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MINNESOTA FARM MANAGEMENT SERVICE NOTES

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What is Fair Valuation for Silage?

The question suggested in the above title is one which constantly confronts those who wish to compute livestock costs. Since so little silage is actually bought and sold there is no established market price. Some methods of estimating a fair valuation for silage are: (1) The value of its nutrient content based on chemical analysis with the price of some feed such as corn or bran for which there is an established market price as a basis for the value of these nutrients. (2) Its value on the basis of hay prices, assuming three tons of silage roughly equivalent to one ton of hay. (3) A third method used by the cost accountants of the Bureau of Agricultural Economics and of many experiment stations is an opportunity cost method based on the market value of the corn plus the cost of putting it into the silo.

An illustration of this latter method is presented in Table I below. The data are based on detailed cost accounts covering over 2500 acres of silage. Costs are shown on both a per acre and a per ton basis. Current prices are used as a basis for cost rates. The charge for the silo includes interest, depreciation, taxes, insurance, and upkeep. The average total annual charge per silo was approximately \$45.00 and the average tons of silage was 90 tons altho their average capacity exceeded 100 tons. The cost per ton would have been less had the silos been used to their full capacity. Corn has been valued at 64 cents per bushel, the 5-year average December first farm price of corn in Minnesota, less a charge of 8¢ for husking which would have to be incurred if the full market price was to be received for the corn.

Table I. Cost of Silage per Acre and per Ton

	<u>Per Acre</u>	<u>Per Ton (7 tons per acre)</u>
Labor: Cutting, 1 $\frac{3}{4}$ man hours at 25¢	# .44	
5 $\frac{1}{4}$ horse " " 12¢	.63	
Filling, 12 $\frac{1}{2}$ man " " 25¢	3.13	
15 horse " " 12¢	<u>1.80</u>	
Total Labor Cost	\$6.00	\$.86
Twine: 4 $\frac{1}{2}$ pounds at 11¢	.50	.07
Machinery & Power: Corn binder	.75	
Silage Cutter	1.50	
Engine	<u>2.00</u>	
Total Power & Mach. Charge	4.25	.61
Silo Charge	<u>3.50</u>	<u>.50</u>
Total cost except corn	14.25	2.04
*		
Corn: 35 bu. at 56¢ (64¢ less 8¢ husking charge)	<u>19.60</u>	<u>2.80</u>
Total Cost	33.85	4.84

* Five-year average December first farm price of corn in Minnesota, 1919-1923.

It must be remembered that these are average costs and that they do not necessarily represent the actual cost of any individual farmer. They illustrate, however, this method of silage valuation. In Table II the values of silage computed according to this method are shown for different corn prices. In making up this table it is assumed that the yield of silage is directly proportional to the corn yield for a given field and also that the costs per ton other than corn are constant regardless of the yield of silage.

Table II. Values of Silage with Varying Prices of Corn

	Price of corn per bushel							
	\$.30	\$.40	\$.50	\$.60	\$.70	\$.80	\$.90	\$1.00
Value of silage per ton :	3.14	3.64	4.14	4.64	5.14	5.64	6.14	6.64

G.A.P.

Why Silage is a Valuable Feed

The bodies of growing animals contain a large proportion of water. Animal products, such as milk and eggs are composed largely of water. It is a matter of common knowledge that all classes of herbivorous animals thrive best on succulent grasses and forages. With the development of winter dairying and winter livestock feeding has come the necessity for succulent winter roughages. It is in this connection that silage has peculiar merit. Silage contains approximately 75 per cent of moisture and therefore more nearly approaches summer grasses in feeding qualities than most other farm feeds.

Silage is not ordinarily a cheap feed. While large amounts per acre are grown, the amount of labor required in caring for the silage crops, the machinery required for converting the crop into silage, and the necessity for providing a silo in which to store makes it a high priced feed. However, its succulent nature, the convenience in feeding, and the stimulating effect in milk production and in flesh formation give it a value that cannot be measured by chemical analysis. Few progressive farmers who make a business either of feeding beef cattle or winter dairying can afford to do without silage for winter feeding.

A.B.

Winter Wheat in Minnesota Farming Systems

From 1914 to 1923, the acreage of winter wheat in Minnesota increased from 50,000 acres to 99,000 acres while during the same ten-year period, the acreage of spring wheat decreased from 4,000,000 acres to 1,634,000. During that 10-year period, the average yield of spring wheat was 12.7 bushels and of winter wheat 16.8. In 1923, according to the State Department of Agriculture, winter wheat was found in every county in the state but the chief center of production was in several counties in Southeast Minnesota. In LeSueur County 11% of the total crop acres were in winter wheat and Blue Earth, Scott, Waseca, Carver and Winona each had from 3 to 6% of the crop acres in winter wheat. The introduction of the extra hardy Minturki winter wheat by the Minnesota Experiment Station has doubtless been a large factor in the increased attention that winter wheat is receiving in recent years. Those who have had experience with the crop generally agree that winter wheat has the following advantages over spring grain:

1. An acre of winter wheat that winters successfully is usually worth more than an acre of either winter rye, spring wheat, oats or barley.
2. Like winter rye, it lightens the seeding load in spring and lengthens the harvest season.
3. Due to earlier maturity, it is more likely to escape damage from rust and dry weather than spring wheat.

4. Winter wheat is almost certain to produce a fair to excellent crop if it winters successfully and if it winterkills there is still time to use the ground for corn or other crops.

With all the foregoing advantages to its credit, one would expect that winter wheat would rapidly displace spring wheat. However, there are two serious handicaps that will almost certainly prevent winter wheat from occupying any such large place in Minnesota agriculture as spring wheat altho it seems possible that winter wheat may become a more important crop than spring wheat in a number of Southern Minnesota counties. The leading difficulties are:

1. Winter wheat needs a well compacted seedbed and this is difficult to secure on plowed land unless the shocks can be taken off the land so that the plowing can be done in early August and the plowing followed by a thoro disking.
2. In sections in the Southern part of the state that have a rich fairly level soil, there is a strong tendency toward a cropping system where corn and small grain each occupy about an equal acreage. If one desires to follow this plan, any material acreage of winter wheat either reduces the corn acreage or makes it necessary to follow corn with corn on a part of the corn ground unless one can work out a system where winter wheat follows corn.

Some of the largest yields of winter wheat have been secured where the wheat has been seeded on clean silage ground without any soil preparation immediately after the removal of the corn bundles. This method has the advantage that the corn stubble catches the snow and so gives the winter wheat good snow protection. There is also the possibility that where corn is cut and shocked that the winter wheat may be seeded by drilling the wheat immediately before shocking the corn by throwing the corn bundles over onto the seeded ground after each round of the drill. It would probably cost less to carry the corn bundles over a drill width than to disk the ground in the spring. Still another method is the use of a one-horse drill between the rows of standing corn, but the corn must stand up well. Winter wheat in Southern Minnesota should not be seeded later than September 15 and preferably during the first week of September. Winter wheat should not be seeded either on sandy, peaty, or poorly drained soils.

Your county agent or the Minnesota Crop Improvement Association, University Farm, can help you to locate seed of the Minturki variety.

W.L.C.