



## Introduction

Goats are energetic, inquisitive, and versatile in their eating habits. They are good browsers and can selectively utilize a wide variety of shrubs and woody plants. Their versatility in choosing feedstuffs, however, can cause trouble, as they may browse on toxic plants. If you allow goats to roam in a large area, look carefully for wild cherry, hemlock, azaleas, or species of the laurel family because these plants are poisonous. Allowing goats to browse on mixed range simplifies management, but it can result in bad eating habits and poor performance. Careful feeding of a balanced ration of concentrates and roughage, perhaps supplemented by free browsing, will result in better growth and milk production.

Goats are good eaters and can consume from 4 to 7 pounds of dry matter (DM) per 100 lbs body weight per day. This high level of intake allows the goat to have an abundance of nutrients readily available for the synthesis of milk for growth. Overall though, the efficiency of milk production by the dairy goat is quite similar to that of the dairy cow.

Feeding goats involves combining various feedstuffs into an acceptable and palatable ration that meets the nutrient requirements for a given function such as milk production or growth. Since goats belong to the cud-chewing or ruminant group of animals, they have the unique ability of being able to digest roughages which contain sizable amounts of fiber. The fiber or cellulose portion of the ration is broken down by microorganisms and becomes a good source of energy for the goat.

The digestive system of ruminants includes the four compartment stomach (rumen, reticulum, omasum, and abomasum) and the small intestine. The rumen is the largest of the compartments and contains many microorganisms which supply enzymes to break down fiber. It is often called the fermentation vat. Protein and B Vitamins and also Vitamin K are produced in the rumen. The reticulum (honeycomb structure) is the second stomach and is just below the entrance of the esophagus into the stomach. It appears as a part of the rumen, being separated by a partial wall. The omasum consists of hanging layers of tissue. The large surface area of these folds permits the absorption of moisture from feed as it passes into the fourth compartment, called the abomasum. The abomasum is considered the true stomach. It contains hydrochloric acid and enzymes that break down feeds into simple compounds that can be absorbed by the stomach walls and the intestines.

Feed ingested by the animal is mixed with saliva in the mouth and passed down the esophagus to the rumen where it is temporarily stored and mixed with ruminal contents, fermented and degraded by ruminal microorganisms. Later, the roughage portion of feed is regurgitated for more mastication (chewing the cud) and then returned to the rumen for additional fermentation. Fatty acids resulting from fermentation of the feed are absorbed into the blood stream from the rumen. The remaining feed particles pass into the omasum and abomasum where further digestive action takes place. As ingested feed enters the small intestine,