

FARM MANAGEMENT PLANNING GUIDE



Section VI, No. 13
August 2004 (Revised)

What is the Value of a Standing Corn Crop for Silage?

Dwight Aakre
Farm Management Specialist
North Dakota State University Extension Service

Corn for silage is sometimes sold standing in the field and farmers frequently ask how to determine a fair price for the standing crop. The following provides some recommended guidelines for estimating the value of a standing corn crop.

Mature Corn – 50% Grain DM Content	Example 1	Example 2	Example 3	Example 4	Your Figure
1. Estimate of yield per acre in tons ¹	3	6	9	12	_____
2. Percent dry matter	30	30	30	30	_____
3. Value of silage per acre at \$20.52 per ton ² (calculations shown on page 2)	\$ 61.56	\$ 123.12	\$ 184.68	\$ 246.24	_____
4. Less custom cost of making silage per acre ³	\$ 16.00	\$ 18.00	\$ 20.78	\$ 24.00	_____
5. Hauling to storage ⁴	<u>\$ 9.00</u>	<u>\$ 18.00</u>	<u>\$ 27.00</u>	<u>\$ 36.00</u>	=====
6. Value per acre of silage in storage	\$ 36.56	\$ 87.12	\$ 136.90	\$ 186.24	_____
Immature Corn – 25% Grain DM Content	Example 1	Example 2	Example 3	Example 4	Your Figure
1. Estimate of yield per acre in tons ¹	3	6	9	12	_____
2. Percent dry matter	30	30	30	30	_____
3. Value of silage per acre at \$16.92 per ton ² (calculations shown on page 2)	\$ 50.76	\$ 101.52	\$ 152.28	\$ 203.04	_____
4. Less custom cost of making silage per acre ³	\$ 16.00	\$ 18.00	\$ 20.78	\$ 24.00	_____
5. Hauling to storage ⁴	<u>\$ 9.00</u>	<u>\$ 18.00</u>	<u>\$ 27.00</u>	<u>\$ 36.00</u>	=====
6. Value per acre of silage in storage	\$ 25.76	\$ 65.52	\$ 104.50	\$ 143.04	_____
Immature Corn – 0 % Grain DM Content	Example 1	Example 2	Example 3	Example 4	Your Figure
1. Estimate of yield per acre in tons ¹	3	6	9	12	_____
2. Percent dry matter	30	30	30	30	_____
3. Value of silage per acre at \$13.32 per ton ² (calculations shown on page 2)	\$ 39.96	\$ 79.92	\$ 119.88	\$ 159.84	_____
4. Less custom cost of making silage per acre ³	\$ 16.00	\$ 18.00	\$ 20.78	\$ 24.00	_____
5. Hauling to storage ⁴	<u>\$ 9.00</u>	<u>\$ 18.00</u>	<u>\$ 27.00</u>	<u>\$ 36.00</u>	=====
6. Value per acre of silage in storage	\$ 14.96	\$ 43.92	\$ 72.10	\$ 99.84	_____

¹The following formula may be used to estimate the wet yield of a standing corn crop with 30 inch rows.

- Select a representative row and measure 17.4 feet. For 36 inch rows, use 14.5 ft. of row.
- Cut at normal chopping height and weigh and multiply by 1000 to estimate total weight per acre.
- Divide answer obtained in "b" above by 2000 to convert to tons per acre.

²Corn silage is primarily an energy feed. The dry matter value of silage can be compared to the local value of shelled corn and grass hay. Good quality corn silage will typically average 50 percent corn grain by dry matter weight.

³The average custom rate charged in 2001 (latest figure available at this writing) for field chopping only was \$20.78 per acre; the range was \$5 to \$45. I have assumed the rate would vary somewhat at different yields.

⁴Hauling charges are based on a 5 ton load at \$3 per loaded mile for a 5 mile haul.

It is easy to see that the value of the standing corn crop depends upon several variables, including yield, price of substitute feed crops and harvesting and hauling costs. The figure on line 6 in the above examples indicates the maximum amount the buyer could afford to pay. The buyer should discount the computed price by the estimated spoilage. With this information, the parties would negotiate the price.

If a farmer has all-risk crop insurance on his corn crop, he should check with his insurance agent to determine how selling the standing corn crop will affect yield history and insurance payments if the situation warrants. If there is a potential insurance claim, your insurance company will likely require you to leave a number of rows unharvested at specified intervals across the field to be used for final appraisal. Also selling unharvested corn results in loss of beneficial interest prior to harvest. This means you will not be eligible for any potential loan deficiency payment.

Calculating the Value per Ton of Corn Silage

If shelled corn containing 13 percent moisture is priced locally at \$2.25 per bushel and grass hay containing 10 percent moisture is priced at \$40 per ton, their value per pound of dry matter is computed as follows:

Corn 56 lbs x .87 = 48.72 lbs. dry matter

$$\frac{\$2.25}{48.72} = 0.0462 \text{ or } 4.62 \text{ cents per pound of dry matter}$$

Hay 2000 lbs. x .90 = 1800 lbs. dry matter

$$\frac{\$40.00}{1800} = 0.0222 \text{ or } 2.22 \text{ cents per pound of dry matter}$$

If silage contains 30 percent dry matter, there is 600 pounds of dry matter per ton or the equivalent of 300 pounds of shelled corn and 300 pounds of grass hay. Mature, high yielding grain corn should contain 50% grain by dry matter weight.

300 lbs. corn equivalent	x	.0462	=	13.86	
300 lbs. hay equivalent	x	.0222	=	6.66	
1200 lbs. water	x	.0000	=	<u>0.00</u>	
2000 lbs.					\$20.52 per ton of silage containing 30 percent dry matter

The above example is typical of good quality mature corn made into silage. However, immature corn salvaged for silage contains much less grain relative to stalk and leaf material. Corn in the hard dough stage may more likely be only 25 percent grain by dry matter weight. In that case, the value would be computed as follows:

150 lbs. corn equivalent	x	.0462	=	6.93	
450 lbs. hay equivalent	x	.0222	=	9.99	
1200 lbs. water	x	.0000	=	<u>0.00</u>	
2000 lbs.					\$16.92 per ton of immature corn silage containing 30 percent dry matter

Very immature corn with no grain content would be valued based on hay equivalent value only.

0 lbs. corn equivalent	x	.0462	=	0.00	
600 lbs. hay equivalent	x	.0222	=	13.32	
1200 lbs. water	x	.0000	=	<u>0.00</u>	
2000 lbs.					\$13.32 per ton of corn silage with 0 percent grain content and containing 30 percent dry matter.



Helping You Put Knowledge To Work

NDSU Extension Service, North Dakota State University of Agriculture and Applied Science, and U.S. Department of Agriculture cooperating. Duane Hauck, Director, Fargo, North Dakota. Distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914. We offer our programs and facilities to all persons regardless of race, color, national origin, religion, sex, disability, age, Vietnam era veterans status, or sexual orientation; and are an equal opportunity employer. **This publication will be made available in alternative format upon request (701) 231-8642.**