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Presentation on Scarcity Fodder in Rajasthan & their Mitigating Measures



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Presented To –
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OVERVIEW

1. Introduction
2. Reasons for fodder scarcity
3. Lean period sources
4. Preservation of green fodder
5. Enrichment of crop residues
6. Possible ways for increasing availability of forage

■ Introduction -

- Rajasthan is facing a shortage of animal feed and fodder for feeding the livestock population .
- This condition aggravates due to natural calamities like drought and flood.
- Shortage of roughage has an adverse effect on feed supply position as dried roughage alone account for over 50-80% of supply of dry matter & energy requirement.

Reasons for fodder scarcity

1. Adverse climate condition

- High temperature
- High wind velocity
- High evaporation rate
- High soil temperature

2. High soil losses

- Through wind erosion
- Through water erosion

3. Sandy soil as poor physical ,biological & chemical properties

4. Small land holding

5. Escape the pasture & forest land year after year

Lean period sources:- Include-

1. Agro-industrial by products
2. Sugar industry wastes
3. Inferior quality roughages
4. Top feed resources
5. Root crops
6. Grasses and weeds

1. Agro-industrial by products

a. Mango seed kernel (*Mangifera indica*) -



b. Babul (*Acacia arabica*)-



c. Tamarind seed (*Tamarindus indicus*)-



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d. Sun hemp (*Croioleria juncea*)-



e. Silk cotton seed – (*Gossypium* spp.)



f. Khejri (*Prosopis cineraria*)-



2. Sugar industry wastes-

- a. **Molasses** – Liquid urea –molasses diet can be successfully fed as a sole ration with some protein and forage supplement to growing calves during scarcity.
- b. **Bagasse-** The residue of sugarcane be fed to adult cattle and growing calves as a maintenance ration.
- c. **Sugarcane tops** : Upper most $1/3^{\text{rd}}$ to $1/4^{\text{th}}$ portion is of no use in sugar industries. Therefore it can be used as a feed material in fodder scarcity.

3. Inferior quality roughages-During scarcity of feeds, the availability of green forage is reduced and ruminants are fed on dry roughage.

a. Wheat straw

b. Paddy straw

c. Mustard straw

d. Sorghum husk

4. Top feed resources-

a. Bargad (*Ficus benghalensis*)-



b. Shisham (*Dalbergia sissoo*)-



c. Neem (*Azadirachta indica*)-



d. Subabul (*Leucanea leucocephala*)-



5. Root crops- Root crops like turnip, carrot and fodder beet are used for feeding during winter season when other succulent fodders are not available.

These are easily acceptable by the animals because of their pleasant And sweet taste.

6. Grasses and weeds- Certain grasses which are grown throughout Rajasthan can be used as normal cattle feed in green stage.

a. Sewan grass (*Lasiurus indicus*)-



b. Dhaman grass (*Cenchrus ciliaris*)-



c. **Napier grass** (*Pennisetum purpureum*) -



4. Preservation of green fodder- To satisfy the need of stock during the lean months ,an adequate amount of the surplus grass available during the rainy season must be conserved in form of hay or silage.

a. **Hay** -

- Hay refers to grasses or legume that are harvested ,dried and stored as 85-90% dry matter.
- Hay is green in colour ,leafy and pliable and free from moisture.
- When harvested at proper physiological growth and well cured to 20% or less moisture at time of storing ,it can be utilized as an excellent feed for dairy cattle particularly when fodder is scarce or pasturage is insufficient.



b. Silage -

- Silage is a fermented feed resulting from the storage of high moisture green crops under anaerobic condition.
- By silage making green fodder can be preserved in succulent condition for a considerably long period.
- It contains 60-65% of moisture.



5. Enrichment of crop residues -

Use of urea to improve nutritive value of straws- The straws & stovers are usually poor in nutritive value mainly in low crude protein.

Urea has been used extensively to improve the nitrogen content of these roughage.

➤ **Enrichment with urea alone** - 2% solution of urea in water is sprayed on straw.

➤ **Enrichment of straws / bagasse with urea-** Urea of 2 kg and 10 kg molasses mixed with together and dissolved in 100 litres of water. This method provides nitrogen and a readily source of energy to the rumen microorganism.

➤ **Urea ammonia treatment of straws-**

- Ammonia enriches the straw by enhancing the nitrogen and energy content.
- This increase the voluntary feed intake as well as the digestibility of straw.

➤ **Urea –molasses liquid feed -**

- Liquid molasses containing 2 to 3% of uniformly mixed urea fortified with minerals and vitamins is named as liquid feed.
- 2-3% of molasses was safe for ad libitum feeding to cattle with restricted forage.

6. Possible ways for increasing availability of forage to overcome the feed scarcity -

- Introduction of the high yielding varieties of grasses and legume to improve carrying capacity of grassland .
- Protection of natural range lands and water conservation practices for improving vegetation cover and production.
- Afforestation of fodder trees as agro-forestry and silvi pasture system, farm forestry etc.
- Regulate free range grazing through periodic enclosure.
- Establishment of fodder banks to combat with severe drought condition.

THANK YOU!!