Dairy Issue Briefs

DIBS

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Plummeting prices in the dairy industry are creating critical cash-flow and long-term survivability issues on Ohio's 3,328 dairy farms. Cost-cutting decisions must be made with full awareness of both short and long-term production and economic consequences. OSU Extension's Dairy Working Group, a collaboration of OSU Extension Educators and Specialists discuss:

Reducing costs to improve short term cash flow

In this time of tight cash flow, should I use silage additives this year?

The cost per ton of most common silage additives range from $1 to $3/ton of wet forage. On a per ton basis, this is a minor cost, but on a per farm basis, the cost can be substantial because annual forage requirements range from 1000 to 1500 tons of wet forage per 100 cows. In this period of tight cash flow, spending must be prioritized so that dollars are spent where both the likelihood of a positive return and the dollar value of that return is high. What made economic sense in better economic times may not make sense in the current situation.

1. You do not need any additives to make good, well-preserved silage. Following good silage making practices (chop at correct moisture concentration, fill quickly, pack well, and cover the silo*) costs about the same as poor silage making practices.

2. The most commonly used additive for both corn and haycrop (legume and/or grass, and small grain) silages is lactic acid bacteria (LAB). Most studies show that LAB inoculants increase the rate of fermentation, but the response is usually greater for haycrop silage than for corn silage. Increasing the rate of fermentation reduces fermentation losses (part of shrink). Because haycrop silage is worth more per ton and because haycrop silage is about twice as likely to respond to LAB, those silages should be your first choice for using this additive. In addition, a positive response is more likely for the first and last cuttings (cooler temperatures) than for other cuttings.

For haycrop silage, LAB might reduce shrink losses by about 4 percentage units (equal to about 30 lbs of dry matter per ton of ensiled forage). A cash saving could be realized if using an additive means that you can harvest 4% fewer acres as haycrop silage (should save about $200/acre assuming the alfalfa is already established). The saving resulting from reduced shrink on corn silage will range from nothing (the most likely response), but in some situations could equal the saving associated with planting about 4% fewer acres for corn silage.

3. Some studies have shown that cows fed LAB treated silage produce more milk than cows fed untreated silages. The mode of action is unclear. Based on a summary of studies, cows fed inoculated silages (various types) produced an average of about 2 lbs more milk than cows fed untreated silages. If this response is obtained, then the investment in the inoculant is clearly profitable (spend about 5 cents per cow per day on inoculant and get 20 to 30 cents worth of milk). Not enough studies have been conducted to estimate the likelihood of actually getting an increase in milk production.

4. LAB will not reduce mold and spoilage that occurs during silage feed out. Indeed, many studies show that LAB can increase spoilage because it reduces acetic acid levels. The best way to reduce spoilage during the feedout phase is to chop the forage at the correct moisture concentration and particle size, pack well, and maintain a clean silage face. Haycrop silages made correctly should have only small spoilage losses, but corn silage, even if made correctly, is prone to spoilage. To help control spoilage, chemical-based inhibitors (such as propionic acid or sodium benzoate) and *Lactobacillus buchneri* inoculants can be used. Most studies (and there are not many) report no difference in milk production between cows fed treated or untreated silages. Therefore, to determine whether these additives are profitable, only the expected savings in reduced spoilage should be considered. Obtain the cost of the additive from your supplier based on an effective treatment rate (100,000 cfu/g of fresh forage is usually adequate for *buchneri*; chemical additives can be effective but usually require rates about twice as high as what is recommended). In typical situations, spoilage may range from 5 to 10% of what was ensiled (equal to 35 to 70 lbs of silage DM per ton ensiled). For corn silage, that is worth between $2 and $3.50 per ton. Another way to calculate potential savings is with less spoilage you could probably grow and harvest 5 to 10% fewer acres of corn silage.

Bottom Line: Limit the use of lactic acid bacterial (LAB) inoculants to the first and last cuttings of haycrop silage. The use of these products on corn silage should be considered very carefully, as the return may not be worth the cash investment. If corn silage spoilage during feedout has been a problem on your farm, do not use standard LAB, but consider using *buchneri* inoculants. Spoilage should be reduced and you should be able to save money by not needing to plant as many acres of corn silage.

* Resource for making good silage: http://www.das.psu.edu/dairy/nutrition/pdf/from-harvest-to-feed.pdf

Author: Bill Weiss, Dairy Specialist, OARDC, Wooster.

Contact at weiss.6@osu.edu, 330-263-3622.

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