



User Guide

How to get the most out of Forage Fresh Inoculant:

Studies show bacterial combinations used in **Forage Fresh Inoculants** can drop the pH on 35-40% dry matter alfalfa haylage from 6.3 to well below 5.0 in just 48 hours and down to 4.3 or less in five days. Alfalfa haylage at higher moisture levels, such as 30-35%, have shown a drop in pH from 6.3 down to less than 4.5 in just 48 hours.

This kind of rapid and efficient fermentation allows for:

- **Increased dry matter retention**
- **Higher forage protein levels**
- **Improved feed efficiency**
- **Better milk production.**

QUESTION:

Would you only use half as much vaccine as your vet recommended, or keep that vaccine at temperatures above what was recommended?

Of course not! Yet every year thousands of producers spend tens of millions of dollars on silage inoculants that are never even given the chance to work. Bacteria found in inoculants are living things. Improper use, mixing, and handling of bacterial inoculants can severely damage or even completely kill the beneficial bacteria before they are applied.

Storage and Handling: Keep Forage Fresh inoculants cool and dry. It is acceptable to store in a refrigerator or a freezer, but repeated freeze/thaw cycles will reduce viability. Heat and moisture during inoculant storage will decrease bacterial viability.

Water Quality: Never use strongly acidic (below 5) or alkaline (above 8) water or chlorinated water. Some of the bacterial strains are very sensitive to chlorinated water.

Water Temperature: Never use hot water to constitute the inoculant. Start with cool water and do not allow the mixed solution to exceed 90 degrees during use. Insulated tanks are less susceptible to this issue but should still be monitored. Non-insulated tanks should be monitored very closely. Frozen water bottles and ice packs can be used to keep temperatures in check.

Coverage: Calibrate application equipment and vary the application rate as chopper throughput changes, or as changes in dry matter warrant. Keep equipment clean to ensure that even distribution of the inoculant is always applied. The correct bacterial combinations at the proper location is the best way to help ensure a proper fermentation. Make sure to completely rinse tanks after cleaning to remove chemicals that could kill bacteria in the system.



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Technical Data Sheet

Primary Inoculant Bacteria and their Characteristics

Pediococcus acidilactici PF7103

- Isolated and tested primarily for its effectiveness as a forage preservative. This particular strain was selected for its ability to continue to grow and produce lactic acid under conditions of higher pH after initial chopping. Lactic acid inhibits the growth of pathogenic bacteria.

Enterococcus faecium PF7101

- A species of bacteria characterized as part of the normal gastrointestinal microbial flora in domestic livestock, companion animals and humans.
- A rapid grower that produces lactic acid quickly to lower the pH.
- Produces enzymes required to assist in the digestion of foods and a considerable portion of consumed dietary ingredients.
- Numerous published scientific studies demonstrate the effectiveness of inoculants containing *Enterococcus faecium* PF 7101.

Lactobacillus buchneri

- Bacteria originally identified from corn silage samples that stayed cool after being exposed to air for several days.
- We provide the 400,000 Cfu/g needed to out-compete native bacteria.
- Good choice for forages that will be moved.

Lactobacillus lactis PF7114

- Helps reduce or eliminate butyric acid.
- Organism often used in cheese cultures to inhibit clostridia and listeria.

Lactobacillus plantarum PF7102

- Isolated from corn silage and tested primarily for its effectiveness as a forage preservative.
- This strain was selected for its natural ability to produce lactic acid under conditions of low pH.

Primary Inoculant Enzymes:

Amylase/Cellulase/Hemicellulase



<i>Pediococcus acidilactici</i>	✓	✓	✓	✓	✓
<i>Enterococcus faecium</i>	✓	✓	✓	✓	
<i>Lactobacillus plantarum</i>	✓	✓	✓	✓	✓
<i>Lactobacillus lactis</i>		✓	✓		
<i>Lactobacillus buchneri</i>				✓	✓