

Fodder crops can also be used in crop rotation practices to manage pests. In addition, they have a shorter growing season than other field crops, while also requiring minimal management-this reduces competition for household labour.

## Fodder utilisation

Fodder can be grazed, harvested and fed, dried and stored or harvested and mixed in farm rations.

## Harvesting, processing and storage

Fodder can be harvested and properly dried or ensiled. Drying must ensure that moisture levels go below 10% to avoid spoilage. Dried fodder needs to be stored in well aerated sheds out of direct sunlight where it will not be rained upon or eaten by other animals and pests.

## Grazing


Fodder can be grazed by animals. However, when it comes to legumes it is important that they be under intercrops to avoid ammonia poisoning. It is important to allow the fodder crops to fully establish before utilisation, as grazing too early may kill the crop. Trimming and uprooting of the crop through being grazed too early can threaten future growth and development.


## On farm rations

Harvested fodder can be used in developing on farm rations. Guidelines provided by extensionists should be followed in order to formulate balanced diets and avoid toxicity.

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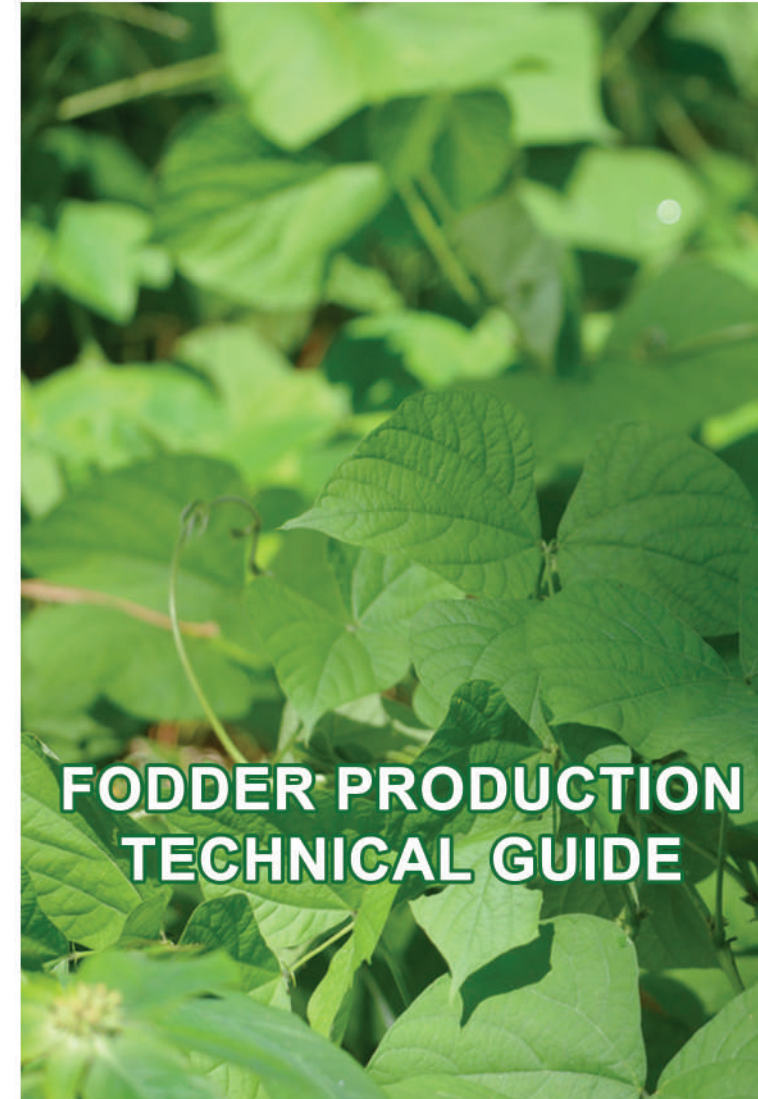
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# BEEF ENTERPRISE STRENGTHENING AND TRANSFORMATION PROJECT



## What is fodder production?

Fodder production entails growing a high yielding annual or perennial crop for purposes of feeding animals. The practice can be done to supply animal feed in both intensive and extensive livestock production systems. A variety of fodder crops are available to choose from, depending on available resources, climatic conditions, season and required usage. Common examples are; forage sorghum, Bana grass, Napier fodder, Dolichos bean, sunnhemp and Velvet bean. Fodder crops produce a large quantity of high-quality feed in a short time, allowing for repeated harvesting or grazing and also require minimum cultivation and management as most of them have been derived from wild and natural species.



Velvet bean plot



Giant Rhodes grass

The shortage and poor quality of feed in the dry season (grazing and stover) can be supplemented with forage crops grown on fallow fields. Legumes like velvet bean and sunnhemp can provide extra feed of good quality.

Forage legumes get most of their nitrogen (N) from the air (fixed by rhizobia bacteria in nodules on their roots) and therefore have a high N/protein content, especially in their leaves and seeds. They have deep roots which enable them to grow well into the dry season using water stored at depth in the soil. This extended period of growth results in more biomass (fodder and seed) production. Legume residues can help to maintain soil fertility. Legumes can also be used as green manure (whole crop ploughed in) or as a green manure cover

crop (GMCC) (left on the soil surface and the next crop planted into it, as in Conservation Agriculture). Legume forage can supplement poor quality roughages, like maize/sorghum stover and grass hay, to improve the animal diet and also intake (more stover/hay will be eaten).

Forage grasses, such as forage sorghum and elephant grass, can also be grown on fallow land in the summer rainy season and provide extra feed, though of lower quality (lower N content and more fibrous). As grasses do not fix N their productivity is dependent on the application of N (manure, fertilizer), or interplanting them with a legume. Forage crops can be fed green during the rains and/or conserved as hay or silage for feeding in the dry season. Legumes such as velvet bean, lablab and cowpea can be intercropped with maize and sorghum to increase the nutritive value of stover and silage.

## Why fodder production is important

In the savannah, nutritional supply from the rangelands is quite variable due to the varying seasons and poor veld management practices. Fires and climate change have affected both species composition and overall output. In the drier months, there is a challenge of both feed quantity and quality from the rangelands, yet the ranges are the prime source of herbivore animal nutrition. Fodder production, therefore, offers a cheaper and effective option for survival feeding, supplementation and for on farm rations. Fodder crops have the following advantages

- The cheapest source of cultivated high quality animal feed and feed ingredients.
- Fodder provides a variety of essential nutrients which maybe limiting in the rangelands.

- A good fodder production and preservation plan can ensure feed supply throughout the year.
- Excess fodder can be easily harvested and stored for usage during critical times.
- Helps maintain livestock in good body condition, and can be used for priority feeding of productive animals.
- Fodder crops fit well in the farm ecosystem and contribute important components in land reclamation and fallow land management.
- Serves as a source of income for households without livestock, as there is a business case for fodder entrepreneurs.

## Qualities of a good fodder crop

1. Be easy and reliable to establish and manage
2. Exhibit a good competitive ability against weeds
3. Remain strong, robust and productive under repeated harvesting or grazing and browsing.
4. Be well adapted to the climatic and soil characteristics of the area
5. Require little or no fertilizer
6. Be resistant to local pests and diseases
7. Produce high forage yields, have good nutritive value, of reasonable palatability and acceptability to animal

## Fodder production as part of the farming system

Fodder crops, like other crops, can be introduced and maintained in all farming systems. Inclusion of fodder crops in farming systems can help to reduce or even eliminate food competition between humans and livestock. Land left fallow can be used to grow fodder crops, and legumes can improve soil fertility and reduce erosion.