Feeding mixtures of tree/shrub leaves for ruminant animals

Fresh livestock feed is scarce during the dry season. At this time, farmers often harvest leaves from trees and shrubs, and feed these to ruminants. Commonly used leaves are those from leucaena or ipil-ipil (*Leucaena leucocephala*), Gliricidia or kawawa (*Gliricidia sepium*), banana leaves, Sesbania or katurai leaves (*Sesbania* sp.), acacia (*Samanea saman*), and the leaves of jackfruit, mango, hibiscus (*Hibiscus* sp.) and bamboo.

Such trees and shrubs often grow on farms. They are used for fences, as ornamental plants, or for firewood or fruit. If one species cannot supply all the forage needed, farmers gather a mixture of available leaves and feed these to their animals.

For instance, feeding Gliricidia leaves to ruminants is a popular practice all over Southeast Asia. No known toxicity has been reported. Gliricidia leaves can make up 10 - 30% of the diet (on a fresh weight basis).

The technology

Fresh leaves from suitable trees and shrubs are fed to ruminants to supplement low quality feed such as rice straw. Alternatively, the fresh leaves can be used as the main feed themselves. Such leaves provide a variety of nutrients. Leguminous trees and shrubs have a high protein content. They also contain

Fig. 1. Mixture of trees and shrubs. The leaves are fed to ruminant animals
minerals and vitamins. They have a high level of fermentable energy and dry matter digestibility.

The tannin content makes these a possible source of by-pass protein necessary for high animal productivity. Leaves from leguminous trees and shrubs also promote higher feed intake, because they are not retained in the rumen for long.

**Collecting the leaves**

Generally, such leaves are fed to livestock in a cut-and-carry system, in which fodder is gathered and brought to stalled or tethered animals. This does not involve a large amount of extra labor for farmers, since they can gather leaves while they are doing their farm chores.

Gliricidia leaves are fed mixed with fresh grasses, crop residues, and leaves of other trees. To accustom the animals to Gliricidia leaves, it is best to sprinkle them with salt or dilute with molasses. In some areas, farmers wilt the leaves for one day before feeding them to goats, to improve their acceptability.

**Precautions**

Farmers should not use these leaves as the sole source of feed. Some amount of concentrate e.g. rice bran has to be included in the rations. Furthermore, the leaves of some species may contain alkaloids and polyphenols that affect palatability and animal health. Also, most leguminous species produce inedible seed pods during the dry months. Growers must know the peculiar characteristics of each type of tree and shrub in order to be able to use its leaves properly as a livestock feed.

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![Feeding cut forage to goats, Davao, Philippines](Photo by courtesy of J. Jeff Palmer)