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Western Rajasthan: Immense Possibilities for Fodder Development

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Western Rajasthan (such districts as Jaisalmer, Jodhpur, Bikaner, Pali, Nagaur, Barmer) which are arid and semi-arid regions. Due to lack and irregularity of rain, high temperature, frequent droughts, and abundance of sandy soil, there are problems in crop production and fodder production here. Animal husbandry is an integral part of agriculture and plays an important role in the rural economy. Regular and assured supply of fodder is essential for the sustainable development of livestock. Generally In Rajasthan, the productivity of alfalfa and other green pulses decreases during the summer season.

Major sources of fodder availability in Rajasthan

In western Rajasthan, cultivated fodder crops, pasture grasses, tree and shrub leaves, crop residues, etc are major sources of fodder availability.
Kharif season: :Bajra, Jowar, Guar, Moth, Cowpea
Rabi Season: Oats, Barley, Alfalfa, Berseem, Mustard, Chicory
Grasses: Laven Grass (*Lasiniussindicus*), Dhaman, Kunjan.

Obstacles in fodder production in Rajasthan

- Lack and irregularity of rain
- High evapotranspiration
- Very high temperature
- Low productivity of existing fodder
- Limited irrigation
- Focus on food/commercial crops.

Importance of Fodder Crops in Western Rajasthan

Western Rajasthan's rural economy benefits greatly from fodder crops. To make it useful for animal husbandry, fodder crops can be grown in a region with inconsistent and limited rainfall. Fodder crops can be exported to support this industry and create jobs. The cost of fodder crops is low. These crops provide livestock with nourishment, which can boost animal productivity. By fixing nitrogen, fodder crops like cluster beans and alfalfa increase soil fertility and stability. Moreover, fodder crops lessen soil erosion.

How to get green fodder throughout the year?

A shortage of fodder is seen during the summer season (March to June). But livestock owners can secure fodder crops by cutting them in a green state, drying them in the shade to make 'hay' or 'silage', and using them throughout the year. The moisture content in silage should

be up to 60-70%, and the pH value of 3.5 to 4.2 is considered best. Whereas in 'hay', the moisture should be only up to 15-20%. In this way, fodder can be made available for the whole year.

Major fodder crops in western Rajasthan

Bajra (Pearl Millet): This is a Kharif season crop which can be used as human grain and its regrowth as fodder for animals. This crop is suitable for the climate of western Rajasthan, drought tolerant, and provides a lot of fodder with less water. This crop grows well in alkaline soil.

Major Varieties: Rajko EL-74, K-533, Raj. Bajra Chari Giant Bajra, RJ-171, Raj Bajra-Chari-2

Sowing time: June-July, Seed rate: 10-12 kg/ha

Harvesting stage: First cutting at flowering (60-65 days)

Fodder yield (per cutting): 400-450 quintals/hectare

Jowar (Sorghum)

Jowar is a major Kharif crop of western Rajasthan. It is also used as both fodder and grain.

Major Varieties: MP Chari, SSG-555, PC-9

Sowing: June-July, Seed rate: 40-50 kg/ha

First cutting at 50% flowering (60-70 days)Fodder yield per cutting: 350-400 quintals/haDo not cut before flowering because at that time a poisonous substance HCN (Dhuriin) is found in it which can kill animals.

Rijka (Alfalfa)

Rizka (Alfalfa) is a highly nutritious, nutrient-rich leguminous crop. It is a perennial fodder crop.

Seed rate: 20-25 kg/ha, Yield: 800-1000 qtl/ha

First cutting: 55-60 days

Varieties: Anand-2, RL-88, Sirsa-8, Sirsa-9

Berseem

Berseem leguminous family crop that produces high fodder.

Varieties: Tardan, Maskavi, Pusa Giant, BL-10

Seed rate: 25-30 kg/ha, yield 300-1000 quintal / hectare

First cutting after 55-60 days

Seeds should be cleaned before sowing

Use Dynasol Acetate for weed control (Chicory)

Fodderbeet

Developed by ICAR-CAZRI, Jodhpur, this fodder crop is suitable for semi-arid conditions. It can be easily grown in poor quality and low water availability. And its cost is also low.

Varieties: Jomon, Monroe, JK Kuber

BajraNapierHybrid

perennial fodder source developed by CAZRI, Jodhpur.

1 liter of water is required for 1 kg of fodder of Bajra Napier Hybrid, which is very less compared to Bajra (186 liters).

It supplies high nutrient fodder throughout the year.

Anjan Grass

Anjan is an important perennial pasture grass of dry and semi-arid regions. Sow it by seeding at the rate of 4-5 kg seed/ha. Sow Anjan grass on sand dunes and hilly areas by making pellets of seed + clay soil + indigenous manure and spraying them. To get good yield, mix 20 kg nitrogen and 20 kg phosphorus in the soil. Do not graze the grass in the first year of sowing and feed the animals by cutting the grass by hand.Fodder yield 150-250 quintals/ha green fodder. Varieties such as kajari358,bundelAnjan 1 etc

Sevan Grass

Sevan is the most important perennial pasture grass in extremely arid regions. Sow it by seed at a rate of 6-8 kg seed/ha. Sow Sevan on sand dunes by spraying pellets of seed clay and indigenous manure. For a good yield, mix 20 kg nitrogen and 20 kg phosphorus into the soil. Avoid grazing the grass in the first year of sowing; feed it to animals by hand-cutting it.

Fodder yield150-250 winches/ha green fodder. Varieties such as CAZRI M-5

Benefits of green fodder

- Due to protein, lime, phosphorus, etc. elements being available in appropriate quantity in green fodder, milk production in animals increases. Green fodder should be cut before flowering as it contains more protein.
- Green fodder can also be seen as a business.
- It provides nutritious and essential elements for animals and can be mixed with dry fodder.
- Green fodder can be preserved as hay or ‘silage’ and used throughout the year.
- Fodder is an important resource for milk dairy business .

To increase fodder production in Western Rajasthan

CAZRI, Jodhpur has been working for many years. Water availability is a major problem in this area, but CAZRI has made some efforts such as:

- Improved Varieties such as CAZRI Muland 39-5 for Sewan& CAZRI 75 for. Dhaman like varieties developed.
- Research was done on crops like hybrid Napier, fodder beet etc. These are more biomass and drought tolerant.
- In this area, crops requiring less water should be selected.
- Irrigation should be done with drip or sprinkler.

CAZRI’s initiative

CazriWorking on developing & promoting sustainable fodder production systems Agroforestry models Training & extension work in sustainable fodder productionSignificant varieties of cultivated fodder crop for Western Raj.

Conclusion

Western Rajasthan's rural economy, which mainly relies on livestock, depends on the production of fodder crops. The CAZRI institute in Jodhpur is researching new fodder varieties and working to give farmers access to state-of-the-art farming methods.Fodder production can be greatly increased by research organizations, policymakers, and farmers, which will strengthen the economy of western Rajasthan.