
بسم الله الرحمن الرحيم

Silage

Methods of conserving or preserving green crops:

a) Hay

b) Silage

Silage

Silage: It is a fermented feed resulting from storage of high moisture crops under anaerobic conditions.

Ensilage: the process of making silage

Silo: the container in which silage formed

Purpose: to preserve the green fodder to be used in summer season.

Crops may be preserved by ensiling: grass, legumes, green cereals, potatoes and fruit residues.

Grass: the most common crop to be made into silage.

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Principles of ensilage process

When a suitable crop is placed in a silo, the following changes will take place:

- Respiration of plant continues until cessation of oxygen (within 5 hours).
- Under anaerobic condition, growth and multiplication of acid forming bacteria ⟹ attack the sugars ⟹ organic acids **(lactic acid, acetic acid and alcohol),** the acidity prevents the growth of undesirable bacteria.
- When enough acid has been formed, the fermentation is checked.
- The amount of acid formed depends on the percentage of sugar in the crop.

Silage

It is important in making:

1-Reduce respiration to the lowest possible level by exclusion of air and careful sealing .

2-Stimulate lactic acid fermentation.

Different processes of making silage

1-Making silage without addition of accessory material:

A. Warm or sweet fermentation process.

B. Cold fermentation process

2-Making silage with addition of accessory materials:

A. Regulation the acidity of mass by addition of acids

(A.I.V. method).

B. Stimulation of lactic acid formation (molasses method).

Different processes of making silage

1-Making silage without addition of accessory material:

For **mature crops** contain sufficient amount of **carbohydrates**.

A. Warm or sweet fermentation process:

- The temperature may rise to 120◦ F.
- Retention of certain amount of air during ensiling.

B. Cold fermentation process:

- The temperature is not allowed to exceed 80◦ F.
- The material pack tightly and the silo sealed with layer of soil

Different processes of making silage

2-Making silage with addition of accessory materials:

Suitable for **young** crop **low** in carbohydrates.

A. Regulation the acidity of mass by addition of acids (A.I.V. method):

- Mixture of diluted solution of hydrochloric and sulphuric acids to lower the PH value below 4.
- Moulds are liable to develop at acidity 3-4, so anti-mould is sprayed on the surface before sealing.
- Drainage.
- Addition of Ca carbonate to the ration .

Different processes of making silage

B. Stimulation of lactic acid formation (molasses method):

- Solution of sugar or molasses is used.
- Crude sugar added at the rate of 0.5-1 lb/100 lbs of fresh feed.
- When molasses are used, the quantities 1-2% are doubled.
- No drainage
- Thos method produce excellent quality silage where the losses in the feeding value are low.

➢ it is also possible, using a combination of acid and molasses methods.

The nutritive value of silage

The nutritive value of silage depend on:

1-Chemical changes occurring within the mass.

2-The nature of the crop ensiled.

3-The degree of effluent production.

Judgment of silage

Good silage should be:

- yellow green in color.
- Fruity smell.
- Not sour.

Feeding of silage

- 8 weeks should elapse between the time of filling and time of feeding.
- After silage is removed from the silo, it should be fed at once.
- Fed to the stock up to 60lbs/head/day.
- 2-3lbs of silage can replace 1lb of grass hay.

Cutting of green fodders

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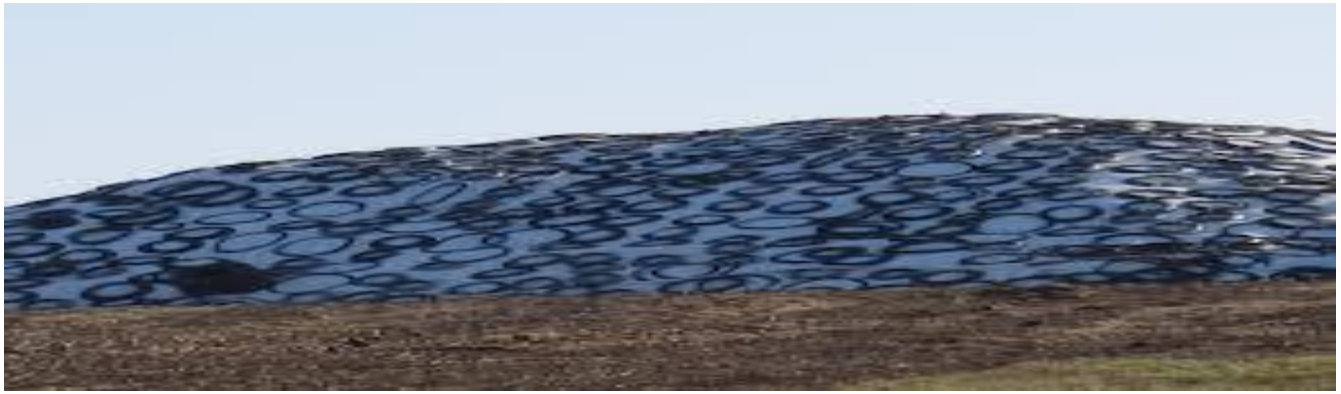

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