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The Trench Silo

How to Construct It

Can be constructed at small cash outlay.

Can be filled with greater ease and less expense than the upright silo.

Frost-proof, fire-proof, and wind-proof.

UNIVERSITY OF MINNESOTA
AGRICULTURAL EXTENSION DIVISION

How to Construct a Trench Silo

Location.—Convenience in filling and feeding, proper drainage, and kind of soil are all important considerations in choosing a site for a trench silo.

A trench silo occupies a good deal of space, and there should be plenty of room around it for doing the necessary work of construction first and then of filling. After that, convenience in feeding is desirable. To obtain convenience in feeding, one end of the trench should be near the barn.

Proper drainage is absolutely necessary, for if water gets into a silo the silage will spoil. Surface water can be drained away by proper grading in the construction operations, and rain, falling on the straw roof required, can be carried off with a little attention to details.

A clay soil is best for a trench silo. It is most easily kept in repair and excludes air better than other soils.

Size of silo.—A weight of 25 pounds to the cubic foot is the average for silage in a trench silo. That means that a trench silo must be larger for the same amount of feeding material than an upright silo. The depth should be about 8 feet; the width at the top 14 feet, and at the bottom 10 feet. The length may vary to meet the needs of one's herd. With a daily ration of 40 pounds to the cow and a feeding season of 183 days, the requirement for each cow is 7,320 pounds. With a weight of 25 pounds to the cubic foot, 7,320 pounds would occupy 293 cubic feet. This would take about three feet of length for a trench 14 feet wide at the top and 10 feet wide at the bottom. A herd of 10 cows, therefore, would have to have a

trench silo 30 feet long; a herd of 15 cows, a trench silo 45 feet long.

Construction.—Mark the lines of the top of the silo on the surface of the ground, stretching lines as an aid, and marking the boundary by a small groove made with a spade. Loosen the earth with a plow and remove with a scraper. Sometimes explosives can be used to advantage in saving time and labor, if the site is not too close to buildings. Let the walls slope inward from top to bottom at the rate of 1 foot for every 4 feet of depth. When the trench is about 5 or 6 feet deep in the middle, locate one end definitely and cut the wall at that end to the proper slope. This will make it necessary to turn the team, operating plow and scraper, in the trench. After the slope at the end not shaped has become too steep for the horses to pull up, operate the scraper from the end of a long chain. When the location is level, use the dirt taken out to build up a slope away from the top of the silo to prevent surface water from running in.

Construct a support on one side of the silo to hold a chute for use at filling time. Two poles set in the ground with a crosspiece at the top will do.

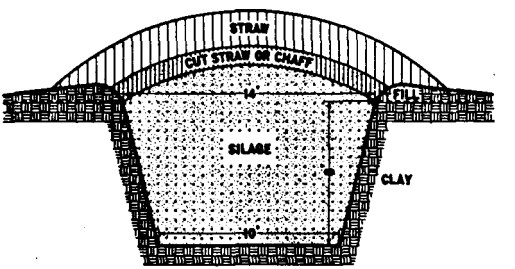
Filling.—In filling, heap the silage several feet above the ground level to provide for settling and for roof support.

Covering.—Put on a thick covering of wet straw or chaff after filling. If necessary use poles to keep the covering from blowing away.

Repairs.—Look to repairs every year before filling. Smooth the walls down carefully and remove any loose dirt that may have accumulated.

Cost.—A trench silo can be constructed by a farmer with practically no cash outlay. Two teams and 5 or 6 men can construct a silo of the kind in 2 or 3 days.

Diagram.—The following diagram shows a cross-section. The removal of the silage in feeding may be worked out to fit local conditions. The silage should be cut off each day in slices just as bread is cut from a loaf.



Cross Section of Trench Silo

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