MAGNIVA® TITANIUM

MAXIMIZES THE VALUE OF YOUR RATION WITH MORE STABLE, HIGH QUALITY AND PALATABLE SILAGES

DRIVE FERMENTATION	ENHANCE FEED DIGESTIBILITY	IMPROVE FEEDOUT STABILITY
+ + + + +	+ + + + +	+ + + + +

MAGNIVA® Titanium combines elite lactic acid bacteria with high activity enzymes to drive a fast, hygienic ensiling fermentation and improve feed digestibility. MAGNIVA Titanium also contains *Lactobacillus buchneri* NCIMB 40788 at high inclusion rate - the only silage inoculant reviewed by the FDA to allow claims for improved aerobic stabilty - for maximum feedout stability and minimum spoilage.

USED FOR

- High-moisture corn (HMC), earlage, snaplage
- Silages to be fed during warmer temperatures
- Crops exposed to challenging field conditions that can lead to yeast and mold growth
- Haylages over 35% dry-matter (DM) and baleages
- Corn silage above 32% DM
- Ensiled crops that will be transported or relocated

STRAINS	MAIN FEATURES	COLONY FORMING UNITS (CFU)
Pediococcus pentosaceus NCIMB 12455	Provides fast, efficient fermentation to maximize DM and nutrient recovery and inhibit bad fermentations due to clostridia, listeria, enterobacteria, etc.	100,000 CFU/g fresh forage 150,000 CFU/g HMC
Lactobacillus buchneri NCIMB 40788	Reduces heating and spoilage for improved feedout stability, maximizing high quality hygienic feed available.	400,000 CFU/g fresh forage 600,000 CFU/g HMC

ENZYMES	MAIN FEATURES	ACTIVITY
ß-glucanase (EC 3.2.1.6)	Drive and direct the ensiling fermentation and make fiber more available in the rumen.	1,215 units per gram
xylanase (EC 3.2.1.8)		3,456 units per gram

one unit = one mg sugar released/minute

PROVEN RESULTS

FASTER PH DROP: CONTROLS CLOSTRIDIA

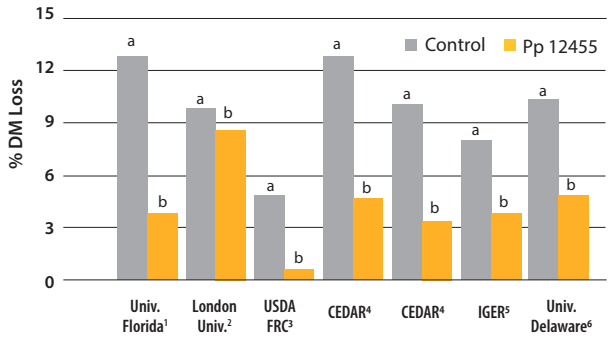
A fast pH drop (below pH 5) prevents the growth of clostridia and other spoilage bacteria. In trials at UF-Gainesville, 22% DM bermudagrass treated with MAGNIVA Titanium showed a faster pH drop, preventing the clostridial (butyric) fermentation that took over in the untreated haylage.[1]

PARAMETER	CONTROL	MAGNIVA TITANIUM
Time to get below pH 5.0	30 days	3 days
At opening (60 days)		
- pH	4.1[a]	3.5[b]
- Ammonia-N (g/kg DM)	10.2[a]	3.1[b]
- DOMD (% DM)	32.6[b]	40.9[a]
- DM recovery (%)	86.7[b]	96.9[a]
- Butyric acid (% DM)	2.3[a]	0.0[b]

[a, b] Numbers in the same row with different superscripts are statistically significantly different P<0.05.

INCREASES DRY MATTER RECOVERY

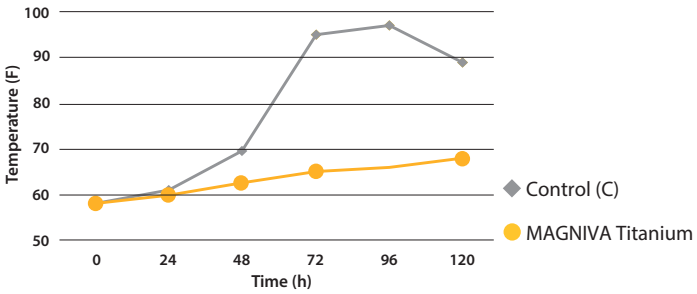
The enzyme driven *P. pentosaceus* NCIMB 12455 consistently produces a fast, efficient fermentation averaging an extra 4.2 tons of DM per 100 tons ensiled in the corn silage trials below.[1-6]



a,b - Statistically significant (P<0.05)

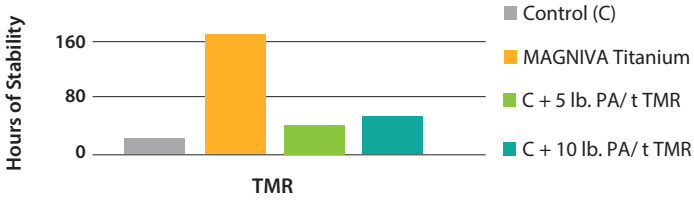
PREVENTS HEATING

In trials at UW-Madison, MAGNIVA Titanium reduced heating in HMC (27% moisture) compared to the untreated control.[7]



IMPROVES SILAGE AND TMR STABILITY

Research at the University of Delaware showed that treating corn silage with MAGNIVA Titanium improved aerobic stability in the silage and the TMRs (compared to TMRs treated with a propionic acid-based TMR teatment [PA]).[8]



SUPPORTS MILK PRODUCTION

In a feeding study at the University of Delaware, cows fed haylage treated with *L. buchneri* NCIMB 40788 produced 2.4 lb. more fat corrected milk (FCM) per day than cows fed untreated haylage.[9]

	CONTROL	TREATED
DMI, lb./d	55.3	56.0
Milk, lb./d	88.0[b]	89.7[a]
3.5% FCM, lb./d	85.8[d]	88.2[c]

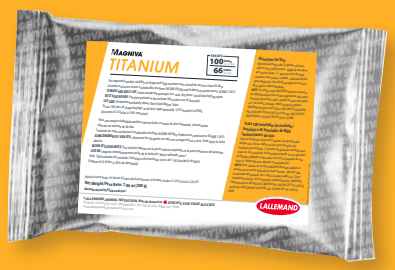
a, b Means in rows with unlike superscripts differ P≤0.05 c,d Means in rows with unlike superscripts differ P≤0.10

OUR GUARANTEE: WHAT IS ON THE LABEL IS INSIDE THE PACKAGE!

MAGNIVA Titanium Available Sizes

182 g pouch of water-soluble concentrate treats 100 tons of fresh forage or 66 tons (approximately 1,953 bushels) of HMC
907 g pouch of water-soluble concentrate treats 500 tons of fresh forage or 333 tons (approximately 9,852 bushels) of HMC

OMRI LISTED® formulation is available. Contact your Lallemand Animal Nutrition sales representative.



Always follow label directions: The use of any forage additive cannot be expected to overcome poor management. Proper storage and handling is important to forage inoculant performance. Products should be refrigerated, and the whole package should be used at one time. Visit www.QualitySilage.com for the latest information on silage management practices.

REFERENCES: TRIAL SUMMARIES AVAILABLE UPON REQUEST

[1] Adesogan et al. (2004), *J. Dairy Sci.* 87:3407-3416. (MVNAE011) [2] Leaver, J. Unpublished. University of London. (MVNAE015) [3] Muck, R. Unpublished. USDA Dairy Research Center. Madison, WI. (MVNAE016) [4] Phipps, R. Unpublished. Centre for Dairy Research, Reading, UK (MVNAE015)
[5] Scollan, N. Unpublished. IGER, Aberystwyth, UK. (MVNAE020) [6] Kung, L. et. al. Unpublished. University of Delaware (MVNAE017) [7] Stimson, C. & Hoffman, P. Unpublished data, University of Wisconsin, Madison. [8] Scmidt, R. & Kung, L., Unpublished Data. University of Delaware [9] Kung, L. et. al. (2007) J. Dairy Sci. 90: 2309-2314 (MVNAE039).

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