

**BIHAR ANIMAL SCIENCES UNIVERSITY**

**Bihar Veterinary College, Patna**

**Department of Animal Nutrition**

**UG Lecture (UNIT-I)**

**Conservation of Livestock Feed through Hay Making**

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## **Hay Making**

- **Forages like grasses & legumes that have been cut & then dried under sunlight**
- **Used when there is shortage of forages**
- **Hay making is preferred mode of conserving for all green forages**
- **Used when there is less availability of fodder**
- **Chances of spoilage will be less than the silage**
- **Require less space for its storage**

Cont...

- **During hay making process 10-15% loss of nutrient occur**
- **Hay making is done in presence of sun light**
- **If sun light not available, then difficult for hay making process**
- **Fast drying maximizes green color and palatability**
- **Rapid drying is more suitable for hay making, it minimize the microbial growth**
- **Basic principle is to reduce moisture content in order to inhibit the action of microbial enzymes**

Cont...

- In order to store green crops in a stack, the moisture content should be reduced to **15-20%**.
- For leguminous fodder harvesting is done at the start of flowering
- Grasses should be harvested, when there is emergence of head
- At this stage there are maximum nutrients and green matters
- March and April month are best season for hay making from leguminous fodder
- For grasses after rainy season.

Cont...

- In case of **leguminous fodder lucerne & oat** is best for making of hay and may be **barseem**
- In case of **grasses like sudan grasses and sadabahar**

**There are two methods of hay making**

- **Traditional method**
- **New mechanised technique**

**It consist of following steps**

- **Mowing**
- **Tedding**
- **Raking**
- **Baling**

Cont...

- **Cut the crop , when easy to break the stem by hand**
- **Dry the crop under sunlight in the field**
- **Turn the forage before sunset or sunrise to avoid shattering of leaves**
- **Then hang with a rope**
- **Stack it by using 3 bamboos**

Cont...

- **To cut the grasses a machine is used which is called mower**
  - It is the first step in making of hay
  - Mowing is done in **the morning**
  - It can be at the end of the day when the grass is drier
  - So that it can increase the energy level of the forage by capturing some of the sugars.
- **For spreading of hay tedding is done**
  - Tedding is immediately after mowing to spread the swath
  - Require a second tedding the next day to speed up the drying process
  - More tedding can shatter leaves of alfalfa.

- **To collect the hay , Hay rake is used**
- **When the hay has tedded and is nearly dry, it is ready to rake**
- **Raking turns the hay one more time to Ready to be baled**
- **Hay is gathered loose and stacked without being baled first**
- **Spontaneous combustion may occur if hay becomes wet while in storage**



Cont...

- **A baler is a machine that coiled the cut hay in to round shape**
- **After cutting, drying and raking baling is done**
- **Should be hauled to a central location for storage**
- **It depend on geography, region and climate**
- **In this process hay is usually gathered in the form of bales**

Cont...

- **Bacterial fermentation may occur in the forages that has been laid in the field**
- **May lead to production of acetic acid and propionic acid**
- **Mouldy hay is unpalatable and harmful**
- **May lead to production of mycotoxin**
- **Provitamin and carotene may be reduced from 150-200mg/kg in the dry matter**

Cont...

- **Hay can be stored under a roof when resources permit**
- **Frequently kept inside sheds and may be stacked inside a bale**
- **Hay never exposed to any possible source of heat**
- **Because dry hay and the dust it produces are highly flammable.**



Cont...

- **Moisture contents should be less than 15%**
- **More leafy and green**
- **Should be free from dust and mold**
- **Should be easily palatable**
- **Should be less expensive**



Good quality hay



Poor quality hay

**Discussions.....**

**Questions, if any.....??**

**THANKS**