



Department of Animal Husbandry and Dairying
Ministry of Fisheries, Animal Husbandry and Dairying
Government of India

FODDER



About Fodder:

- Fodder crops are cultivated primarily for animal feed.
- Fodder includes hay, straw, silage, compressed and pelleted feeds, oils and mixed rations, and sprouted grains and legumes



Importance of Fodder

- Fodder crops like Combo Napier, Guinea, etc. are very cheaper source of nutrients and provide all the critical elements like highly digestible protein, carbohydrates, fats and minerals.
- Fodder from common cereal crops like Maize, Sorghum and Oats are rich in energy and the leguminous crops like Lucerne, Berseem & Cowpea are rich in proteins.



Types of Fodder

- Dry Fodder • Green Fodder • Concentrate

Dry Fodder:

- Dry fodders are basically crop residues or left over portion of crops after the crop is harvested.
- Grasses from legumes that are harvested are dried and stored at 85 to 90 percent dry matter.
- Moisture content of the green crop should be reduced to 10-15% to inhibit the action of plant and microbial enzymes, so that it can be stored without fermentation.



Type of Dry Fodder	How it is Stored	Common Uses	Storage Tips
Wheat Straw	Baled and stored under cover to prevent moisture.	Used as roughage in cattle feed, also for bedding.	Keep away from moisture to prevent mold.
Paddy Straw	Stored in stacks or bales, covered to avoid spoilage.	Fed to cattle, often mixed with green fodder.	Stack bales on pallets to avoid ground moisture.
Sorghum Stover	Stored in dry, ventilated spaces to prevent mold.	Used for feeding cattle and small ruminants.	Ensure good ventilation in storage areas.
Maize Stover	Baled and stored in barns or under tarps.	Given to cattle, particularly during dry seasons.	Check regularly for any signs of spoilage.
Groundnut Haulms	Sun-dried and stored in dry, cool places.	Used for feeding dairy cattle and small ruminants.	Store in a well-ventilated area to maintain quality.

Green Fodder:

- Any feed that is made from green crop like legume crops, grass crops, cereal crops or tree-based crops is green fodder
- This crop is grown in tropics, sub-tropics and warm temperature regions.

Concentrate:

- Concentrates are a mix of grains and other ingredients, including proteins, oils, vitamins and mineral
- Concentrate feed is intended to be further diluted and mixed with main feed to produce a supplement.

Type of Concentrate Feed	Examples
Energy Concentrates	Maize Meal, Barley, Oats
Protein Concentrates	Soybean Meal, Cottonseed Cake, Groundnut Cake
Mineral Concentrates	Dicalcium Phosphate, Limestone, Mineral Premixes
Vitamin Concentrates	Vitamin Premixes, Fortified Feeds
By-Product Concentrates	Rice Bran, Wheat Bran, Molasses

State specific Fodder based on climatic Zone

There are four Agro Climatic Zone

- North Zone
- Southern Zone
- Western and Central Zone
- Eastern Zone

The major crops that are cultivated for Fodder in these states are:

Northern Zone:

- Northern Zone Having 9 States those are Jammu & Kashmir, Himachal Pradesh, Punjab, Uttarakhand, Haryana, Delhi, Rajasthan and Uttar Pradesh and UT Chandigarh

Major Crops:

- Maize + Cowpea
- Sorghum + Cowpea
- Berseem + Mustard
- Sudan grass + Cowpea
- Hybrid Napier or Setaria inter-planted with cowpea
- Teosinte + Cowpea

Western and Central Zone:

- West India comprises of the states of Goa, Gujarat, Maharashtra, and the union territories of Daman and Diu and Dadra and Nagar Haveli, Chhattisgarh, Madhya Pradesh, Uttar Pradesh, and Uttarakhand these are the states which fall under Central Zone of India

Major Crops:

- Bajra + Guar (Clusterbean)
- Annual Lucerne
- MP Chari + Cowpea
- Hybrid Napier or Guinea grass inter-planted with Cowpea
- Teosinte + Cowpea

Southern Zone:

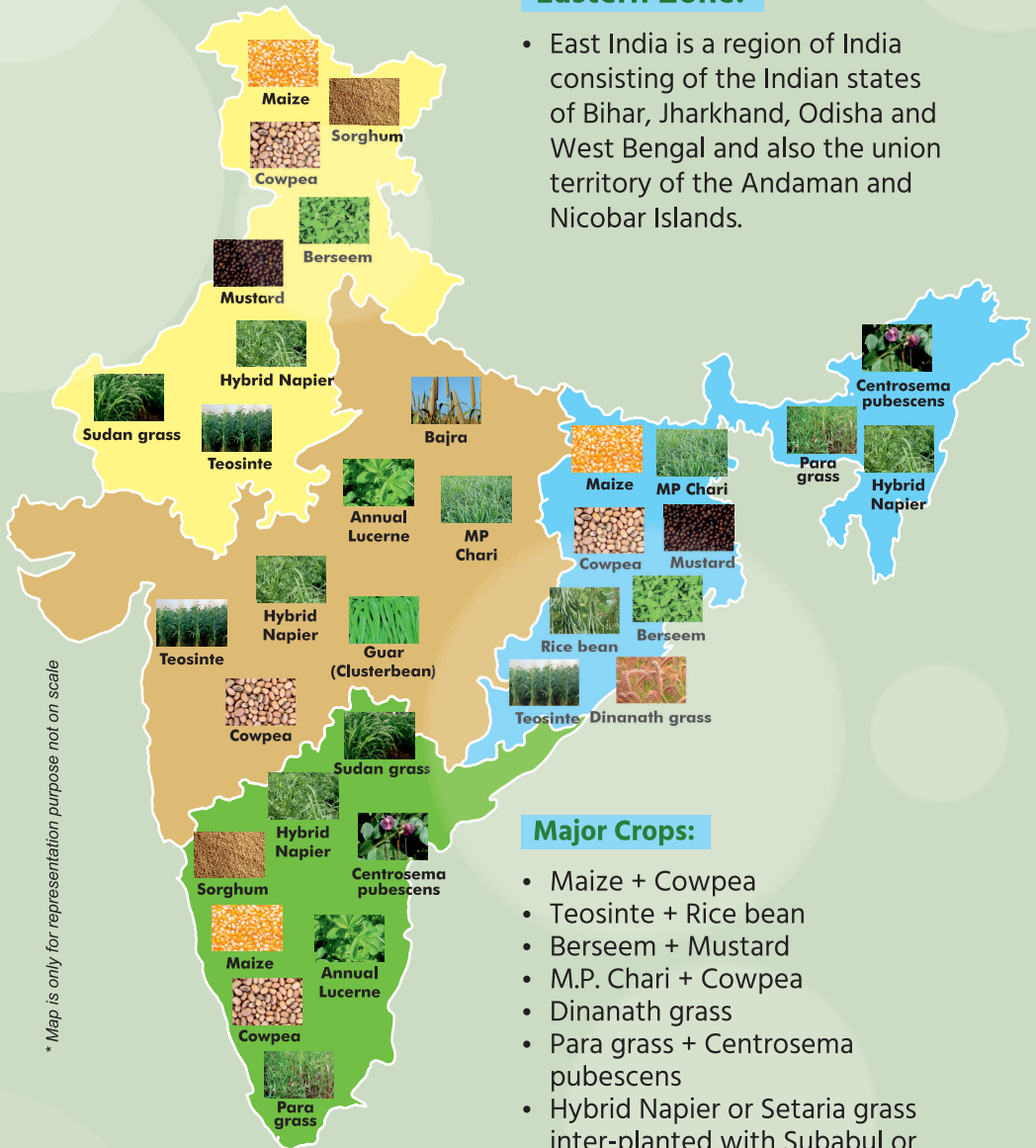
- South India, also known as Dakshina Bharata or Peninsular India, consists of the southern part of India encompassing the Indian states of Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, and Telangana, as well as the union territories of Lakshadweep and Puducherry.

Major Crops:

- Sorghum + Cowpea
- Maize + Cowpea
- Hybrid Napier or Guinea grass inter-planted with Lucerne
- Sudan grass + Cowpea
- Para grass + Centrosema pubescens

Eastern Zone:

- East India is a region of India consisting of the Indian states of Bihar, Jharkhand, Odisha and West Bengal and also the union territory of the Andaman and Nicobar Islands.



* Map is only for representation purpose not on scale

Major Crops:

- Maize + Cowpea
- Teosinte + Rice bean
- Berseem + Mustard
- M.P. Chari + Cowpea
- Dinanath grass
- Para grass + Centrosema pubescens
- Hybrid Napier or Setaria grass inter-planted with Subabul or Common Sesban

Availability of Fodder Seasonality wise:

Kharif (June to September)



Cowpea



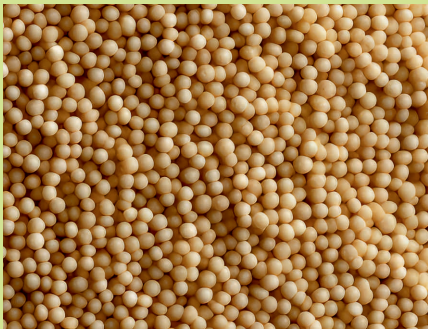
Cluster Bean



Field Bean



Bajra



Sorghum



Maize

Rabi (Oct to Jan)



Berseem



Lucerene



Barley



Oats

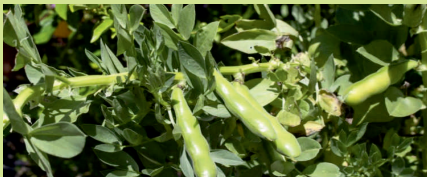
Summer (April to June)



Cowpea



Cluster Bean



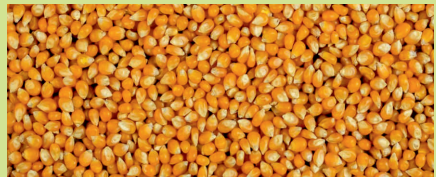
Field Bean



Bajra



Sorghum



Maize

Alternative Green Fodder:

- Azolla is a fast-growing aquatic fern rich in proteins, providing a sustainable and nutrient-dense feed supplement for livestock, particularly in regions with limited land resources.
- Silage is a fermented, high-moisture stored fodder made from green forage crops, offering a reliable and nutrient-rich feed source for livestock throughout the year, especially during off-season.



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