Pricing Corn Silage$_{2011}$

August Cash Corn @ $6.50/bu.

Pricing corn silage is much more difficult than pricing grain. With grain, yields are known for certain, where as with corn silage, yields are more difficult or time consuming to measure with tonnage varying through the harvest season as plant moisture declines. These factors make it difficult for buyer and seller to determine how much crop is being marketed in this transaction.

When pricing corn silage the buyer has to consider the cost of alternative feeds and the seller wants to be assured of income at least equal to selling grain. This article shows one procedure for estimating corn silage value based on an estimate of its grain content with adjustments for the fertilizer value of the P&K in the fodder. This example assumes 150 bu/a grain yield for the corn being sold as silage.

The grain content of silage is variable because of variety differences and growing conditions. For a 150 bu/acre grain yield, silage averages 7.5 bu/ton of wet silage harvested at 35% dry matter. Table 1 shows the relationship between grain yield and grain content of silage. Note that at grain yields higher than 150 bu/acre silage tonnage increases but grain content/ton declines.

Table 1 Average Bushels of Grain Per Ton of Wet Corn Silage at 65% moisture[1].

Grain Yield bu/acre	Silage Yield ton/acre	Grain Equiv./ton of Silage
100	13.9	7.2 bu./ton
125	16.7	7.5
150	20.0	7.5
175	23.9	7.3
200	29.3	6.8

Estimating Net Grain Value of Corn

150 bu/acre x $6.50/bu	= $975.00
minus hvst cost ($30/acre)	- 30.00
minus trucking ($ .20/bu)	- 30.00
minus drying (10pts@$.05/pt)	- 75.00
Return after harvest cost	$840.00/acre
	$5.60/bu

Fodder remains on the farm when selling grain so the value of soil nutrients removed by the fodder in corn silage would be added to the grain value when determining silage price. The fodder in a ton of wet silage would remove approximately one pound of P_2O_5 and 8 pounds of K_2O with a value of approximately $5.00 per ton at August 2011 fertilizer prices.

Arriving at a silage price begins with the grain and P_2O_5 and K_2O values:

7.5 bu/ton x $6.50/bu	=	$48.75
Value of P & K/wet ton	+	5.00
Silage Value		$53.75/ton

To match grain income when selling silage the seller would deduct grain harvest costs normally faced in marketing grain. Grain harvest costs pro-rated over 20 tons of silage would be:

Grain harvest cost pro-rated per ton of silage

Combining cost ($30/acre)	- $1.50/ton
trucking ($ .20/bu)	- 1.50/ton
drying (10pts @ $.05/pt)	- 3.75/ton
Total	$ 6.75/ton

If the grain producer adjusted silage price to reflect the savings of grain harvest costs the silage price that would match grain income would be $47/ton.

However, as an incentive to sell silage rather than grain the seller would like to gain some of the savings on grain harvest costs (combining, drying and trucking) and thus would like to receive more than the 'breakeven' of $47/ton. This is where price negotiation enters the discussion. Saving about half of the grain harvest costs would raise the silage price to $50/ton.

Depending on the price of alternative feeds, both the buyer and seller may gain by marketing corn silage. Silage harvesting cost (chopping, hauling, packing, etc) will add $6-$7/ton for a total cost of $56-$57/ton to the buyer if the buyer also harvests the silage in this example. The buyer must decide if this cost is favorable compared to purchasing alternative forages.

This procedure determines a silage value per ton based on an estimate of the grain content of the silage. Total income or cost is determined by actual silage yield. Prices, yield determination, moisture, and harvest costs can be adjusted to meet individual situations.

Misunderstandings can be minimized by agreeing on the price of the silage and method of determining yield before harvesting begins. Yield is best determined by weighing all loads or yield can be estimated by weighing several loads to determine average load content and then count total loads harvested.

Harvesting quality forage is critical to a dairyman's cost effective purchase of corn silage, see Chart 1. The greatest potential milk/ton occurs at approximately ½ milkline (R5.5). The value of silage to a dairyman declines as it matures beyond R5.8.

There are several alternative methods of pricing corn silage with examples found at Extension forage site:
http://www.uwex.edu/ces/crops/uwforage/Silage.htm

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[1]Dr. Joe Lauer, UW-Extension Corn Agronomist, in studying the relationship between corn grain yield and silage yield, looked at plant populations ranging from 15,000 to 65,000 plants per acre in 15 and 30 inch rows with planting dates from April 15 to July 1.

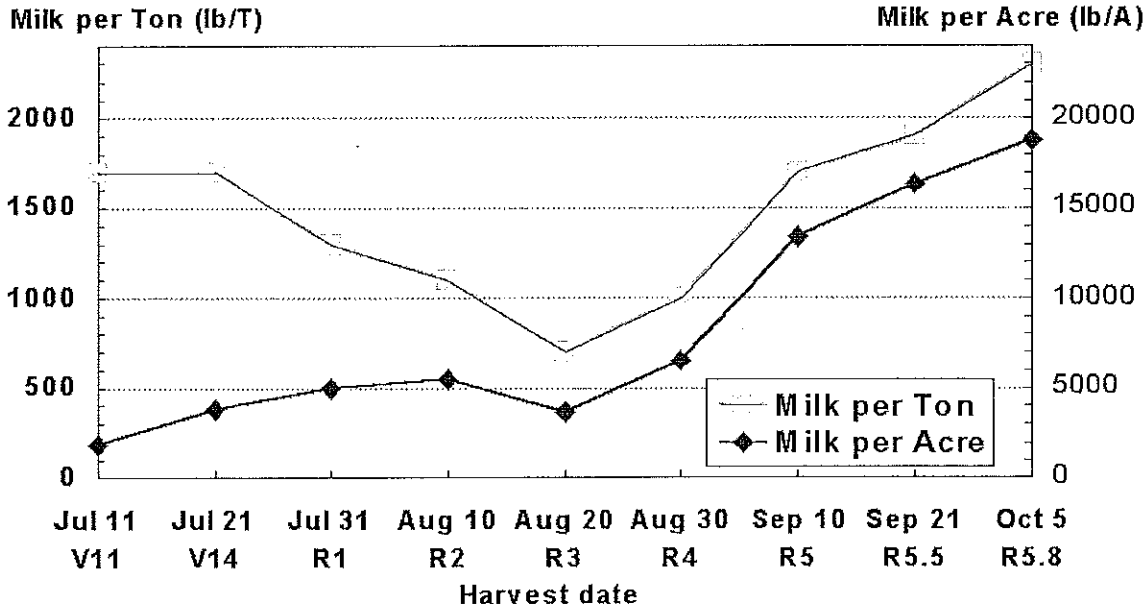
Yield and moisture factors affect the grain equivalent of corn silage[1].

Table 1. Bushels of grain contained in a ton of corn silage.

	0% moisture		60% moisture		65% moisture		70% moisture	
Grain yield @ 15.5% moisture	Silage yield	Grain equivalent per ton of silage	Silage yield	Grain equivalent per ton of silage	Silage yield	Grain equivalent per ton of silage	Silage yield	Grain equivalent per ton of silage
Bu/A	T/A	Bu/T	T/A	Bu/T	T/A	Bu/T	T/A	Bu/T
25	2.4	24.9	6.0	4.1	6.9	3.6	8.0	3.1
50	3.2	24.1	7.9	6.3	9.1	5.5	10.6	4.7
75	4.0	23.3	10.0	7.5	11.4	6.6	13.3	5.7
100	4.9	22.4	12.2	8.2	13.9	7.2	16.2	6.2
125	5.9	21.5	14.6	8.5	16.7	7.5	19.5	6.4
150	7.0	20.3	17.5	8.6	20.0	7.5	23.3	6.4
175	8.4	19.0	20.9	8.4	23.9	7.3	27.9	6.3
200	10.2	17.1	25.6	7.8	29.3	6.8	34.1	5.9

Silage moisture content has a major influence on grain equivalent and needs to be considered to accurately determine fair silage prices. For a field that yields 150 bu/A, the grain equivalents range from 20.3 bu/T at 0% moisture to 6.4 bu/T at 70% moisture.

Chart 1. Corn Silage Yield and Quality Changes During Development



Rate of corn development varies from year-to-year. This chart shows typical change in silage quality as corn matures. R1 = Silking, R2 = Blister, R3 = Milk, R4 = Dough, R5 = Dent, R5.5 = ½ Milkline, R6 = Black Layer (mature grain). Milk/ton declines after R5.8.

Inside This Issue

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