

## *Keeping Dairy Farm Silage Bacteria-Free*

### *Issue (Who cares and why?)*

In the United States each year, more than 200 million tons of silage is preserved and fed to cows. Feeding high-quality silage pays off in increased milk production and reduces costs, replacing the more expensive grains in the typical dairy diet. However, silage spoils readily when exposed to air because of yeasts and molds (fungi). Spoiled silage increases feed costs for producers and makes results in the disposal of spoiled feed.

### *What has been done?*

A new product that improves the aerobic stability of silage has been developed. Research conducted at the University of Delaware has helped in development of a new silage inoculant containing the bacteria *Lactobacillus buchneri*. This organism naturally converts lactic acid into acetic acid, which has strong antifungal properties and thus improves the aerobic stability of silage. UD's lab was the first to show the efficaciousness of this organism on alfalfa silage and high moisture corn. We were also instrumental in establishing the effective dose rate for this product. Research has resulted in the development and sales of a new silage inoculant. Our research was used in a submission package to FDA for approval of use for this new microbe.

### *Impact*

The new inoculant contains the bacteria *Lactobacillus buchneri*, which is the only new microorganism ever approved for use as a silage additive in the US. In the 2002 forage season (first sales season), more than one million tons of silage were treated with *Lactobacillus buchneri*. Use of this inoculant is improving the quality of silages feed to lactating cows and reducing the disposal of spoiled feed.

### *Primary impact area(s)*

Extension  
Research  
Education

### *Funding sources*

State of Delaware  
University of Delaware  
Lallemand Animal Nutrition

### *Topics*

Sustainable Agriculture  
Production Agriculture