

## What cows need to give more milk

Cows require a balanced diet which has sufficient energy, proteins and vitamins.



Feeding an animal with any fodder is not enough to ensure its good health and milk production. Just like human beings, animals require a balanced diet. Their feed should have the right proportion of different nutrients.

Cattle require feed that gives them energy, proteins, minerals and vitamins to maintain their body condition, milk production, and reproduction. Young animals need sufficient nutrients for growth and weight gain. Dairy cows require more nutrients to produce milk, especially during the first 3 to 4 months after calving, when milk production is at its highest.

### Green fodder is the main diet

The most important nutrient source for cattle is roughage (green fodder). But only roughage of good quality provides all nutrients that dairy cows need. Good quality

roughage has two properties: It is green and young; this means that fodder plants must be fed or cut and preserved while it is still young (before flowering). Farmers should know that crop residues that have lost their green colour may just help an animal to survive, but they are very poor in energy, proteins and minerals and cannot sustain good milk production in a dairy cow. Low quality feeds must always be supplemented with feeds that provide missing nutrients in a concentrated way.

### Energy sources

All grasses are good sources of energy, but only if they are fed at a young stage. The most popular fodder grasses include Napier grass, Kikuyu grass, Rhodes grasses, Nandi setaria, Guatemala grass and makarikari. Stripped green maize or sorghum leaves are very rich in energy. Energy concentrates should be fed in small amounts. They can be obtained from all cereal grains, wheat germ, or molasses.

### Protein sources

A cow requires protein to help microorganisms in the rumen (stomach) to break down the roughage (fodder) into nutrients that the animal can use.

Rule 1: Young green plants have higher protein content than older ones. Young Fodder leaves and sorghum/ Corn stalks are especially rich in protein.

Rule 2: Legumes have higher protein content than grasses. Examples are green residues of all beans and peas, Berseem, lucerne or white clover. All legumes should not be fed at rates higher than 30% of the total ration to avoid health problems. Other concentrated protein sources are omena, cotton seed cake, sunflower or soybean cake.

### Mineral sources

Cattle need additional minerals. They should be available at all times. e.g. as lick blocks. Growing animals, pregnant and lactating cows especially need high amounts of minerals, e.g. calcium and phosphorous. Leguminous plants and other plants other than grasses provide calcium and mineral supply.

### Concentrates? Yes, but not too much

Dairy meal or concentrates contain nutrients in high concentrations. But they are also harmful to the animals if fed in high quantities. Fodder from grass or hay must always remain the main feed for all grazing animals. It is not advisable to feed more than 6 kg of concentrates per day to a medium sized cow of 450 kg. They should always be given in small quantities of not more than 2 kg at once, mixed with roughages. Increase of concentrates before and during lactation should not be higher than 2 kg per week so the stomach can get used to it. Experienced farmers include fodder trees and shrubs in the diet of their animals. They can even replace dairy meal to some extent. Research shows that 3 kg of fodder and other legumes such as Desmodium or sweet potato vines give the same milk yield as 1 kg of dairy meal. Farmers can therefore save money if they fed their animals on leguminous plants instead of buying expensive concentrates.