



Conservation of Fodder Crop as Silage: A Light of Success in Dairy Entrepreneurship

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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 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. It is clear that the shortage of green fodder has been visible in the growth of dairy. For the sake of this shortage, the area under green fodder should be increased or the cultivation of green fodder with maximum yield and the excess quantity of green fodder should be conserving as silage, which is used during the lean period of time.

Introduction

Dairy farming is one of the oldest and well established subsidiary occupations and most widely adopted by all over farming community of Punjab in India. Every farmer, if wish to start any entrepreneurship along with agriculture he has to first think upon dairy farming. The present number of cattle in Punjab is about 81.2 lakh including 62.4 lakh big animals. But the shortage of green fodder has been visible in the growth of dairy. To meet the shortage, excess of production of green fodder will be stored as silage. To make silage, non-legume crops such as maize, sorghum (jawar), bajra, napier bajra and Guinea grass are suitable for *kharif* fodder, because of these crops have low amounts of carbohydrate and the amount of protein is low. There is an extra availability of green fodder from July to September in the year. There is a severe shortage of green fodder during the months of October to November. At this time, additional green fodder from July to September can be used by making silage. Animals can be reared by mixing the fodder crops such as berseem/lucern along with non-leguminous crops like maize or sorghum.

Benefits of Making Silage

- 1) It is used as feed/fodder when there is scarcity of green fodder.
- 2) Costly grains and feed will be saved.
- 3) Fodder crops are harvested at maximum nutrients stage, which is very beneficial to dairy animals.
- 4) Every day the cost of wages on cutting/chopping of green fodder and time will be saved.

Optimum Time to Cut Fodder for Making Silage

Harvest the fodder crop to make silage when the crop is at their full nutrient stage and the amount of dry matter is high. The amount of dry matter in the fodder should be 30-35%.

For preparation of silage, the appropriate time of harvesting various crops is as follows:

Table 1: The right time to cutting for making silage

Fooder crop	Cutting stage	Sowing to cutting time (days after sowing)
Maize	Flowering to milking stage	55-65 days
Sorghum	Booting to milking stage	65-85 days
Bajra	Booting stage	50-55 days
Oat	Booting to milking stage	110-120 days
Napier bajra and Guinea grass	One metre tall	After 60 days

The moisture content in fodder should be 65-70% for silage. If the moisture content is high, then dry the fodder for one day after cutting the fodder. Crop harvested at the above given stages usually have the desired dry matter content. However, Napier bajra hybrid and Guinea grass need one or two days for drying in the field before chaffing to reduce the moisture. The quantity of moisture in the fodder can be judged by twisting the chops in the hands. If the hand does not feel dry, the fodder has enough amount of dry matter.

Appropriate Place for Silo Trench

To make silage, the silo-trench should be built in a high and sloping area near animal shed, where there is no rain or other water stagnation; otherwise it will spoil the silage as well as deteriorate the quality of silage.

Planning of the Silo Trench

Depending on the size of the silo-trench, the number of animals, amount of green fodder and period for which to be conserved and the availability of green fodder, there are many types of silo-trenchs, such as the trench-silo, tower silo, powerhouse-silo and silopit. The silo-trench depends on the amount of additional green fodder. Generally, in one cubic metre space, 5-6 quintals of chaffed green fodder can be packed. In 10 metre long, 3 metre wide and 2 metre deep silo-trench about 325 to 360 quintals chopped green fodder can be packed, which is enough to feed 10 dairy animals for four months at 20-30 kg per head per day during the lean period. The length of the silo-trench can be as per requirement according to the number of animals and their need. The depth of the silo-trench should always be 1.5-2.0 metres. The trench should be made at a high point near the animal shed. It must be made the pucca and plastered with cement from inner side.

Method of Silage Making

- 1) Chop the harvested fodder crop to the length of 5 to 8 cm and fill it in the silo-trench.
- 2) The silo-trench should be filled in the shortest time (maximum 2 days). Silage should always be made in dry days.
- 3) With the help of a tractor or a bull, press the chaffed fodder in the silo-trench and regularly press of each half metre thick layer of chaffed fodder. Keep it one meter above the surface of the ground.

- 4) Cover the fodder with 10-15 cm thick of straw/residues. Then put soil on it and finally mud-plaster. Silo-trench should be completely air-tight.
- 5) Cover the silo-trench well with polythene seats. After finishing the above, put 2-3 inch layer of thick soil. The edges of the silo-trench can also be closed with dung soil.
- 6) Keep an occasional watch and if there is any crack or hole, plug it immediately. Silage will be ready in 45 days.

Identification of Accurate Silage

- 1) The best silage color will be bright yellow. Any kind of negligence results in the change of color to brown. From the best silage comes the aroma of vinegar.
- 2) A well prepared silage has pH (acidity) of 4.5. A good quality silage retains the nutritional value of original crop and has a high lactic acid and a low butyric acid content.

Method of Opening the Silo Trench

- 1) When using silage, open the silo-trench from the width side that air seems to be the least.
- 2) Take out the daily requirement of the feed and covered the remaining silage. This way the silage stays good till used.

Use of Silage in Animal Feed

- 1) Animals do not like silage for the first few days. For this, first 5-6 days, add 5-10 kg of silage green fodder to the animals. Later silage can be fed to every animal at 20-30 kg per day mixing with other green fodders.
- 2) Do not fed up the silage during milking, otherwise the fragrance will come in milk.
- 3) Silage must be fed after or before 5-6 hours milking.

Diet management

Different types of animals should be given different amount of silage, which is as follows:

Table 2: Amount of silage for animals

Cattle	Amount of silage
Calves	10-12 kg
Milch cows	20-25 kg
Milch buffalos	25-30 kg
Pregnant dairy animal	15-20 kg
Bulls	20-25 kg

Conclusion

Making silage will help to meet out the shortage of green fodder with effective reduction in cost of milk production and increase in the income from dairy unit. It will be helpful to the dairy industry to prepare cheap and balanced ration which is available in abundant and used during the lean period of fodder. The fodder which is easily available in the farm field and does not give the good return, if sold as raw material in open markets, but if conserved as silage it becomes a very good feed to the dairy animals and ultimately improves the production and reproduction performance of dairy stock.