

International Silo Association

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Corn Silage Shrinkage's Annual Price Tag for Producers:

\$500 Million

American agriculture loses \$500 million annually to shrinkage of corn silage--which are avoidable losses, according to information shared by Dr. Keith K. Bolsen Professor Emeritus of Kansas State University, at the International Silo Association meeting held in January in Ontario, Canada.

Leroy Shefchik managed the International Silo Association from December 1, 2006 until June 30, 2010. In the six months prior to his retirement, Shefchik researched different methods of silage storage—especially the bags and bunkers often discussed by university scientists during their presentations on feed storage. Shefchik noted that the researchers rarely focused on tower silos, even though there are thousands of these silos in the United States and Canada.

In discussions with U.S. silage researchers, Shefchik discovered that they tend to focus on bags, bunkers and piles because of the importance of improving the way dairy and beef producers manage those storage systems. The need for improvement, Shefchik noted, is in the quality of horizontal storage, and bags, bunkers and piles have a much larger window of error in the use of that type of storage.

At the International Silo Association meeting held in Madison, Wisconsin, in December of 2010, Dr. Richard E. Muck, agricultural engineer with the U.S. Department of Agriculture's Agricultural Research Service (USDA-ARS), presented a comparison of storage systems. At the ARS U.S. Dairy Forage Research Center in Madison, WI., Dr. Muck and his colleagues studied three different types of storage: an oxygen-limited tower silo, a bag and a bunker. Dr. Muck reported the average dry matter losses for each type over a 2-year period.

Dry Matter Losses – Average

Silo	Spoilage	Gaseous (% of DM)	Total
O ₂ -Limiting	0.1	4.3	4.3
Bag	1.5	9.8	11.3
Bunker	4.6	12.2	16.9

According to Shefchik, the numbers presented by Dr. Muck are relatively close to those that Shefchik had seen previously in his nearly 40 years in the feed storage industry.

Shefchik believes that producers must improve their silage management practices to reduce the \$500 million in annual losses to corn silage shrinkage. Horizontal storage seems to be less costly per ton than tower silos, but producers should take into account the higher levels of shrinkage, plus the labor to pack, cover and uncover, and feedout the silage, which boost expenses beyond the initial cost.

Tower silos have a higher upfront cost, but offer advantages, including about a 10 percent unit reduction in shrinkage. When storing 3,000 tons of corn silage, that shrink reduction equals 300 tons of feed times \$50 per ton, for a total savings of \$15,000.00. This savings, plus reduced labor costs and reduced acreage needed to produce enough feed for the livestock operation, adds up to a lot of dollars saved. Shefchik also noted that less acres planted means money saved in fuel, feed and fertilizer. Shefchik said producers can generally recover the upfront cost of a tower silo in 5-7 years.

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