

## Fact sheet 8. Feed for goats



The three main types of feed used for goat nutrition in Australia are roughage, concentrates and pastures. Mineral supplements may also be added to feed.

### Roughage

Roughage comes from the green vegetative parts of plants, such as blades of grass. It is high in fibre, with 18% or more crude fibre, which adds bulk to the goat's diet, has a laxative effect and keeps its digestive tract working well.

A high-fibre diet can increase the butterfat content of a doe's milk, which results in creamy milk and conversely, a low-fibre diet can reduce the butterfat content. Most roughage is forages (vegetative matter) and tends to be low in energy.

### Concentrates

Concentrates are low in fibre and high in protein, so they are higher in energy. They are often the seeds of a plant, such as corn, oats, soybeans, pulse grains and brewers' grains- barley

The two main types of concentrates are:

- Energy concentrates – include feeds with less than 20% protein and less than 18% crude fiber, and are high in energy. Examples include grains, flour-mill byproducts and some root crops
- Protein concentrates – consist of at least 20% crude protein, are of plant or animal matter, and are often also high in energy.

Examples include dried whey, cottonseed meal, soybean meal and pulses, pea, board bean.

### Pastures

The three main types of forages are green pastures and browse, dry pastures and silages.

**Green feed and browse** are pastures or shrubs that your goat grazes on. Goats can also browse like deer and giraffes. They are called selective eaters because they can take a woody plant like a blackberry bush and use their mobile upper lip to remove the tender, highly digestible new leaves and leave the less digestible branches and thorns.

If goats eat too much green forage suddenly, they can get sick. For this reason, always gradually introduce your goat to fresh pasture and cuttings.

Do not feed goats clippings or pruning's from rhododendron, cherry, apricot or peach trees as the leaves are toxic when they wilt. Although these plants are deadly to goats, they will still eat them if they have access to them, so always check any fresh feed is safe.

**Dry pastures** are cut and cured, usually in the sun, so they can be stored for later use. Hay is forage that is either cut before it has formed seeds, or while the seeds are still on it. Straw is forage that is cut after maturity when the seeds have already dropped or been harvested.

**Silages** are cut and then 'pickled' rather than dried for storage. Because they are stored without oxygen, certain bacteria can ferment the forage and preserve it. However, if silage is improperly fermented or stored, it can develop moulds that are deadly to goats. Silage plants can include grasses and legumes, and corn plants. Goats that have not been introduced to silage can take time to develop a taste for it.

## Mineral supplements

**Mineral supplements** can vary depending on what mineral is being added to the goat's diet. Minerals should be added carefully to feed as excess amounts can be toxic (poisonous) to your goat if the balance isn't maintain to your goats needs

Some minerals, including selenium, copper, magnesium and cobalt should presented with them in the form of loose lick, lick block or liquid form

An animal nutritionist is best consulted to form a balance of mineral your goat needs.

## Suggested activities for students

The activities below are suitable for years 7-9. It will be easier for the students if the feeds you are asking them to identify are obviously different.

For example, you could get them to observe the differences between straw and hay, or oaten hay, vetch hay compared to alfalfa/lucerne hay

Explain that corn or popcorn has more energy than corn stalks, but that corn stalks have more fiber.

Let the students examine and scrape fresh pastures with a serrated plastic knife to identify the fibre (stringy parts) in it.

Ask everyone in your goat group to bring different samples of goat feeds to a meeting. Put the feed samples in numbered containers and keep a list of what is in each container. Then test the group members to see if they can identify the feeds and which feed groups they belong to. You can make this into a competition by adding a time limit and dividing your group into teams.

Make a feed board to use as part of a public display or presentation. Cut out a 40cm x 50cm piece of plywood or paneling. Paint both sides of the board and then add your name, address and school goat club name.

Select six or more feed samples for your board and put each of them in thick plastic bags that you can attach to the board.

You can use different headings on your board, such as:

- 'The feeds I use for my herd'
- 'Energy concentrates for goats'
- 'An example feed ration for a mohair and meat wether'.

For each bag of feed, type or print up an index card that lists what feed it is, which group of feeds it belongs to and what nutrients it provides. Then attach each card to the board next to that feed.

You could also organise for the students to visit a local feed mill.