

## Fodder Conservation Technique-Hay Making

**Dr Balwinder Singh Dhillon**  
Assistant Professor (Agronomy)

College of Agriculture,  
Guru Kashi University, Talwandi sabo (Bathinda)  
*Corresponding author: balwinderdhillon.pau@gmail.com*

**ARTICLE ID: 019**

Dairy is growing with very first speed, but our farmer is not moving with the same speed. As the requirement of nutrients to high yield is very high, because of high milk yield and environmental stress to our dairy animals. The cheaper and easily available sources of nutrient to lactating animals are green fodder which is abundantly available in our farmer's field. But the major problem in our dairy farming is that the supply of green fodder is not regular for the whole year. So, we have to develop different techniques in our dairy units to ensure that the nutrient product is available around the clock.

The cost of dairy farming especially for milk production is very high, if we are rearing animals alone on feed/grains. Dairy feed costs 70-75% and the green fodder's contribution is significant. Animal husbandry is an old business, but recent training, new techniques and research work help in making this profession work better. The present number of cattle in Punjab is about 81.2 lakh, which has 62.4 lakh big animals. There is a need for substantial increase in the current yield of green fodder to provide complete and good quality feed to the animals. One animal gets 30.65 kg of fodder rate per day, which is very low. If 40 kg of green fodder is found in a large livestock daily, then there is an annual requirement of 911 million tonnes of green fodder. There is enough time when our farm has huge quantity of green fodder, but it conserve this supply as hay is one of our target. Hay making not alone conserve this abundance supply, but also ensure the regular supply of nutritious product for the whole year.

During November-December and May-June months, severe shortage of green fodder for cattle can be completed by making a precaution or by applying silage. Drying green fodder is called as hay. In March-April, when there is an additional fodder of berseem, lucern or oat, it may be used for making hay. Various sources of protein and cereals are expensive.

Legume crops such as berseem, lucern, guara and cowpea are very good for making hay. In addition to mineral and vitamins in dried legume fodder crops, protein is rich in quantity, which is why it is important to dry the fodder used in ration. There is a special way to cut and store different fodder crops. Hay is made only from leguminous crops which are very rich in protein and minerals. Hay serves as a one important part of conservation of nutrients for use at the time of lean period.

The green fodder crops which are soft, are suitable for making hay, such as berseem, cowpea, lucern and ryegrass. The amount of moisture in green fodder crops is generally 80-90%, but in order to be able to store them, the moisture should be below 15%, which does not harm bacteria and fungus. In March-April months, when berseem and lucern are ready to cutting for fodder in 20-25 days and if these are not cut timely, fodder nutrients decrease. This is the best time to prepare hay and consequently the full use of the crop's nutrients. These cause higher fodder yields and can also be increased by milk yields at the time of severe shortage of green fodder. Hay making is very easy and the product obtain after this technique is very rich in protein, minerals and vitamins. Every farmer easily adopts this technique. The only thing to keep in mind is the proper time of cutting, stage of cut and size of chaff fodder. The best hay maker is the man which can easily understand the following points in mind. These related points starting from sowing up to harvesting are given below:

#### Details about green fodder crops used for making hay

Fodder crop (legume)	Sowing time	Seed rate	Seed inoculation
Berseem	September (24-30) to October (1-7)	8-10 kg	Rhizobium
Lucern	Mid October	6-8 kg	Rhizobium
Cowpea	March to mid July	CL 367= 12 kg Cowpea 88= 20-25 kg	-
Ryegrass	September (24-30) to October (1-7)	4 kg	-

#### The nutritive value (on dry matter basis) of fodders (hay)

Fodder crop	Protein (%)	Total digestible elements (%)
-------------	-------------	-------------------------------

Berseem	18.0	60.5
Lucern	22.0	59.5
Cowpea	22.5	61.2
Ryegrass	16.0	63.5

These are the key points for the production of good quality of hay. Every dairy farmer first go through these points, then start hay making at own field and develop good quality hay for their own dairy animals.

**The following are the important points of making hay (dry fodder):**

- The fodder should be dried in the field for about 3 days.
- Chop 5-8 cm in size of green fodder crop.
- Spread chop fodder on a pucca floor and dry it in the sunlight in a set of 10-15 cm thickness.
- Stir the drying forage every 2-3 hours during the day to speed up the drying process under exposure to the sun and the air.
- By repeatedly stirring the fodder, it dries in 3-4 days.
- When thoroughly dry (usually) after 3-4 days, depending on the frequency of stirring, the intensity of the sun light and air movement of the air, gather the mixture of dried stems and leaves to store or market. When the leaves become cramped, carry the dry fodder up and store it.
- If dry fodder is easily broken, the amount of moisture is correct and it is ready to store. Dried fods can be stored in a chap or strawed room. Normally drying green fodder reduces to 15-20% weight and 10-12% quality.
- Feeding of 10 kg of dry fodder on the basis of 85% dry matter is equivalent to feeding 35-40 kg green fodder. Feeding of animals with non-leguminous fodder, feeding with leguminous dry fodder, reduces the normal distribution of food.

**Examination for good hay:**

Good hay color remains green and leaves and branches stay connected. This can be assessed by taking the material in the hands, if feels dry, then hay is ready for feed and high

nutrient are available in the hay, but in some cases moisture content in the leaves as well as branches is too high then there is need of more drying for producing good quality hay.

Thus, the green fodder crop can be utilized during the shortage of green fodder. At the time of shortage of green fodder, there is excessive use of feed/ration which increases the cost of milk. It is a unique initiative that we can take care of the green fodder by making it dry easily and by making a lot of contribution to the success of dairy business. Hope that this article gives initiative to dairy entrepreneur to conserve the leguminous crop as hay and utilize the nutritious product during the lean period of time. This can reduce the cost of milk production and increases the net profit of dairy farming. Every farmer of Punjab must start new initiative to their dairy unit, so that we produce keep and balance diet which is used as feed to the dairy animals and convert to precious product (milk) which is the need of the every living human being from early morning to late evening. Hay making also reduces the daily labour cost of harvesting and chopping which is a labour saving device in our commercial/high tech dairy units.