination of these feedstuffs with selection reflecting seasonal availabilities and relative palatabilities. The daily dry matter intakes of maturing goats usually range between three to five percent of body weight but can be higher. The actual quantity of feedstuffs eaten per day will be influenced by palatability, dry matter content, digestibility and rate of passage from the rumen. The major feeds that are fed to goats can be broken up into two different groups. Basically, these two groups are forages and concentrates.

Forages are high in fiber (18 percent crude fiber or more) and should be the primary component in the diet of adult goats. Fiber adds bulk to the goat's diet and keeps the digestive tract functioning well. Fiber has a laxative effect. The green vegetative parts of the plant, for example, blades of grass, provide most forages. Forages tend to be lower in energy than concentrates.

In contrast, concentrates are low in fiber and higher in either energy or protein than forages. They often come from the seeds of a plant. Examples of concentrates include corn, wheat, oats, barley, milo, brewers' grains and soybeans.

The types of feeds fed to goats are primarily:

Dry forages

These feeds are cut and cured, usually in the sun, and stored for later use. Hay is the primary dry forage that is cut before or at maturity. It is either cut before it has formed seeds or while the seeds are still on it. Straw is forage that is cut after it is past maturity and the seeds have already dropped or been harvested. Stored feeds usually cost 50 to 100 percent more per pound of dry matter than fresh feeds.

Fresh, green forages

Pastures and browse are the primary fresh, green forages. Pastures are either grasses or legumes. Grasses include fescue, bermuda, orchardgrass and annuals such as ryegrass, wheat and rye. Alfalfa, lespedeza and vetch are legumes. Both grasses and legumes have greater nutritional value when they are growing rapidly in a vegetative state. It is best to keep them grazed or clipped to prevent them from getting too mature. As with high energy concentrates, goats can get sick (overeating, disease, founder, digestive upsets) if they eat too much green forage too quickly. Always introduce your goat to fresh pasture and cuttings gradually.

Browse is the tender shoots, twigs or leaves of trees or shrubs that are acceptable for grazing. Goats browse like deer and giraffes. They can eat parts of a woody plant like a

blackberry bush by using their mobile upper lip to select the tender, highly digestible new leaves and leave behind the less digestible branches and thorns. Because of this ability to select different parts of the plant, goats are called **selective eaters**. Sheep and cows do not have mobile upper lips and, thus, have less ability to pick and choose the parts of a plant they want to eat. Goats are particularly adept at selecting the most palatable parts of browse plants; fortunately, greater palatability generally is associated with lower fiber, higher protein and increased digestibility. Spring growth is the most palatable and, therefore, has the highest nutritive value.

Browse plants may produce a significantly smaller quantity of forage per acre than native or improved pastures but may support the nutritional needs of one to two goats per acre for an extended period or several goats for a few days. Underbrush associated with pine and oak forest is a good source of protein and energy for meat goats. **However, some plants are very deadly to goats, but goats will eagerly eat them. Do not feed your goats yew clippings, rhododendron clippings or prunings from cherry, apricot or peach trees as these fruit tree leaves contain HCN (prussic acid) and are toxic when they wilt.** Before you cut and carry any fresh feed to goats, make sure it does not contain poisonous material.

Table 2. Estimated nutrient composition of various feeds

Plant Type	TDN %	Crude Protein %
Whole cottonseed	88	22
Corn	86	9
Soybean meal (48%)	82	44
Annuals, vegetative (wheat, ryegrass, millet)	60 - 76	12 - 24
Annuals, mature (wheat, ryegrass, millet)	50 - 60	8 - 10
Annuals, dead leaves (wheat, ryegrass, millet)	35 - 45	5 - 7
Fescue hay, six weeks growth	58 - 63	8 - 11
Fescue hay, nine weeks growth	48 - 53	7 - 9
Bermuda hay, seven weeks growth	54 - 58	9 - 11
Bermuda hay, twelve weeks growth	47 - 50	7 - 9
Alfalfa hay	50 - 63	13 - 20
Honeysuckle, leaves + buds	70+	16+
Honeysuckle, mature	68+	10+
Sumac, early vegetative	77	14
Oak, buds and young leaves	64	18
Persimmon leaves	54	12
Hackberry, mature	40	14
Kudzu, early hay	55	14
Juniper (leaves)	64	6
Acorns, fresh	47	5
Curled dock	74	13
Chicory	65	15
Mimosa (leaves)	72	21
Mulberry (leaves)	72	17

Silages

These forages have been cut and then ensiled or “pickled” rather than dried to store them. They are cut and then stored without air. In the absence of oxygen, bacteria are able to ferment the carbohydrate in the forage and preserve it. Silage can be made from grasses, such as wheat and ryegrass; legumes, such as alfalfa; and also from corn plants. Goats that have not previously eaten silage may need a transition period to learn to eat it. If improperly fermented or stored, the silage can develop molds that are deadly to goats.

Energy concentrates

As the name suggests, these feeds are high in energy. They include feeds that have less than 20 percent protein and less than 18 percent crude fiber. Energy concentrates include grains, such as corn and oats; flour mill by-products, such as wheat middlings; and certain roots crops, like turnips and beets.

Protein concentrates

These concentrates contain at least 20 percent crude protein. They are often also high in energy. They can be of plant or animal origin. Examples include soybean meal, cottonseed meal, brewers' grains and blood meal.

Urea

An inexpensive source of nitrogen, urea can be converted to protein by rumen microorganisms. However, it is not a dietary protein and can be highly toxic if used to substitute for too much protein. Always introduce goats to urea gradually. It should not make up more than 1 percent of the complete ration or 3 percent of a concentrate feed. Commercial dairy concentrates that contain 1 to 2 percent urea are safe for goats, but the nitrogen in urea may not be used as efficiently by the goat as nitrogen in protein.