How Much Corn Is Passing Through My Cows?

Larry Chase,
Cornell University

Corn silage harvested in 1995 was highly variable in both maturity and yield. In many areas of the Northeast, corn silage was ready for harvest 1-3 weeks earlier than normal.

The dry down rate was also more rapid. The end result was often a corn silage that was drier and more mature.

Kernels are hard and frequently smaller than normal. The percent grain may also be low.

How much of this corn is passing through the cow? A recent study conducted by Dr. Joe Harrison at Washington State University provides some initial information. The same corn silage hybrid was harvested at either ½ to ⅔ milk line or at back-layer. The silage was then used in rations for mid to late lactation cows in a digestion trail study. Corn silage comprised 40 percent of the total ration on a dry matter basis. The preliminary results of this study are:

	Stage of Maturity	
	Dent	Black-line
Corn silage (CS) DM, %	36	42
% grain in CS	26.4	41.1
% corn in ration from CS	9.8	15.2
lbs corn in ration from CS	4.5	6.7*
% corn in feces, % of DM	3.0	9.0*
lbs corn in feces	.5	1.3*
% fecal loss, % of intake corn	10	20*
Dry matter intake, lbs	45.6	44.4
Dry matter intake, % of BW	3.04	3.01
Milk, lbs/day	47.1	44.2*
Milk fat, %	3.68	3.91*
Milk fat, lbs	1.67	1.69
Milk protein, %	3.49	3.54
Milk protein, lbs	1.63	1.54
Dry matter digestibility, %	66.7	66.4

*Significant difference between treatments (p=.05 or less)

The more mature corn silage contained more grain and had a higher fecal loss than the earlier harvested corn silage. Actual daily grain intake from the more mature corn silage was still higher even after accounting for fecal loss.

The lower milk production observed when feeding the more mature corn silage fits with field observations. Dry matter digestibility was not different between the two maturities.

This may seem confusing at first. As corn silage matures, stover digestibility is expected to decrease. At the same time, there is a higher level of grain and starch in the more mature corn silage.

The final report should contain additional information to permit us to sort out differences in digestibility of the various chemical components of the two corn silages. This information will be valuable in explaining the milk production response observed in this trail.

Just think: how much difference might there have been in milk production if this trial had been conducted with early lactation cows?

Pa. Master Corn Growers Association