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Technical Literature

Making Sense of Silage Inoculant Labels

Understanding product labels can sometimes seem next to impossible. Because government regulations deal specifically with the content of the silage inoculant product as it is sold in the container, not with broader issues of dilution of the inoculant bacteria into the silage, it is important to be able to understand what is and is not revealed on labels. A thorough understanding of the information present on a product label, and the information which might not be on the label, can be critical to deciding which inoculant is the best value for the producer.

Important information should be easy to find on a label, including:

1. Ingredients in the product
2. Amount of active ingredient(s)
3. Mixing instructions
4. Application rates

A crucial piece of information a producer should consider is the amount of bacteria that is actually being applied to the silage -- the number of colony forming units (cfu) per gram of silage, shown in terms of the tons of silage it can treat. A review of several commercially available silage inoculants showed that this important information is often either not on the label or is very difficult to find. Because this information is critical to silage inoculant performance, Kemin Americas, Inc., makers of Kem LAC® brand silage inoculant, tries to provide it in easy-to-understand ways, including on the label and in technical reports like this.

Information that should be on a silage inoculant label is shown in Table 1. Many labels do not show the amount of bacteria being applied to a ton of silage and often fall short of accepted industry standards. It is commonly accepted that an effective silage inoculant should contain at least 100,000 cfu/gram of silage.

Table 1. A comparison of several commercially available silage inoculants.

	Kem LAC silage inoculant	Brand A	Brand B	Brand C
Guaranteed analysis, cfu/g of inoculant	60 billion	2 billion	5 billion	1 billion
Package weight	1 pound	500 grams	25 pounds	2500 grams
Amount of water used in mixing	100 gallons	25 gallons	250 gallons	62 ½ gallons
Mixture application rate per ton silage	4 lbs/ton	2 quarts/ton	2 quarts/ton	1 quart/ton
cfu/g of silage	150,000	22,000*	60,000*	10,500*

*Represents information calculated and not provided on the label.

When buying a silage inoculant, producers need to know what they're getting for their money. Therefore, if any of the above information is missing from the label, ask for it. Be sure to consider it carefully when deciding which inoculant is the "best buy."

To determine the “CFUs per gram of silage” provided by your inoculant, use the following calculations:

Your calculation

Step 1: [] cfu/gram of inoculant × 454 grams/lb. = [] cfu/lb. of inoculant.

Step 2: [] cfu/lb. of inoculant × [] package size (lbs.) ÷ [] lbs. water required = [] cfu/lb. of solution.

Step 3: [] cfu/lb. of solution × [] lbs. of solution/ton of silage = [] cfu/ton of silage.

Step 4: [] cfu/ton of silage ÷ 908,000 grams/ton of silage = [] cfu/gram of silage.

Competitor example

Step 1: 1,000,000,000 cfu/gram of inoculant × 454 grams/lb. = 454,000,000,000 cfu/lb. of inoculant.

Step 2: 454,000,000,000 cfu/lb. of inoculant × 5.5 package size (lbs.) ÷ 519 lbs. water required = 4,811,175,337 cfu/lb. of solution.

Step 3: 4,811,175,337 cfu/lb. of solution × 2.1 lbs. of solution/ton of silage = 10,103,468,208 cfu/ton of silage.

Step 4: 10,103,468,208 cfu/ton of silage ÷ 908,000 grams/ton of silage = 11,000 cfu/gram of silage.

Conversion Rate Table

16 ounces = 1 pound

1 pound = 454 grams

1 gallon = 8.3 pounds

4 quarts = 1 gallon

2 pints = 1 quart