THE FARMER'S ADVOCATE.

FOUNDED 1866

All Kinds of Silos for All Kinds of Farms.

Time has demonstrated the value of a silo for preserving the corn crop, with practically no waste, in a palatable form to be used as a stock feed at any time of the year. While corn cured in the shock makes excellent feed for fall and early winter use, it is difficult to keep it through the entire winter, and impossible to hold it over for summer feeding. Considerable work is entailed in shocking the corn, drawing it to the barn and cutting it at intervals during the winter. With the silo the corn crop is stored in a short time in the fall, and is ready for feeding at any time. When silos were first introduced, many stockmen were prejudiced against them, claimthat silage would cause digestive troubles, taint milk, make poor quality beef and cause animals' teeth to decay. After years of use these predictions have failed to come true. Good silage has proven to be an economical feed, and all bovines do well on it. Dairymen especially are silo enthusiasts. More feed can be produced from an acre of corn, when it is ensiled, than from an acre of any other crop, and silage furnishes succulency to the winter ration. Many dairymen are erecting the second silo so as to have sufficient feed to supplement the pasture during the summer. Young stock and fattening animals also do well on silage, and, as a rule, the stock that a hundred-acre farm will carry through the year is greater since the silo was built. Horses, sheep and hogs have been fed silage with a degree of success, but, as a rule, it is mainly considered a feed for bovines. Corn is the principal crop ensiled, although clover, alfalfa and green oats have been stored in the silo and came out in fairly good condition. The chief difficulty is that they haven't sufficient weight in themselves to settle firmly together, which may result in poor feed. Putting these crops in the bottom and corn on top tends to remedy this. Corn and alfalfa have been put in layer about and made good feed. While the number of silos has greatly increased during While the past few years, the majority of farms in some sections are still without them. Where corn can be grown and stock is wintered, a silo filled with corn in the fall will materially reduce the cost of feeding. Prominent feeders claim that they do not know how they would get along without the silo.

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In reality, a silo is a large tank in which the fodder is "canned," and the principal requirement is that air be excluded to prevent the silage spoiling. The air confined with the green fodder when ensiled is necessary to start a ferment, which preserves it but additional air causes mould and decay. There is always a little waste on top and around the doors, if they do not fit tightly. It is not advisable to allow stock to eat this. A smooth finish on the inside is also necessary in order to permit silage to settle evenly and prevent air spaces.

and prevent air spaces. It is claimed by many stockmen that the value of the corn crop is increased 25 per cent. by the silo Economy of storage room and having the feed always ready are things to be considered. Silage has proven to be a milk-producing and a fat-forming feed, and



stock fed on it are usually healthy. It is succulent fodder for winter feeding, and if used in the summer will reduce the number of acres required for pasture. Corn is generally claimed to be the cheapest feed produced, and is capable of withstanding drouth better than any cereal, but to get the greatest value from corn fodder it should be ensiled.

Size of Silo.

The proper size to build to meet the requirements is the first problem that confronts the stockman thinking of erecting a silo. This will depend a good deal on the size of the herd, the number of days silage is to be fed, and the amount to be fed daily. One should plan to feed off about two inches every day. As a rule young stock may safely be fed about 20



Laying Out the Foundation.

pounds per day, and beef and dairy cattle from twentyfive to as high as forty pounds. Sheep will not take over two or three pounds, and horses must be fed carefully. Poor silage is blamed for causing the loss of a number of horses. Feeding out two inches of silage per day would give about 500 pounds in a silo 10 feet in diameter; 750 pounds in a 12-foot silo, and 1,000 pounds in a 14-foot silo. A silo 10 feet in diameter and 25 feet high will hold sufficient feed to permit of feeding 10 cows 40 pounds of silage per day for about 180 days, and by adding seven feet to the height will feed them 240 days. Three-and-ahalf acres of a ten-ton-to-the-acre crop would fill the silo. A silo 12 by 35 feet can be filled from 7



Construction of Silo Foundation.

acres of corn, and will feed 20 cows for 180 days. By adding 5 feet to the height it will hold sufficient feed for 240 days, and will be filled with between nine and ten acres of corn. A silo 14 by 35 feet can be filled from 11 acres of corn, and will furnish feed for a herd of 30 cows for 180 days. A silo should be at least twice as high as it is in diameter, in order to give sufficient pressure. It is possible to get a silo too wide, but it is doubtful if it could be built too high, except for the difficulty in filling. A silo 10 by 30 feet will hold approximately 47

A silo 10 by 30 feet will hold approximately 47 tons; one 12 by 30 feet, 67 tons; 14 by 30, 90 tons; 10 by 35, 58 tons; 12 by 35, 84 tons; 14 by 35, 114 tons; 10 by 40, 70 tons; 12 by 40, 100 tons; 14 by 40, 138 tons. These figures will give some idea of the capacity of silos of different sizes.

Foundation for a Silo.

As in all buildings, the foundation is an important An effort should be made to have the silo, no matter what kind, rest on a firm footing, and built in a convenient place for filling and feeding. In order to secure this, it is usually necessary to excavate to the depth of two or three feet. It is essential that the foundation be built to suit the size of silo to be erected. To get the correct circle, drive a stake a cross arm, the length of the radius, to the outside of the silo. Nail to this a strip to mark the outside circumference. This can be swung around and will mark the outside line of the foundation. All the earth within this ring can be excavated, which will put the silo bottom below the level of the ground and will save on the height. If the silo bottom is to be on the ground level, another strip must be nailed to the marker to indicate the inner side of the wall, and a trench can be dug the required depth. The foundation is better of being from 18 to 20 inches thick, or even thicker on soft ground. A tile drain should be placed around the outside of the wall. Three or four-inch tile are used. Metal forms are the most convenient to use in putting in the foundation. If they cannot be secured, wooden rings can be made to serve the purpose Green lumber one-half inch thick and six inches wide can be bent to the desired shape and firmly held with stakes. Care must be taken to have the forms level on top so that the silo will set properly. For a stave silo Lolts may be imbedded in the cement to fasten some of the staves to. One foot of the thick wall should be sufficient to hold any silo, but many put the whole bottom ring or three feet in that wide.

feet across, with an 18-inch foundation one foot high, about two cubic yards of gravel and two barrels of cement will be required, or twice that amount for a wall two feet high. By using field stone the amount of gravel can be reduced. For a concrete silo the main wall starts right from the foundation. Where a wooden silo is built the concrete should extend above the ground, but a ten or twelve-inch wall would be sufficient. For every three feet of this about four cubic yards of gravel and three-and-one-half barrels of cement will be required. The amount of material will depend on the thickness of the wall. No matter what kind of a silo is built, it should rest on a solid base.

Kind to Build.

There are many different makes of silos on the market, and each kind has its good points. Durability, economy of building and how silage keeps, are points to consider when deciding on the kind of silo to build. Some prefer one kind and some another. A tank that will keep silage can be made quite cheaply if a man has the logs and gets them cut at a near-by mill and puts it up himself, but such silos frequently are short-lived.

Square, wooden silos, built of inch tongued and grooved pine nailed to studding have been built and served the purpose for a time, but there is always considerable waste of fodder in the corners. The building spreads with pressure of silage settling, and air gets in its destructive work. Round structures are preferable to square, no matter of what material they are built.

Stave Silos.

Ordinary stave silos were in the majority through the country a few years ago. Some were built of one-inch lumber, held together by iron or wooden hoops. About 1,400 feet of lumber is required for a silo 12 by 30 feet. If two-inch plank is used, the amount is doubled. Hoops are placed every three feet, and when iron is used it is put on so it can be tightened when the wood dries out in the summer, and loosened at filling time. Many prefer the elm hoop, which is tacked right to the staves and aids in holding each to its place. As much as 400 feet of elm have been used as hoops on a silo of the dimensions mentioned. These silos must be firmly braced or there is danger of a wind storm during the summer wrecking them. While silage keeps satisfactorily in them, they are not permanent structures, although they may last for a number of years.

Double-inch stave silos are common in some localities. Two ply of inch hemlock lumber is used and bound together by hoops. About 2,800 feet of lumber is used in a 12 by 30 foot silo, and it is claimed that the silage does not freeze as much as when a single ply of lumber is used. Like the former, this structure is not permanent. However, they will last for a number of years if they are braced properly to hold them erect. The cost will depend principally on the prevailing price of lumber.



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Silos have be if properly const hauling of mater a stone wall ma stone, the wall w feet thick in orde in preference to imbedded every of the wall spread is exerted upon labor cheap, it w

A few silos ar satisfactory. Ce reinforcing mater spreading. When more or less of which has a te silage. Vitrified, in building silos for them.

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Some build a Some start with the top, while th a six-inch wall fr standing several stand indefinitel less material th eight-inch wall a parts sand and and 30 feet high and 21 barrels of 30 cubic yards o one 12 by 35 t barrels cement; 34 barrels cemen 30 barrels ceme and 34 barrels co and 40 barrels of A contractor all necessary e employed to ere all the men, or and depend on Contracts are le foot. Where tw of the silo can h foot silo it will extra day to p fine the concrete can be raised in If a contrac mixer can somet put up the silo h factory wooden Six-inch boards to two iron ba circles, divided in handling. Ha so two forms ca can be raised ar as the metal for the mixing can

Stave Silo.

One part cement to seven or eight parts of sand and gravel should make a firm wall. For a silo 12

Solid-wall Cement Silo.