

Silage: A Quality Roughage Available Round The Year For Feeding Dairy Animals

What is silage?

Forage which is still green and nutritious can be conserved as succulent roughage almost in its original condition through a natural 'pickling' process known as fermentation. Anaerobic fermentation of carbohydrates present in forage results in production of lactic acid which acts as preservative. Silage is made in the absence of air in a suitable silo. Forage conserved this way is called 'ensiled forage' or 'silage'.

The silage is made when green fodder is surplus and can be kept for two to three years without deterioration in its quality. Low pH of silage make it germ free. Good taste and sour-sweet aroma of silage make it palatable to animals. Silage can be fed at any time of the year, especially in lean seasons when green fodder is not available to feed dairy animals.



Good quality silage

Silage making

Maize, Oats, Jowar, Bajra, Hybrid Napier, cultivated and natural grasses rich in soluble carbohydrates are most suitable for ensiling. Crop should be harvested between flowering and milk stage when it contains 30-35% dry matter and chopped before ensiling. The quality of silage can be improved with the use of suitable additives such as molasses, urea, common salt, formic acid etc.

Silage is prepared in an air-tight structure (silo) designed for preservation of high moisture fodder as silage. Low capacity Pit and Surface silos are suitable for small and medium farmers. Normally, one cubic meter space is required for ensiling 500 kg fodder. The capacity of a silo should be calculated based on the number of animals to be fed and the length of the feeding period.



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“ **Nutrients are essential for growth and production performance of all living beings. Feeds (concentrates) and fodders (roughages) make the nutrition of livestock. Concentrates are livestock feeds that are low in fibre content and high in proteins and other nutrients, whereas roughages are mostly fibres. Roughages consumed as feedstuffs by cattle and buffaloes include grazed roughages as pasture, preserved roughages like hay and silage and crop residues/by-products such as straw, stover and hulls. Besides green fodder, roughages in the form of straw, hay and silage comprise the bulk of nutrition of dairy cattle and buffaloes.** ”



The crop that is to be ensiled is harvested and chopped into small pieces of 2-3 cm size for better packing. Chopped fodder should be evenly distributed throughout the silo and pressed manually or by tractor, layer by layer of 30-45 cm. Filling and pressing should be completed as fast as possible. Additives are mixed during filling of fodder in the silo, if needed. After filling and pressing, the silo is covered 3-4 feet above the ground level with thick polythene sheet. Then weight is put using mud layer/sand bags/used tyres on the sheet to prevent entry of air and water. The silage would be ready for use in 6-8 weeks. Good silage is tender, has acidic taste and smell and has yellowish or brownish green colour.

months or so.

Advantages of silage feeding

- Silage is a good source for replacing green fodder as it is succulent, nutritious and easy to digest by dairy animals for producing more milk.
- Crops can be ensiled when the weather conditions donot permit their conservation ashay or dry fodder.
- Enhances green fodder productivity by improving harvesting intensity. So use of silage makes it possible to keep more animals on a given area of land under fodder crops.
- Silage provides good quality fodder in any season of the year, to sustain

l) of Govt. of India. NDDB Dairy Services facilitated Maahi and Payaas Milk Producers Companies (MPCs) in Gujarat and Rajasthan respectively in organizing 281 silage making demonstrations. These demonstrations were witnessed by 5400 farmers and as a result 357 farmers adopted silage making to feed their dairy animals. The farmers who cannot make silage are purchasing silage from local market, if available. Looking at a certain demand for silage, a few MPCs have started procuring silage and supplying it to their producer members. So far, 175 MT silage has been procured and supplied to members by MPCs.

Conclusion

Silage is the best option as a replacement of green fodder. Since green fodder is not available in lean season, silage making can help farmers in providing succulent and nutritious roughage to their dairy animals round the year. Silage making enhances the fodder productivity by increasing crop intensity. It can maintain the production level of milking animals even when green fodder is not available. Silage making is cost effective and farmers are to invest a little amount for construction of silo and buying a chaff cutter. To economize the dairy farming, farmers must adopt silage making and feeding it to their cattle and buffaloes.



Ensiling: Pressing of fodder by tractor

Silage can also be made in plastic bags of various sizes suiting to farmers' need. For this, chopped green fodder is filled in the bag and pressed as hard as possible to remove air and to create anaerobic condition inside the bag. Once the bag is full, it is sealed properly. The silage bag is stored away from direct sunlight and protected from rain. After 3-4 weeks' time, good quality silage is ready for feeding animals. To retain the quality, silage bag should be closed quickly after removing the day's requirement of silage. If silage is not needed immediately, the bag can be kept for 12

milk production.

- Crop from a larger area can be stored in less space as silage than as dry fodder.
- Silage feeding controls parasitic diseases as parasites present in different stages in green fodder are destroyed during ensiling.

Silage Making Demonstrations

Considering the importance of silage as a nutritious roughage, silage making demonstrations were carried out as a part of fodder development program, under National Dairy Plan-Phase I (NDP-



Making silage in plastic bag