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# **AGRICULTURAL STRUCTURES AND ENVIRONMENTAL CONTROL BTAP3105**

## **OTHER FARM STRUCTURES**

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## Farm Silos:

Farm silos is a farm structure used to store and protect the animal fodder so that it is preserved in an ideal condition for farm animals. Animal fodder is cut and packed in the air tight silo to allow a partial fermentation to occur. The storage fodder is known as silage.

There are two types of farm silos:

- i) Tower silos and
- ii) Horizontal silos.



### **Tower silos:**

- ✚ Cylindrical Shape and made of masonry, wood or metal
- ✚ Cost of construction is comparatively much higher than that of horizontal type.
- ✚ Loading of animal fodder is difficult.
- ✚ Mechanical loader or a large capacity of blower is essential.
- ✚ This type of storage structures are not recommended under Indian conditions.

### **Horizontal silos:**

In horizontal silos pit type, bunker type and trench or stake type of storage structures used for storage of animal fodder. There are surface as well as below ground (underground) types of storage structures used on most of dairy farms as temporary and permanent storage structures for silage. The spoilage of silage and dry matter losses of these silos ranges between 20 to 30 percent.



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## Pit Silos:

- A 22.5 cm thick wall will be used satisfactory up to 15 meter depth.
- The entire surface which is coming in contact with the silage should be plastered to make it smooth, air tight and water tight.
- Simple roof is made over the silo to protect the silage from sun and rain.
- The diameter of a silo is usually limited to 6 m and its depth is kept 2 to 3 times that of diameter.
- When the silo is opened for removing the silage, nobody should enter till the gases are removed.



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## **Pit Silos:**

- ✚ Permanent pit silo is a circular deep well which is lined all around the side, and sealed from bottom, so that water may not rise in to it.
- ✚ Made in areas where the soil is deep and the water table is very low.
- ✚ Made of bricks, stones or concrete, and either cement or lime can be used as a binding material.
- ✚ A 22.5 cm thick wall will be used satisfactory up to 15 meter depth.
- ✚ The entire surface which is coming in contact with the silage should be plastered to make it smooth, air tight and water tight.
- ✚ Simple roof is made over the silo to protect the silage from sun and rain.



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### **Trench Silos:**

- ✚ Unlined trench silo can be made easily without involving any investment on building materials such as brick, cement and sand.
- ✚ Unlined silos give more spoilage and are likely to have caved side walls due to excessive rain and tend to become muddy at the bottom. So, lined trench silos are therefore become popular.
- ✚ The walls of the trench silos can be lined with brick, concrete or cement plaster with reinforcing wire mesh.
- ✚ If possible the silo should be roofed.
- ✚ Drains should be made around trench to intercept surface water.



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- ✚ To facilitate drainage it is desirable to locate the trench silo on sloping ground.
- ✚ Capacity is depends on size of herd and number of day the silage is fed in a year.
- ✚ It is always economical to construct only one trench silo, even if it is quite larger.
- ✚ Sidewalls are given generally 33 per cent slope.

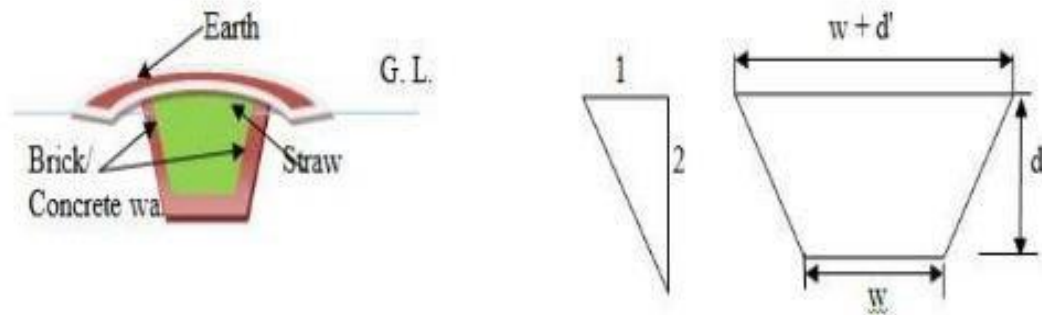


Fig. Cross – section of trench silo showing wall lining



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## Shed:

Generally, a horizontal sheds have been used to provide low- cost, large volume storage. For storing grains and other products a very large volume sheds have also been constructed by Central Warehousing Corporation.

