Resources for Calculating Silage Storage Costs

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Silage storage and handling is a costly part of running a dairy operation. Forage Focus readers who are expanding dairy herds or making other changes may want to check out a new analysis of silage storage systems published last fall by researchers at Kansas State University and Monsanto. "Bunkers, Piles, or Bags: Which is the Most Economical?" was written by a team led by agricultural economist Kevin Dhuyvetter. A paper and accompanying spreadsheet template are available at http://www.agmanager.info/livestock/budgets/production.

The main point of their analysis is the "most economical manner" of handling silage may not necessarily mean the lowest cost per ton of silage fed. They suggest looking at whether milk production might be affected by nutritive quality of silage stored in different systems. They make the point that some silage typically becomes so spoiled that the bad feed is visible and producers may be tempted to feed more of this spoiled material than they should because they want to minimize dry matter losses and/or the effort to separate spoiled feed. This may be a "false economy," however, if the poorer quality feed reduces milk output.

Their spreadsheet calculates the costs of ownership and operation for each of the three storage alternatives for a herd size specified by the user. Other inputs include amount of silage fed/day, moisture content, storage and feeding losses, and other information used to estimate storage volumes required for each alternative. To get at the milk production issue, it provides spaces to enter any difference in milk output/cow/day the producer expects for each alternative. The paper includes one citation to a KSU analysis of spoilage on nutritive value.

A similar "Cost of Forage Storage" spreadsheet was developed by Dr. Brian Holmes at the University of Wisconsin-Madison. This spreadsheet is available on the UW "Forage Resources" website, at: http://www.uwex.edu/ces/crops/uwforage/storage.htm.

One difference between the two spreadsheets is that Dr. Holmes also provides an opportunity to compare costs of three types of upright silos, silage bales and dry hay along with bunkers, piles and bags. The section of the spreadsheet on bunker sizing is also somewhat more detailed. That spreadsheet was last updated in May of 2003, so current data should be used. Once the user has done enough groundwork to determine the cost rates for a specific situation, however, default values are easy to modify so that should not be an obstacle for using it.

Some companies and associations have their own spreadsheets for comparing various silage storage options. Remember, an economic analysis is only as good as the assumptions upon which it is based.

Richard Muck and Brian Holmes give a nice summary of factors to consider when selecting a silage storage system which includes more than just the economics. Their article Deciding on a Silage Storage Type is available in "Silage for Dairy Farms" (NRAES-181).