Practical: Forage production

Important points to be considered in forage production:

- The supply of protein to animals from legumes is cheaper than from concentrates. The non-legume forages are rich in energy. It is, therefore, essential that fodders should be grown as mixtures, in which legumes, such as cowpea, guara and non-legumes, such as maize, sorghum and bajra are grown together.
- Follow recommended time of sowing and seed rate and treat the seed before sowing.
- Use fertilizers in balanced amount.
- To get better quality of fodder, cut the fodder crop at proper stage.
- Use specific weedicide/herbicide as per recommendation in case of mixture of forage crops grown. Avoid use of un-recommended agro-chemicals on fodder crops as this may be harmful to dairy animals.
- Plants attacked by any insect pest should be uprooted and destroyed.
- Do not grow fodder crops on soils high in selenium.
- An adequate supply of quality fodders during the lean periods of November-December and May-June can be ensured by preserving the green fodder as silage and Hay.

SILAGE MAKING

SILAGE: grass or other green fodder compacted and stored in airtight conditions, typically in a silo, without first being dried, and used as animal feed in the winter.

Oat crop can be preserved as silage. It is essential that in making silage, the material is thoroughly chopped to a preferable length i.e. between 5 to 8 cm. Important points for preparing a high quality silage are given below :

1. Prepare silo trench of 10 m x 3 m x 1.5 m near the cattle shed. About 350-400 quintals of green fodder can be packed in this trench which will supply silage for a herd of 6-7 cows or buffaloes for 4 months at 40 kg/head/day.
2. Oat crop should be harvested at their optimum stage of digestibility i.e. at milk stage.
3. Chop the harvested crop and pack it into the silo-trench. A crop with 30-35% dry matter ferments into a high quality silage. If moisture content is too high, let the crop wilt in the field for 1-2 days.
4. Press the chopped crop in the trench and let it remain one metre above ground level.
5. Cover it with a layer of 10-15 cm *wheat* straw. Cover with mud and finally mud plaster so that silo trench is completely air tight. Alternatively, a plastic sheet may be used to cover the packed forage and its edges sealed with clay and dung mixture.
6. Keep an occasional watch and if there is any crack or hole, plug it immediately. Silage will be ready within 45 days.
7. Open the silo-pit from one side only and take out 40 kg of silage per animal per day for feeding. The remaining silage, kept covered, stays good till used.
8. A well preserved material has pH of 4.5 and is low in losses of nitrogen. A good quality silage almost retains the nutritional value of original crop and has a high lactic acid and a low butyric acid content.

HAY MAKING

HAY: Hay is grass, legumes, or other herbaceous plants that have been cut and dried to be stored for use as animal fodder.

The aim of hay-making is to reduce the moisture content of green fodder to below 15 per cent so that little or no change in nutritive value occurs during storage. The fodder crops having soft stems are suitable for hay-making. In legumes such as berseem and lucerne, care should be taken to avoid shattering of leaves during drying. Non-legumes such as maize, *jowar*, *bajra* are more suitable for silage making than for hay making. Harvest the fodder crops at pre-flowering stage. Chop the fodder to a length of 5 to 8 cm and spread it in a 10-15 cm thick layer on a hard-surface to dry it in the sun. The usual threshing floor can also be used for this purpose.

When thoroughly dried (usually 2-3 days depending on the frequency of stirring), collect the dried material for storage. A practical method of determining the safe limit of moisture content for storage of dried material is to twist some of the stems. If the stem breaks easily, the hay is fit for storage.

A kilogram of dried hay containing 90 per cent dry matter is equivalent to about 6 kilograms of green fodder containing 15 per cent dry matter.