

Leaflet Z.

Silos and Silage

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The edition of Bulletin No. 102 of this Station, on silos, is exhausted but the many publications on this subject, readily available from other sources, seem to make it unwise to add to the number another detailed discussion of the making and storing of silage. This leaflet, however, answers some of the questions oftenest asked; and gives reference to bulletins of other stations that discuss silos of different styles, with plans, detailed information as to material, helpful building suggestions and other useful hints.

In the early history of the use of silage the one idea appeared to be to get quantity of material. This resulted in growing thickly sown corn and putting it in the silo in an immature state; and the product that came out was an acid, watery, undesirable food. This use of improperly ripened corn, with added decay owing to the poor class of silos built, gave good reason for objecting to the use of silage. Since we have learned that it is actual dry matter in silage that determines its value, and are using good, mature corn, criticism of the silo has largely disappeared. Some of the largest purchasers and distributors of milk that formerly refused to purchase the milk of silage-fed cows are now encouraging the building of silos. Under these conditions, farmers are every year becoming more thoroughly convinced of the necessity of silos for economical milk production. The questions asked now relate largely to materials for silo construction and to the crop to put in it. At this Station there are two silos, one a round, vertical-stave silo, the other of horizontal wood strips outside, plastered inside with Port-

land cement. Both have been in use since 1904 and are in equally good condition. Judging from the appearance, smell and feeding, there is no difference in the quality of the silage in these two silos. In the use of cement and hollow block material we can not give advice, not having had experience with silos of these types. Reports from farmers using these materials are favorable, as far as we know. Very complete details on the hollow block silo can be obtained from Bulletin 117 of the Iowa Experiment Station, Ames, Iowa; on the cement block and cement silo from Bulletin 255 of the Michigan Experiment Station, East Lansing, Michigan; on the wood silo plastered with cement in Bulletin 102 of the Illinois Experiment Station, Urbana, Illinois; on the circular stave silo in Circular 136 of the United States Department of Agriculture, Washington, D. C. This Department also publishes other literature on the use of silage.

In determining the size of the silo to build the number of cows to be fed must be considered. At least two inches should be used from the surface each day in order to insure the silage keeping in good condition. The following table gives a general rule for diameter of silo in feet, for varying numbers of cows, to insure the removal of approximately the correct amount from the surface.

DIAMETER OF SILO IN FEET	NUMBER OF COWS TO BE FED
10	12
12	17
14	23
16	30
18	38

From 30 to 40 pounds of silage should be provided per day for medium sized cows; and for large Holstein cows 50 pounds is allowed. From this the number of tons of silage required may be computed. It is becoming a quite common practice to build two smaller silos instead of one larger one and use one for summer feeding to supplement the pasture. This has proved to be good economy.

The following table gives height, diameter and capacity in tons of silos of varying dimensions.

DIAMETER IN FEET.

<i>Height</i>	10	12	14	15	16	17	18
Feet	Tons						
20	26						
22	30	43					
24	34	49					
26	38	55	74				
28		61	83				
30			93	105	119		
32			101	115	130	148	
34				125	143	161	181
36					151	174	196

Smaller diameter and greater height, within reasonable bounds, insure better keeping quality. The height should not be less than twice its diameter and to preserve the silage perfectly the silo must be rigid and air tight and the wall smooth.

Corn is the principal crop used for silage. Experience has proven that it should be grown as though for grain, using not more than ten quarts of seed to the acre, in hills or thin rows.

Select the variety which will give the greatest amount of matured corn in your locality and carry the crop to the point where the grain is well glazed before harvesting. Of the two evils the corn might better be a little frosted than to be immature. Some experiments have indicated that for some parts of New York State dent corn, though it matures and gives a greater harvested yield, does not, because of its succulence, give as much **dry matter** to the acre as the larger varieties of flint corn. While corn may be preserved in the silo whole, it requires much more labor and care in packing in the silo and at the best is not as satisfactory as when cut

On some of the lighter soils of the State, soy beans have been grown with the corn in the hill and harvested together and cut into the silo with very satisfactory results. It increases the protein in the silage, making more nearly a balanced ration and saves buying quite so much grain. The Medium Green variety of soy bean has given best results. In some sections when alfalfa is grown quite largely farmers have planned to have a crop to cut and mix with the corn, using about one-third alfalfa to two-thirds corn with good results.

