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Payback News

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Grass Tetany in Beef Cattle

Fortunately, the long wait is finally over, and it is the time of the year to start thinking about turning cows out to greener pastures. Although this comes as a big relief, we need to watch out for grass tetany. The most common form is hypomagnesium tetany, which occurs when grasses are low in magnesium (less than 0.2% Mg), high in potassium, and high in nitrogen. These conditions occur during the early turnout period. A combination of these nutritional factors as well as the cow adjusting to the new feed can express this condition. Cattle who have tetany exhibit uncoordinated gait,

which leads to convulsions, coma, and death. More often than not, the signs are not observed before the cows are found dead. Grass tetany can usually be prevented by supplementing high magnesium minerals or high magnesium tubs to cows. It is recommended that feeding these products



begin a couple weeks before turnout so the cows are acclimated to the higher magnesium level, as magnesium oxide is very bitter. A consistent intake of 3-4 oz of high magnesium mineral (10% magnesium) protects the cattle from tetany. If you have pastures that green up early, graze less susceptible animals in these higher risk pastures. Planting legume species in pastures will decrease the incidence of tetany in grazing cattle as well. ~ Lance Kennington, PhD.

Choosing an Inoculant for Specific Silage Challenges

With so many forage inoculants available, which is the best choice? It's not the easiest of calls, as each crop presents its own set of challenges. Choosing the right inoculant for the task can be critical to help produce high quality, stable feedstuffs that will fuel production and profitability.

“Using the right inoculant as part of an overall good silage management program will help producers achieve high quality silages,” says Renato Schmidt, Ph.D., Forage Products Specialist, Lallemand Animal Nutrition. “In many cases, the key to understanding if a product will work as expected is right on the product label.”

No matter what your silage challenges, Dr. Schmidt identified six key features to look for when selecting an inoculant:

1. **Independent, scientific research.** The trials should validate the efficacy of the product at the application rate stated on the label and, ideally, be published in a reputable journal or presented at a scientific conference. In addition, make sure the research was performed in the specific crop you are going to ensile.
2. **An application rate of at least 100,000 CFU per gram of forage.** This is the minimum level of fermentation enhancement that is recommended by university researchers. If facing an aerobic stability challenge, or threats from yeasts and molds coming from the field, producers should consider using a product containing a high dose rate *Lactobacillus buchneri* 40788, as reviewed by the FDA.
3. **Contains enzymes** at guaranteed levels, to help the bacteria drive a rapid, efficient fermentation.
4. **Shelf life and storage indications** on the product label need to be followed to help ensure products remain live and viable. Inoculants are living organisms, and appropriate packaging and handling helps guard them from heat, moisture and air.
5. **The product format is suitable.** For example, dry granular application may be less effective, especially in higher dry matter (DM) crops.
6. **Packaging** that helps maintain the product viability, such as foil laminate pouches with a barrier against moisture and oxygen.

Last, but not least, take into account your silage history and the challenges you face. Generally, high protein crops present a greater fermentation challenge, while high starch crops have greater aerobic stability issues. Be aware of specific challenges due to weather—such as DM, drought, hail, etc.—crop maturity and factors such as insect damage and field disease.

There are specific strains that are proven to help drive a fast, efficient front-end fermentation and strains that help support aerobic stability. Some products provide an effective combination proven to achieve both of these goals, Dr. Schmidt notes.

“It comes back to looking for the independent trial data to validate efficacy,” he recommends. “Think back to challenges you have experienced in previous years. Then, look for an inoculant that can help you overcome those obstacles. It's a relatively small commitment in time to read product information and can help ensure that your inoculant investment is returned to you in the form of high quality silages.”

Silage shrink affects feed quality and quantity

When producers experience silage shrink what results is less available feed and, most importantly, a lower quality feed. The initial dry matter (DM) losses are often of more valuable nutrients such as sugars, starches, and soluble proteins. This, in turn, leads to a higher concentration of lower-value nutrients, like fiber.

“Ensuring higher silage quality and conserving more of the nutrients and silage mass can save producers a significant amount of money by reducing the cost of purchased feeds,” says Renato Schmidt, Forage Products Specialist, Lallemand Animal Nutrition. “Dry matter loss isn’t always visible. Around 15% loss is to be expected, with 10% or more in additional losses that can be prevented through good management practices, including using proven inoculants. Preventing 10% additional losses can save producers approximately \$44,000 a year (based on 1,000 cows consuming 20 lbs DM/day, for 3,650 tons of silage a year with silage valued at \$120 per ton on a DM basis).

To reduce losses, it’s helpful to understand common pitfalls. These can be:

- Aerobic spoilage
- Aerobic respiration and fermentation
- Silage runoff
- Secondary fermentation

Dry matter losses occur by two primary means: losses during the initial ensiling fermentation and aerobic spoilage losses. To reduce initial fermentation losses, the key is to use an inoculant proven to dominate the fermentation and produce a rapid, efficient pH drop. Promoting a fast pH drop can also help stabilize forage and reduce yeast growth, which is a major cause of silage heating. The lactic acid bacteria *Pediococcus acidilactici* and *Lactobacillus plantarum* found in Sil-All® 4 x 4, provides an efficient, fast fermentation fueled by sugars generated by enzyme activity.

With spoilage losses, the key is preventing spoilage that occurs when oxygen allows bacteria, yeasts and molds to grow in the silage. Uniquely, the data validating the efficacy of *L. buchneri* 40788, as found in Biotal® Buchneri 500, to actively prevent yeast growth and heating, and subsequent losses in quantity and quality of the silage.

“Using a silage inoculant that has been shown to reduce spoilage pays dividends. When producers reduce spoilage, they have more total tons of feed with well-preserved nutrients. It certainly pays to reduce dry matter losses.”





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