
Supply of Green Fodder Round The Year

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Introduction

Green fodder serves as an important cost-effective source of providing required nutrients for dairy animals. It is characterized by high digestibility and palatable nature. Under mixed feeding system, the micro-organisms present in green fodder aids in enhancing the digestibility of crop residues. Further, it also helps in maintaining good health of livestock and enhancing their breeding efficiency and besides these advantages, fodder production is mostly neglected in our country, particularly in urban dairy farms due to the excessive fragmentation of land and several other constraints.

The major feed resources for livestock in our country are grasses, community grazing on common lands, harvested fields, crop residues and agricultural by-products, cultivated fodder, edible weeds, tree leaves from cultivated and uncultivated lands and agro-industrial by-products. Residues of crop include sugarcane tops, fine straws, leguminous straws, coarse straws, etc. (Rathod *et al.*, 2019). Fodder crops are the plant species that are cultivated and harvested for feeding the animals in the form of green forage, silage, hay or other forms (Roy *et al.*, 2019).

The total livestock population in India is 535.78 million as per the 20th Livestock Census released in 2019. It has shown an increase of 4.6 percent compared to the previous Census in 2012 (Livestock Census, 2019). The total area under fodder crops in India is nearly 8.6 million had which is less than 5 percent of the area under cultivation in country. According to the Ministry of Agriculture assessment,

there is a huge gap between demand and supply of feed and fodder for the livestock in the country. The green fodder supply in twenties was estimated to be 406 MT whereas the demand would be 1134 MT. It can be inferred that the supply of green fodder would be deficit by 65 percent of the demand (Kumar *et al.*, 2012). If this severe shortage in fodder supply is not addressed soon India could possibly face a huge crisis in enhancing milk production.

Definitions

Forage

Forage may be defined as the vegetative matter, fresh or preserved, utilized as feed for animals. Forage crops include a variety of grasses, crucifers and other field crops cultivated and used in the form of fodder, pasture, hay, and silage. Fodder crops are the cultivated plant species that are used as feed for livestock.

Green fodder

Any feed that is made from green crops like legumes, cereal crops or tree based crops is called green fodder.

Types of green fodder

Based on the season of cultivation, green fodders are classified into three types.

Kharif fodder (June – September): Sorghum, field bean, cowpea, bajra, maize, etc.

Rabi fodder (October – Dec/Jan): Lucerne, oats, barley, berseem, etc.

Summer fodder (April–June): Maize, sorghum, field bean, cowpea, bajra, etc.

Status of green fodder availability and future forecast

It can be observed from Fig.1 that, over the years, the demand for green fodder is increasing approximately by 36 per cent but the supply is increasing only by 5 percent. Similarly, Fig.2 indicates a positive trend (increasing trend) of the percentage deficit of green fodder with respect to the actual demand over the years (1995-2025). The projected percentage deficiency of green fodder with respect to its actual demand for the year 2025 was estimated to be 65%. On the other hand, the livestock population is also increasing over the years (Livestock Census, 2019). Under these circumstances, it is important to formulate suitable cropping plans to ensure year-round supply of green fodder.

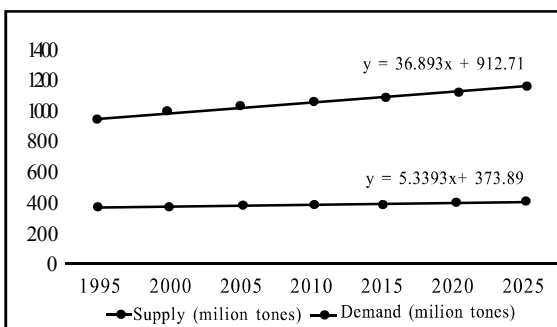


Fig 1. Supply and demand scenario of green fodder over the years

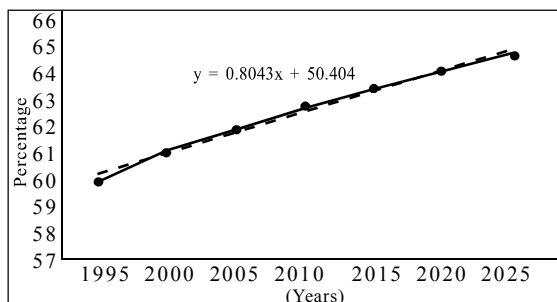


Fig 2. Percentage deficit of green fodder with respect to actual demand

Forage production systems in various regions of India

The fodder production mainly depends on cropping pattern, climate & Soil type. Various cropping patterns suitable to the climate and

soil types of different regions of India are presented below which could ensure supply of green fodder round the year (IGFRI, 2012).

Hill and Northern Region

Hill and Northern Region	Green fodder yield (t/ha/year)	Climate & Soil type
Maize + Cowpea - Lucerne + Oats - Mustard	85	Sub-temperate, Moist, Red soil
NB Hybrid + Velvet bean - Berseem + Mustard	123	
Maize+Cowpea-Toria-Oats	177	Low land, Red & yellow soil
NB Hybrid + Berseem - Cowpea	121	
NB hybrid + Berseem	212	Semi-arid, Sandy loam soil
NB hybrid + Lucerne	176	

Central and Western Region

Central and Western Region Year	Green fodder yield (t/ha/year)	Climate & Soil type
NB hybrid + Cowpea - Berseem + Mustard	255	Semi-arid, Red soil
Sorghum + Cowpea - Berseem + Mustard-Maize + Cowpea	176	
NB hybrid + Cowpea - Berseem	176	Sub-humid, Black soil
Sorghum + Cowpea - Berseem + Mustard - Sorghum + Cowpea	169	
NB hybrid + Cowpea - Lucerne	253	Semi-arid, Black soil

Eastern Region

Central and Western Region Year	Green fodder yield (t/ha/year)	Climate & Soil type
Pearl millet + Cowpea - Maize + Cowpea - Oats	103	Sub-humid, Red acidic soil
Maize + Cowpea - Sorghum + Cowpea - Berseem + Mustard	96	
Maize + Cowpea - Dinanath grass - Oats	131	Sub-humid, Alluvial soil
Maize + Rice bean - Berseem + Mustard	112	

Western Region Year	Green fodder yield (t/ha/year)	Climate & Soil type
NB hybrid (perennial)	106	Humid, Acidic soil
Maize + Cowpea - Maize + Cowpea - Maize + Cowpea	85	

Southern Region

Southern Region Year	Green fodder yield (t/ha/year)	Climate & Soil type
NB hybrid + Lucerne	225	Sub-humid, Black soil
Sorghum + Cowpea - Maize + Cowpea - Maize + Cowpea	111	
Guinea grass in Coconut plantation 135	106	H u m i d , Acidic soil
Congo signal gram in Coconut plantation 75	85	

Conclusion

Green fodder is the vital feed supplement for the livestock growth and milk production. Addressing the deficiency of green fodder by following suitable cropping patterns is the need of the hour. Additionally, strategies such as growing hydroponics green fodder as an alternate to conventional fodder cultivation, use of quality seeds of high yielding varieties, use of chaff cutter to minimize wastage, planting perennial grasses like hybrid Napier bajra/guinea grass in about 15 to 20 percent of the cultivated area, etc., could ensure supply of green fodder around the year.

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