

## **PROPER FEEDING TECHNIQUES**

In general, good quality forage meets all the requirements of the animals. Feed requirements differ with stage of production. Producing animals need extra nutrition over maintenance. When the animals lose their condition, some concentrates need to be provided such as grains, cakes, etc. Sometimes additional salt and bone meal improve the condition of animals and feed intake. Vet licks or mineral blocks are available commercially in the market for mineral supplementation.

Supplement feeding required for: (a) Young animals (b) Pregnant animals (c) Meat/Milking animals

Supplement feeds: Protein, fats, vitamins, minerals

Concentrates feeding time: (a) Winter: scarcity of grains and fodder (b) Summer: inaccessible season

Concentrates: Rice bran, Wheat grain, Barley bran, Maize bran, Oil seed cakes

## **HAY (PARAL) AND SILAGE PRODUCTION**

Hay is grass, legumes or other herbaceous plants that have been cut, dried, and stored for use as animal fodder, particularly for grazing livestock. It is also fed to pets such as rabbits and pigs. Hay is fed when or where there is not enough pasture or rangeland due to weather (such as during the winter) or it is also fed during times when an animal is unable to access pasture, such as when animals are kept in a stable or barn.

- Drying of the grass at right stage of maturity for the further use.
- Reduce moisture down to 15-20%
- Protect it from rain, reduce the possibility of losing leaves of dried grass.
- Utilize instead of green forage when such green forages are not available and it is equally good as green grass.

Good quality of Hay: The quality of hay depends on the species, time of harvest and freedom from moulds and bacteria. The good hay quality should include the criteria s below:

- Should have sufficient leaves
- Mixed hay of legume and grass are better than grass only.
- Harvest forage immediately after flowering started (10% flowering), earlier quantity is less and later than this the quality is poor.
- It should be green in color (dry in shade)
- No fungus/ moldy growth
- Soft and nutritious
- Should able to store for long period.

### **Types of hay**

1. Legume hay: Made from legumes: more nutritious
2. Non-legume hay: hay made without legume
3. Mixed hay; contains both legume and grasses

Suitable species to make hay: Any grass and legume which can be easily dried quicker, like oats, *cynodon*, *berseem*, *Pennisetum*, *Heteropogan*

**SILAGE:** It is defined as the product obtained by packing fresh fodder in a suitable container and allowing it to ferment under anaerobic condition without undergoing much loss of nutrients. It can be storage for more than a year. Quality of silage depends upon time of harvesting, type of forage, storage. Good quality silage is usually greenish or yellowish brown in color and with pleasant aroma.

### **Advantage**

- Can be store without reducing the quality
- Less space required
- Control weed problem
- There are many ways of silage making

- Pit silage
- Tower silage
- Plastic bag silage
- Pit silage is more common in the world, in small farming system. Pit should be narrower in bottom than in the top for better compaction.

Types of grass: Any forage can be used for silage but it should have around 60-65% moisture content.

Forage like maize and sorghum makes good silage.

Silage can be made by mixing legume and grasses. But in general grass can easily preserve as silage than the legumes.

### **Method of silage making**

- Harvest crop at suitable time
- Reduce the moisture % of forage into 60-65%
- Chop it into pieces of 2-2.5''
- Place plastic sheet at the bottom of pit to check the contamination with soil.
- Place the chopped forages and continue compaction for removal of air
- Continue up to 1 foot above ground level
- Cover with plastic again and plaster with mud.
- Temperature ensiled place will be 30-38 C
- Take care not to allow air and water in the silage pit.

In North America, Australia, North-Western Europe, and frequently in New Zealand, silage is placed in large heaps on the ground and rolled by tractor to push out the air, then wrapped in plastic covers held by recycled tires.

Good quality silage: Soft, smelling like curd, green or dark

#### Lab test for silage quality

Characters	Good silage	Bad silage
PH	4.1	5.4
Lactic acid	8.5	1
Acetic acid	2.5	3
Butyric Acid	0	3.5
Ammonium nitrate	1.9	4

Silage can be feed after 3 months of ensiling. It should be started to feed from one part of pit and cover after every use. Sometime the animals may not like it so it should be fed slowly to adopt the animals.

Commonly used plants for hay include mixtures of grasses such as ryegrass (*Lolium* species), timothy, brome, fescue, Bermuda grass, orchard grass, and other species, depending on region. Hay may also include legumes, such as alfalfa (lucerne) and clovers (red, white and subterranean). Other pasture forbs are also sometimes a part of the mix, though other than legumes, which ideally are cut pre-bloom, forbs are not necessarily desired. Certain forbs are toxic to some animals.

Oat, barley, and wheat plant materials are occasionally cut green and made into hay for animal fodder; however they are more usually used in the form of straw, a harvest byproduct where the stems and dead leaves are baled after the grain has been harvested and threshed. Straw is used mainly for animal bedding. Although straw is also used as fodder, particularly as a source of dietary fiber, it has lower nutritional value than hay.

