

Feeding Silage to Goats

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Goats are natural browsers in the wild, being very selective of what they eat. If the seasonal nutritive values of browse and other feedstuffs decline or fluctuate, silage can be a good alternative, especially in production situations that require consistent nutrition on a daily basis.

Feeding silage to goats is generally safe but does come with some risks and challenges. There is nothing inherently wrong with feeding silage to goats. Like all ruminants, goats can digest fermented feeds quite well. However, as with all forages, quality and nutritional value, as well as price, should be the deciding factors when considering feeding silage to goats. While silages are an excellent way to preserve forages, improperly processing, ensiling and possible mishandling after ensiling can result in a dangerous product that will have an ill effect on goats. As with any forage, maturity and preparation at the time of harvest is critical to its quality and nutritional value.

Silage is the product formed when a forage crop such as grass, alfalfa or corn is fermented to preserve it in a state of high moisture while at the same time preventing it from decay. In theory, any organic material containing sugar or starch can be ensiled provided there's enough of it to justify the effort. Ensiling grass is a good alternative to baling when the weather doesn't cooperate.

The key to making good silage is to use the weight of the crop to squeeze out all of the air, arresting the natural process of oxidation and decay after the crop has been harvested. There are essentially three ways of ensiling crops: in a vertical silo (the kind visible on many dairy farms throughout the country), in horizontal bunkers (sometimes constructed of cement floors and walls), and in the long, plastic, tubular bags.

The ensiling process is one of fermentation and acidification, where naturally occurring bacteria consume the starches and sugars present in the forage, eventually consuming all of the oxygen and shutting off the decaying process. Once the proper level of acidity has been reached in the pile, the organic matter will then stabilize and cool, leaving a sweet smelling, "pickled" product that will keep for many months, sometimes years, so long as it isn't disturbed and more oxygen is introduced, which will begin the decaying process all over again.

The single most important factor to consider when ensiling any forage is the moisture content at the time of harvest. The bacteria need a certain amount moisture to synthesize the fermentation acids. There are a number of fermentation acids that develop in a pile of silage. The good ones are lactic acid and acetic acid. The bad ones are propionic acid and butyric acid. Secondary by-products such as ammonia and alcohol are also formed during fermentation.

Lactic acid should be the predominant acid present in any silage. It is odorless so there is no way to tell how much is present without a laboratory test. The presence of lactic acid from 8% to 10% indicates a good fermentation and the fermentation process progressed rapidly with a minimum of total spoilage in the pile. Acetic acid will also be present in silages and should be about 1/3 the level of lactic acid. The smell of acetic acid is similar to that of vinegar. If there's a lot of acetic acid present, it indicates the pile went through a slower fermentation with a greater loss of organic matter usually due to slow packing of the bunk or the forage was too dry when harvested. There's no real danger of high acetic acid levels in a silage pile; it only indicates that the pile took longer to stabilize and more organic matter vanished into thin air before the oxidation process came to an end. The longer a pile takes to stabilize, the greater the chance of undesirable bacteria getting into the silage such as clostridiums.

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