

Value of alternative feeds: corn silage
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Corn silage without ears

In certain areas of the state, corn that was planted for grain, has not had enough moisture to pollinate, or if pollinated will not fill adequately to justify harvest. For cattle producers this may be a source of feed. Corn without ears that is ensiled is similar to grass hay though lower in protein. Table 1, below lists the nutrient composition.

Table 1. Nutrient composition of dry hay and corn silage with and without ears			
	Hay – mixed mostly grass ¹	Corn silage – no ears ²	Corn silage – with ears ¹
Item	%		
Dry matter	92	25	34
Crude protein	12.5	9.0	8.3
TDN	58	59	71
Calcium	.67	.52	.24
Phosphorous	.27	.31	.24
¹ Dairy One Feed Composition Library, http://dairyone.com/analytical-services/feed-and-forage/feed-composition-library/			
² Large Ruminant System Feed Composition Library			

The corn silage without ears will meet the nutrient requirements of a mature cow (dry or lactating), as her protein requirements are low. That being the case, the value, and therefore what you can afford to pay depends on the dry matter of the corn silage. Table 2 shows the value of hay at different corn silage prices and dry matter.

Table 2. The value of corn silage with no ears compared to dry hay				
	Dry matter, %			
	25	30	35	40
Corn silage (as fed), \$/t	Dry hay, (as fed), \$/t			
30	108	90	77	68
35	126	105	90	79
40	144	120	103	90
45	162	135	116	101
50	180	150	129	113

For example, if you can purchase corn silage for \$45/ton with a dry matter of 25%, this equates to dry hay at \$162/ton. If you can get that corn silage with a 35 less water, for example 35% dry

matter, then the value of the hay drops to \$116/ton. If you are in a drought region, hay will very likely be more than \$116/ton, so purchasing corn silage makes sense.

Fully eared corn silage

Fully eared corn silage is approximately 50% grain, therefore containing more energy. As such it should have a higher value. In deed that is the case. Table 3 compares the value of fully eared corn silage to dry hay.

Table 3. The value of fully eared corn silage compared to dry hay				
	Dry matter, %			
	25	30	35	40
Corn silage (as fed), \$/t	Dry hay, (as fed), \$/t			
30	130	108	93	81
35	152	127	108	95
40	173	145	124	108
45	195	163	139	122
50	217	181	155	136

In this case, corn silage purchased at \$45/ton with a dry matter of 25% is equivalent on an energy basis to hay at \$195/ton, or if the corn silage is 35% dry matter the hay value is \$139/ton. In this scenario, if you can purchase hay for less than \$139/ton, it is a better deal than fully eared corn silage at \$45/ton (35% dry matter).

A rule of thumb for valuing fully eared corn silage, out of storage is 9 – 10 times the price of a bushel of corn. Corn is currently selling for \$3.25/bu. This puts corn silage at \$30 – \$35/ton, making it more economical to feed hay, if you can purchase it for \$93 - \$108/ton.

Other considerations:

1. Fully eared corn silage will not meet the protein requirements of a lactating cow, therefore protein supplementation is needed.
2. A 100% corn silage (fully eared) diet will make fat cows. On an as fed basis feed approximately 1/3 hay and 2/3 corn silage.
3. Feeding fully eared corn silage requires Ca supplementation.
4. Neither corn silage without ears nor fully eared corn silage will meet the protein requirements of growing cattle.
5. Feeding corn silage may require different feeding systems and equipment if you have been an all hay feeding operation.
6. In warmer weather of fall and early spring, corn silage will not keep will once taken out of storage.

The bottom line is that given the tight feed supplies and lower calf prices, having a forage analysis and a sharp pencil is critical to reducing the risk of making the wrong decision.

