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A.J. Bell  
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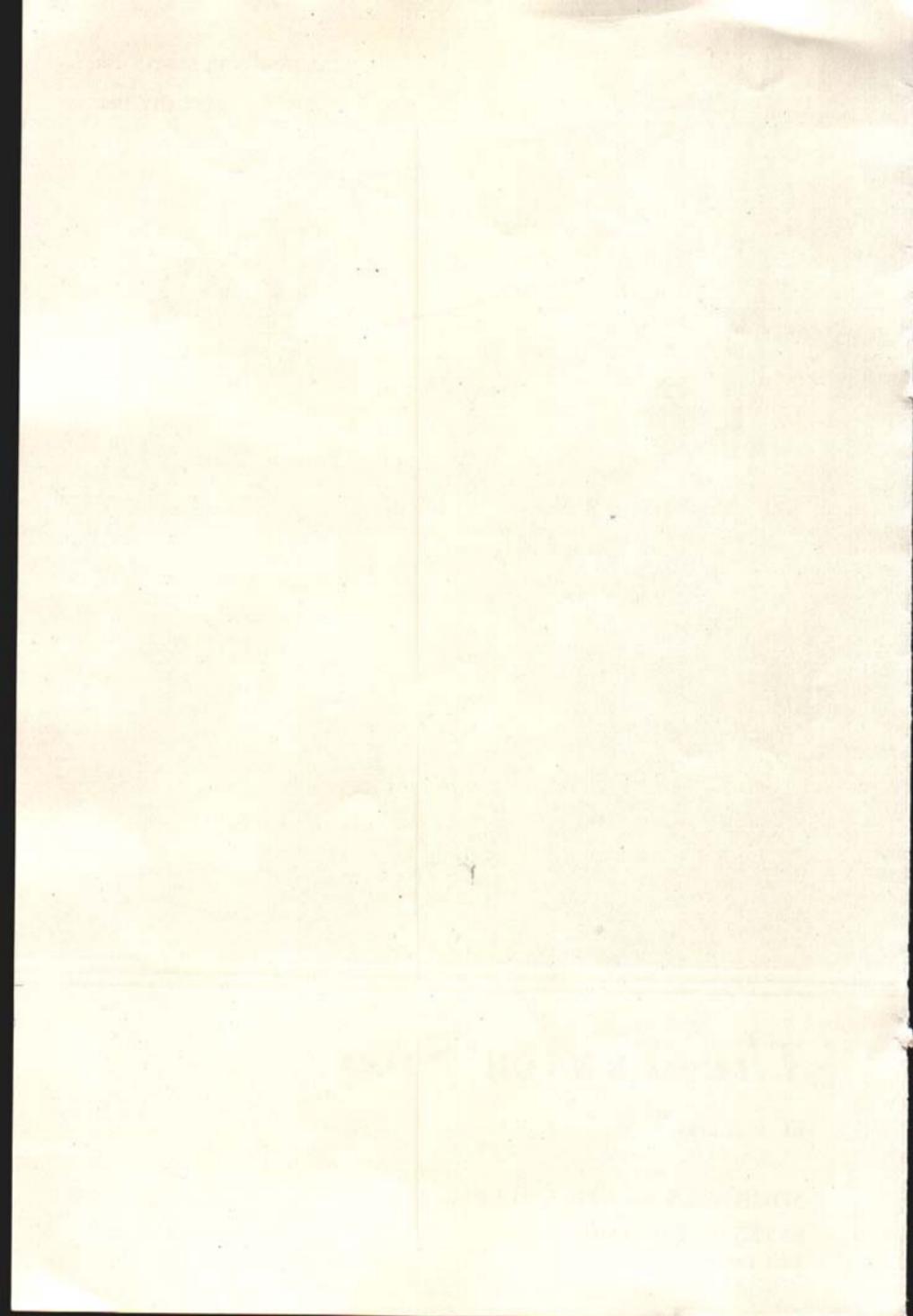
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## *The* TRENCH SILO

BY A. J. BELL

MICHIGAN STATE COLLEGE  
EXTENSION DIVISION  
EAST LANSING



# THE TRENCH SILO

A. J. BELL

The first trench silo in Michigan was built in Dickinson county in 1926. Since that time the use of this type silo has spread over the entire upper peninsula and as far south as Hillsdale county in the lower peninsula.

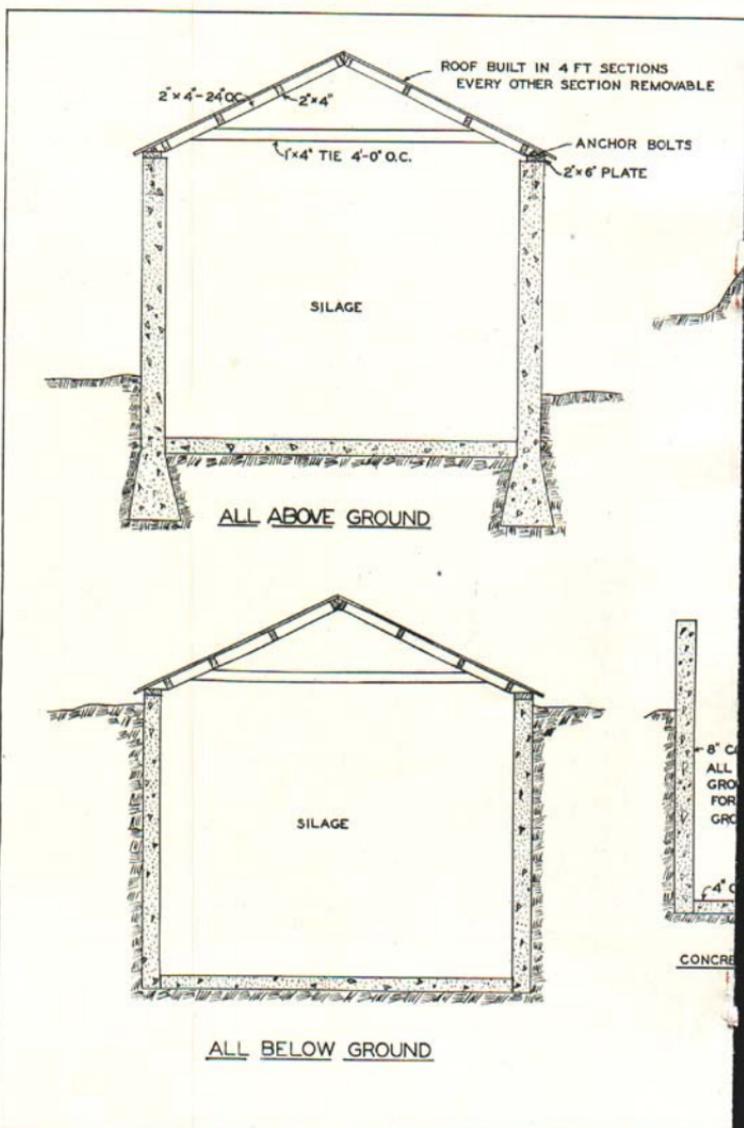
The value of silage as a winter feed for dairy cows, sheep, and feeder steers has been well known in Michigan for many years. The important question then, is that of a safe economical way of storing silage. The trench silo is one answer to that question.



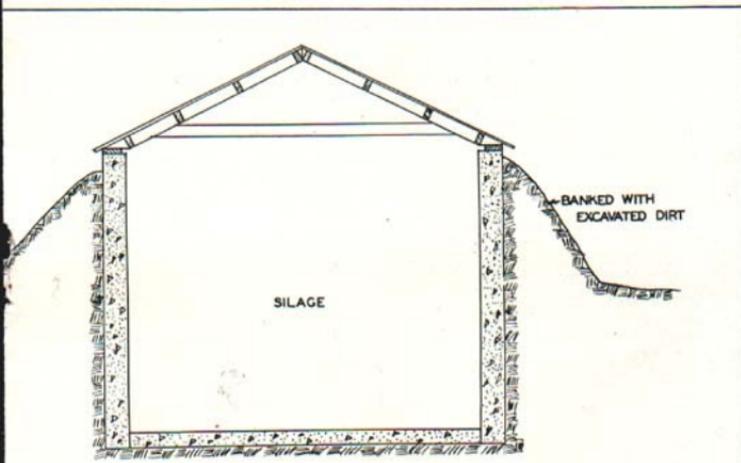
Fig. 1. Excavating for trench silo.

The silo can also be used to store alfalfa in seasons when excessive rainfall makes it impossible to properly cure it for hay. It must be kept in mind that 40 to 75 pounds of molasses thinned with water should be added to each ton of cut material.

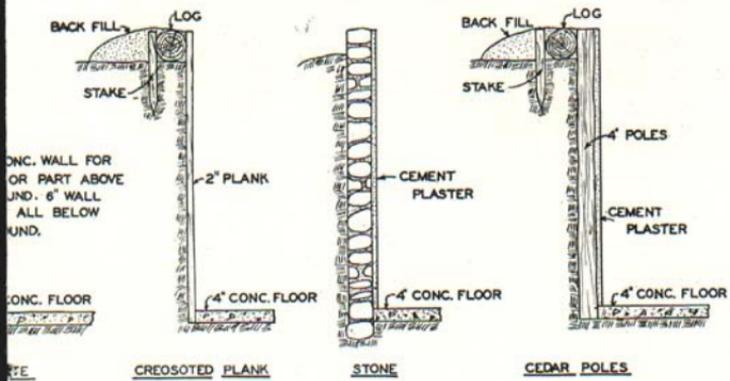
The trench silo varies from the upright silo only in its position. This silo is horizontal instead of vertical. When conditions are favorable it may be made entirely underground or it may be entirely above



# THE TRENCH SILO



PART ABOVE GROUND



SUGGESTED MATERIALS

<u>TRENCH SILO</u>	
AGRI. ENG. DEPT.	PLAUB DR. H.J.F.
M.S.C.	OK AJB TR H.J.F.
E. LANSING MICH.	SCALE 1/2" = 1'-0"
DATE 8-18-37	NO. 733-C-

ground if there is no bank to place it in. In many cases it is placed partly under and partly above ground level.

The first trench silos were made by simply digging trenches the desired size in the ground and filling them with cut material. This usually resulted in some loss of ensilage along the sides. Time has proved that it is best to line the sides and bottom of the excavation with concrete, plaster or creosoted planks. One such silo has been made with cedar posts smoothly plastered on the inside.

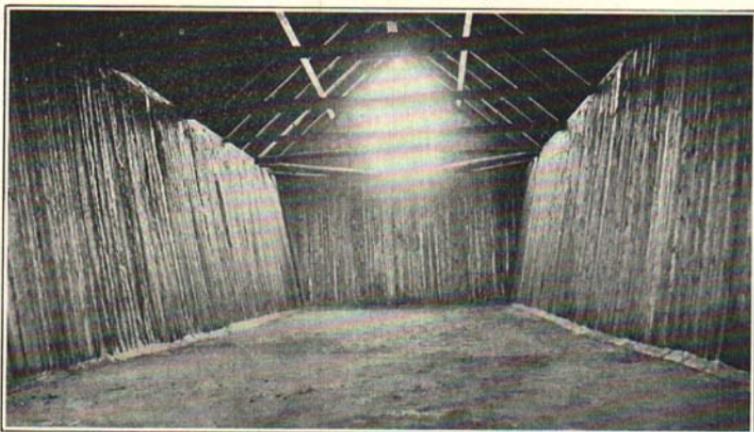


Fig. 2. Interior cedar pole silo before plastering.

The trench silo has the advantages of:

1. A low first cost;
2. Low cost for filling machinery;
3. Freedom from freezing;
4. Ease of construction.

This type silo has the disadvantage that it has a larger area to seal to prevent spoilage. Suggestions for sealing are discussed later in this bulletin.

Two things should be remembered when locating this type silo: drainage and convenience. The silo should be placed on a high, dry, well-drained site as close to the barn as possible. If a bank is available near the barn, the silo should be so located that it is readily accessible. If possible, the bottom of the silo should be level with the barn floor. A feed cart then may be run directly from the barn into the silo. Sometimes one wall of the barn can be used as one wall of the silo with a removable lean-to roof covering it.

The top of the ensilage should be covered to prevent spoilage. There are several ways of doing this. One method is to lay water-proof paper over the ensilage and cover this with 8 or 10 inches of cut straw,

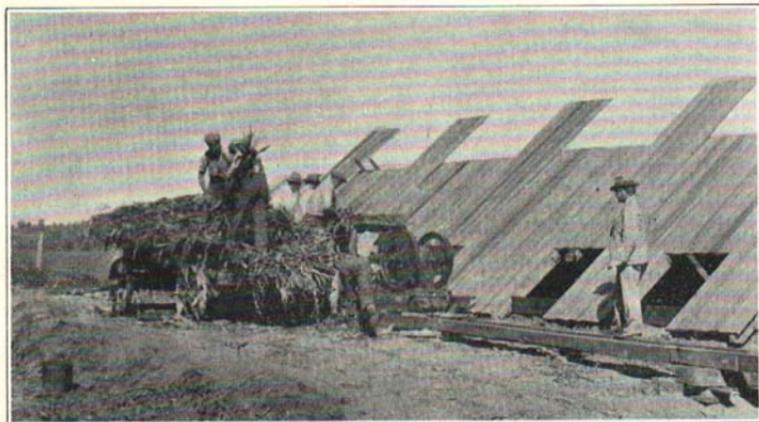


Fig. 3. Using low-cost machinery for filling.

hay or marsh grass, thoroughly wet down and packed. Some owners sow oats or barley on this. The seed sprouts and forms an air-tight cover.

One owner lays the water-proof paper and covers this with quack grass sod. The sod grows, effectively sealing the silo.

When putting in frosted or ripe corn fodder more attention should be paid to packing the mass of ensilage. This can be done by adding water and sealing the top with water-proof building paper covered with 8 inches of dirt.

The ensilage is fed from the end, similarly to slicing a loaf of bread. Only enough is uncovered at one time to last not more than a week.

The accompanying table gives the approximate size of trench silo for various size herds—allowing three tons of silage per cow per year. This does not allow for young stock.

No. of cows	Tons needed	Width in feet	Depth in feet	Length in feet
6.....	18	7	6	30
8.....	24	7	6	38
10.....	30	8	6	35
12.....	36	8	7	38
14.....	42	10	8	30
16.....	48	10	8	35
20.....	60	10	8	42

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