

# QUALITY

## QUALITY CONTROL

Products are independently tested to ensure manufacturing quality is maintained. Lallemand Animal Nutrition production facilities follow a strict Total Quality Management System to ensure product purity and quality.

All Biotol Forage Inoculants are manufactured at our facility in Milwaukee, WI under the following internationally recognized quality accreditation systems: ISO 9001: 2000; AIB GMP certification; AFIA Safe Feed/Safe Food Certification; FAMI-QS.

**WHAT IS ON THE LABEL IS  
WHAT IS INSIDE THE PACKAGE.**



Production of good quality forage requires good management practices. The use of any forage additive cannot be expected to overcome bad management.

## PRODUCT STORAGE AND APPLICATION

Store unopened packages in a cool, dry place. Refrigeration at or below 4° C is recommended. Shelf life is 18 months from date of manufacture when stored as recommended. Can be applied using any suitable applicator. Ensure that the applicator is properly cleaned and calibrated.

All Biotol Forage Inoculants include a proprietary blend of stabilizers to both maintain viability in the package and to enhance stability following rehydration of the product. Once rehydrated with potable (drinking quality) water, the product will maintain viability for 3-4 days in the applicator tank, when kept cool and out of direct sunlight.

Biotol Forage Inoculants are not affected by chlorine up to potable water standards (1 ppm).

Some of the essential product stabilizers are finely divided, insoluble powders (1-3% by weight). This may result in a small residue of fine white powder in the bottom of the applicator.

# SPECIFICATIONS

## BIOTAL BUCHNERI 500

Contains live viable cells of *Pediococcus pentosaceus* 12455 and *Lactobacillus buchneri* 40788. When properly applied, Biotol Buchneri 500 will deliver 100,000 cfu/g *Pediococcus pentosaceus* plus 400,000 cfu/g *Lactobacillus buchneri* for a total of 500,000 cfu/g silage or haylage; 150,000 cfu/g *Pediococcus pentosaceus* plus 600,000 cfu/g *Lactobacillus buchneri* for a total of 750,000 cfu/g HMC.

Contains specific enzymes, flow enhancers, nutrients, stabilizers and indicator dye. This proprietary formula is preserved in U.S. Military specification foil packaging to ensure:

- ☑ Shelf life stability
- ☑ Optimum flow characteristics
- ☑ Easy dispersion in cold water
- ☑ Rapid activation of ingredients
- ☑ Viability following rehydration

## BENEFITS

- ☑ Rapid pH drop to stabilize forage
- ☑ Excellent nutrient retention
- ☑ Less heating
- ☑ Less waste
- ☑ Improved production efficiency from field to milk tank

## PACKAGE SIZES

Supplied in 275 g packages of water soluble concentrate to treat 50 tonnes of forage or haylage or 33 tonnes of high moisture corn or grains, respectively.

**GarantieBio-Ecocert Approved Formula Available**

For more information visit  
[www.biotol.com](http://www.biotol.com) • [www.QualitySilage.com](http://www.QualitySilage.com)

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**Approved by the CFIA**

Improves aerobic stability in ensiled high moisture shelled corn



# FORAGE INOCULANT

Registration #  
T982245  
Patent #  
5,432,074  
6,326,037



The Power Comes  
From Within.<sup>™</sup>  
DNA Fingerprinted for Purity

# FASTEST FERMENTATION



# REDUCED HEATING AND SPOILAGE



# MORE AVAILABLE HIGH QUALITY FEED

## DUAL POWER FORMULA

Biotal®Buchneri 500 combines the proven attributes of two elite lactic acid bacteria: *Pediococcus pentosaceus* 12455 and *Lactobacillus buchneri* 40788. This powerful combination gives you fast, efficient fermentation on the front end, and reduced heating and spoilage on the back end.

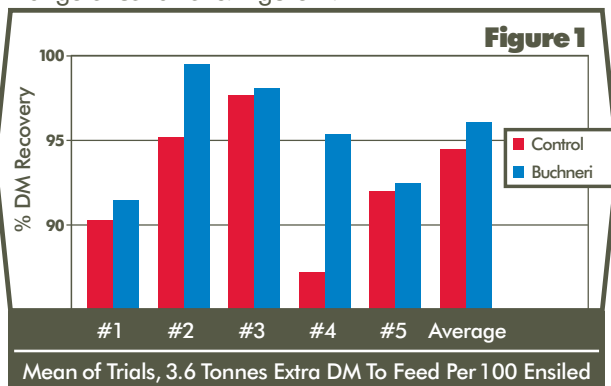
## THE POWER OF PEDIOCOCCUS

### PENTOSACEUS 12455: FASTEST pH DROP

Strain 12455 was specifically selected from thousands of isolates for:

- Fastest growth and pH drop
- Widest range of sugars utilized
- Growth over widest temperature range

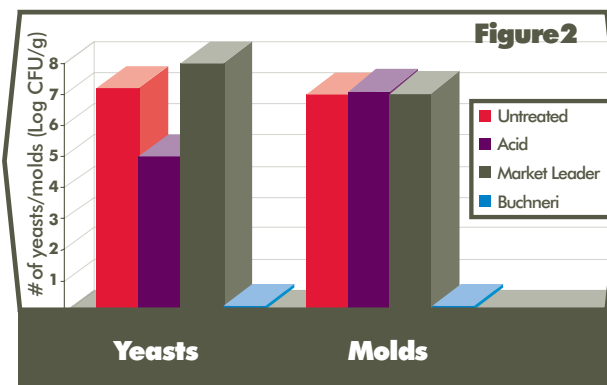
In independent trials, *Pediococcus pentosaceus* 12455 consistently produces faster, more efficient ensiling fermentations giving significant improvements in dry matter recovery over a wide range of conditions. Figure 1.



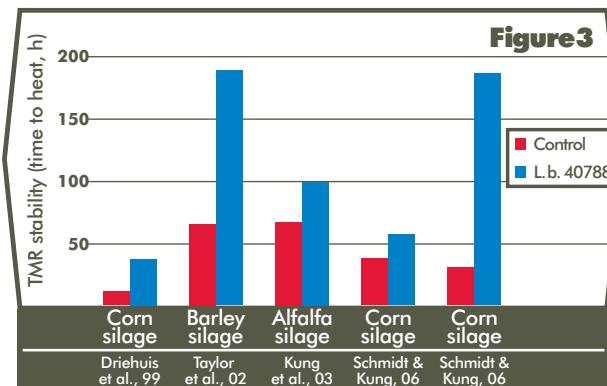
## THE POWER OF LACTOBACILLUS BUCHNERI 40788: REDUCED HEATING AND SPOILAGE

Strain 40788 was isolated and proven by world-leading forage scientists (ID-DLO, Holland and USDA DFRC) and has been FDA reviewed for efficacy in preventing heating and spoilage.

- Consistent reduction of yeast and mold spoilage (Figure 2)
- Less waste
- Increased dry matter retention – more forage to feed
- Better hygienic feed quality for improved stability at feedout



Treatment with strain 40788 also increases the stability of the TMR compared to those made with untreated silage or silage treated with buffered propionic acid. Data from trials at the University of Delaware are shown below in Figure 3.



## BIOTAL BUCHNERI 500: THE MOST POWERFUL TOOL AVAILABLE

Buchneri 500 helps make higher quality feed and more available to feed – Proven In Independent Trials!

### Trial 1.

Tough-to-ensile, high moisture (22% DM) forage. University of Florida

Parameter	Control	Buchneri 500
Time to get below pH 5.0	30 days	3 days
Final pH	4.08 <sup>a</sup>	3.50 <sup>b</sup>
Crude Protein (g/kg DM)	105 <sup>a</sup>	135 <sup>b</sup>
Ammonia (g/kg DM)	10.15 <sup>a</sup>	3.14 <sup>b</sup>
DOMD (g/kg DM)	326 <sup>a</sup>	409 <sup>b</sup>
Dry Matter Recovery (%)	86.7 <sup>a</sup>	96.9 <sup>b</sup>
Butyric Acid (g/kg DM)	23.1 <sup>a</sup>	0.0 <sup>b</sup>

Adesogan et al., 2004

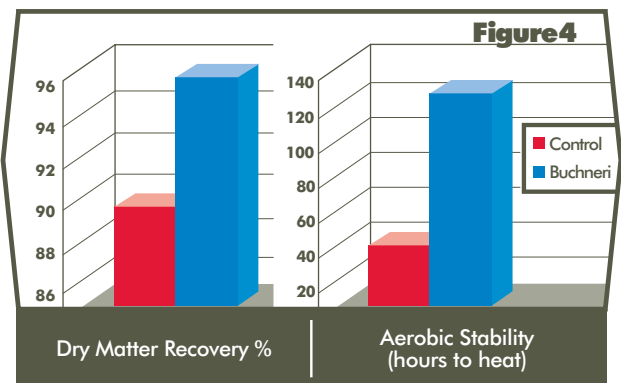
Numbers in the same row with different superscripts are statistically significantly different P<0.05

Biotal Buchneri 500 produced a faster pH drop and significantly better quality forage that was aerobically stable for 7 days.

### Trial 2.

Corn Silage University of Delaware

Biotal Buchneri 500 significantly improved both up-front dry matter retention and aerobic stability at feedout as shown in Figure 4.



FOR MAXIMUM NUTRIENT PRESERVATION DURING FERMENTATION AND AVAILABILITY OF MORE HIGH QUALITY FORAGE