

# BONSILAGE NEWS



## When Good Silage Goes Bad – and How to Prevent It

It's a sickening odor. The odd smell emitting from freshly opened silage means Clostridia took its toll - on the silage, on profitability and on animal performance. These undesirable anaerobic bacteria in silage are known to metabolize lactic acid into butyric acid and degrade plant protein. This results in silages that contain high amounts of butyric acid and ammonia, which causes the putrid odor. Grass and alfalfa are at increased risk of Clostridial contamination for a number of reasons, but low dry matter (25-30%) cuttings are especially vulnerable. There's only so much that can be done to prevent wet forage, and any number of situations can lead to this problem. But just because the forage is wet doesn't mean it is doomed to spoil.

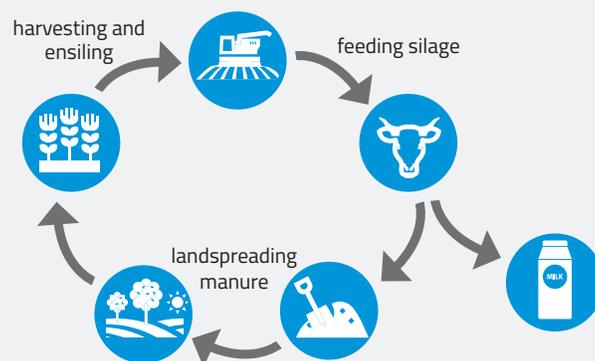
### ADVERSE EFFECTS OF CLOSTRIDIA

When making grass and alfalfa silage, undesirable Clostridia spores can enter the forage. They break down protein and cause high fermentation losses by feeding on plant sugars, which leads to decreased feed quality.

Moreover, in the silage, Clostridia can pass from the vegetative to the generative phase and are ingested in spore form by livestock eating the silage. This begins a vicious cycle of contamination.

Crops are at increased risk of Clostridial contamination for a number of reasons, but low dry matter (25-30%) cuttings are especially vulnerable.

### CLOSTRIDIA CYCLE



Clostridia contamination often starts in the soil and spreads throughout the dairy quickly. Spores germinate in the cows' digestive tracts, ending up in manure. Ultimately, they can pass into the milk where they negatively affect quality.

## DON'T LEAVE FERMENTATION OF LOW DRY MATTER FORAGES TO NATURE

Natural ensiling conditions at low dry matter ranges < 30% (moisture > 70%) are far from ideal, and it is difficult to lower pH fast and deep enough to prevent Clostridia from taking over the fermentation process. Inoculating with BONSILAGE FORTE at the beginning of the ensiling process is highly effective in inhibiting Clostridia development. BONSILAGE FORTE optimizes the fermentation process and significantly reduces

### RESEARCH PROVEN

The concentration of butyric acid-producing bacteria (Clostridia) can be high in silages. However, both butyric acid production and Clostridial spores are highly undesirable in the further processing of dairy products.

Research shows that BONSILAGE FORTE used in low dry matter forages optimizes the fermentation process. The figure below shows the influence on BONSILAGE FORTE on the formation of butyric acid as well as on the development of Clostridial spored in various grass silages. For a comparative trial, several

losses. The blend of lactic acid bacteria quickly drops the pH, inhibits Clostridia growth and lowers the risk of butyric acid fermentation and protein breakdown.

Inoculating low dry matter ranges is essential to inhibit Clostridia.

first-growth grass crops were selected and divided into an untreated control and a treated group. The silages were stored at an ambient temperature of 77° F for 14, 49 and 90 days. Concentrations of Clostridial spores were effectively reduced at three sampling time points. The intensive acidification due to the added lactic acid bacteria led to a sharp pH decline and a marked suppression of butyric acid formation.

In the U.S., more than 1 million tons of BONSILAGE FORTE-treated silage were analyzed and showed no incidence of Clostridia.

### WALK OVER CLOSTRIDIA PROBLEMS!

Indicators of silage quality

#### pH

- The lower, the better
- Indicator for acidification, but not for type of acid
- Always check fermentation pattern for unwanted acids

#### Lactic acid

- Strong acidification
- Important in wet and protein-rich silages

#### Butyric acid

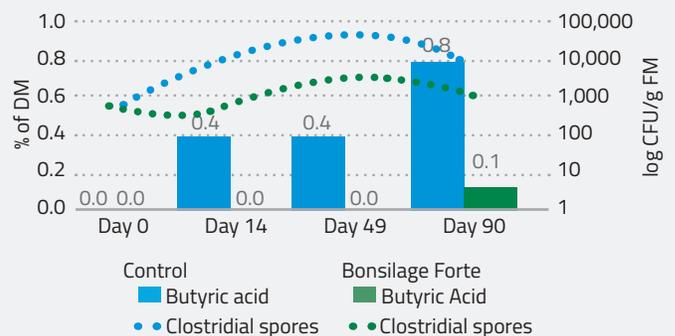
- Odd smell
- Indicator of Clostridial fermentation and protein degradation.

BONSILAGE FORTE controls the fermentation process and stops growth of detrimental silage bacteria.

### BONSILAGE FORTE

- German DLG Quality Verification for effectiveness against Clostridia.
- Dosage: At least 300,000 CFU/g fresh matter of forage.
- DM Range for grass-, clover grass-, alfalfa-, triticale silage: 22 - 35% DM

Development of butyric acid concentration (% of DM) and clostridial spores (log CFU/g FM)



Source: German Association for Feed Preservation, 2004



## PROVITA SUPPLEMENTS: We're here to help your farm

Our expertise in silage management goes well beyond our products, and we're happy to share our knowledge to improve the quality of the silage you produce. Talk to your PROVITA

SUPPLEMENTS specialist to learn more about how we can support the profitability of your operation and the wellness of your animals.



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