Determining Corn Silage Prices

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With the wet spring we endured, farmers were delayed in planting corn, leading to a crop that will be maturing far later into fall than a typical year. The wet weather pattern has continued through early summer, causing slower corn growth as well as difficulty in getting first-crop haylage harvested, all while forage inventories were already low on many farms. The combination of a late-planted corn crop that may not fully mature for grain harvest and the decrease in the harvest of dairy cow-quality haylage will likely result in a greater number of corn acres harvested for silage. This may be a good opportunity for those with tight forage supplies to harvest more corn silage to ensure their forage supply will last until spring. This is also a good opportunity for grain farmers who may not be able to get corn to mature and dry-down in time for fall harvest due to late planting. In short, whether you're buying or selling corn silage, the participants of a corn silage transaction must come to agreement on a fair price.

There are several methods to determine a value for corn silage. One method involves multiplying the corn price by a factor of 8-10 to estimate value per ton of wet forage. While this may work, it doesn't consider several other factors other than the value of the grain. To aid in this process, there are a number of tools available online at the University of Wisconsin-Madison Extension Forage Team website (fyi.extension.wisc.edu/forage/economics/).

The UWEX Corn Silage Pricing Decision Aid developed by Ryan Sterry, Joe Lauer, and Lee Milligan is a simple Excel spreadsheet taking input data specific to many circumstances. It provides a minimum price for the seller to receive and a maximum price the buyer should pay to give a range for negotiation between buyer and seller. A mobile app (Corn Silage Pricing App developed by Ryan Sterry and Greg Blonde) also available for download uses the same data input and output but is more convenient. It can be done on a mobile device in the field with connections to corn and hay prices for easier data input. Input data include the estimated corn grain yield per acre, silage dry matter percent, estimated corn silage yield, local prices for corn and low-quality hay, and fertilizer value for phosphorus pentoxide (P_2O_5) and potassium oxide (K_2O). The decision aid also considers who will be doing the various tasks of harvest, including chopping and hauling, and who will be incurring the cost of storing the forage. The spreadsheet also includes costs of grain harvest (combining, trucking, drying) that the seller would have incurred if the grain would have been harvested instead of silage.

For example, use an estimated corn grain yield of 150 bu/ac, an estimated corn silage yield of 20 tons wet feed/ac, a price of $4.25/bu corn at the local cooperative, a price of $100/ton for low-quality hay, and a price of $0.35/lb of P_2O_5 and K_2O removed. The buyer will do the harvesting, hauling, and storage, so the seller will not incur those costs. For the seller, the minimum price to recover the nutrient removal costs and the grain value if they were to sell grain was $496/ac or $24.85/ton wet forage or $71.07/ton dry forage. The maximum price the buyer would pay for the silage (not including the costs of harvesting and storage they will incur) was $737/ac or $36.93/ton wet forage or $105.52/ton dry forage.

Obviously there is considerable room for negotiation on each side (a range of $34/ton dry forage). Moisture content after harvest should be considered since a wetter silage will have fewer nutrients per ton than a drier forage, warranting a lower price. Adjustment for nutrient content (starch or NDF) is not part of the app or spreadsheet, but the buyer may set a minimum nutrient value with a slightly lower price if the forage tests lower in starch.

With some corn planting delayed until late June or early July, there will be corn harvested late this fall. Since these corn silage pricing decision tools rely on the price of corn and corn grain yields to estimate the value of corn silage, it would not be recommended they be used to estimate a value for very immature corn forage having little or no grain. Rather, in these cases, an estimated value of forage per ton may be determined by using the value of hay from a local hay market report with similar quality and moisture content to adjust the price to a wet basis per ton. The quality of immature corn forage at tassling can be very high with excellent fiber digestibility and moderate protein content; similar to good- to high-quality grass hay. In summary, corn silage pricing decision tools can be a great way for the buyer and seller to come to an agreement to ensure a fair price is reached for both parties.