

Does *Buchneri* 40788 Have a Negative Effect on Dry Matter Recovery?

Research conducted with *Lactobacillus buchneri* 40788 has shown that the loss of dry matter in the silo during fermentation/storage is virtually the same as in untreated silage. In 26 published trials comparing untreated and buchneri-treated forages, dry matter loss was minimal even at very high levels for buchneri addition (see Figure 1 below). However, the potential for sparing greater spoilage losses during storage and feedout outweighs the small losses that might be incurred as a result of the fermentation. Typically, total DM losses from aerobic losses can be as high as 25% compared to about 4% from fermentation losses (Zimmer et al., The Biochemistry of Silage).

Figure 1. Published effects of *L. buchneri* on fermentation and aerobic stability of corn silage - A meta-analysis.

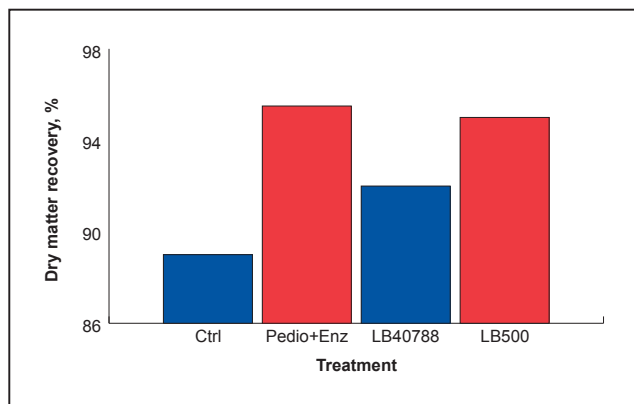
Item	Control	LB1*	LB2**
Lactate, %	6.6 ^d	5.9 ^e	4.8 ^f
Acetate, %	2.2 ^c	2.6 ^b	3.9 ^a
DM recovery, %	95.5 ^a	95.5 ^a	94.5 ^b
Aerobic stability, h	25 ^b	35 ^b	503 ^a

Kleinschmit, D.H., and L. Kung, Jr. 2006. *A meta-analysis of the effects of Lactobacillus buchneri on the fermentation and aerobic stability of corn and grass and small-grain silages.* J. Dairy Sci. 89:4005-4013.

*LB1 ≤ 100,000 cfu/g, **LB2 ≥ 100,000 cfu/g, ^{def}means in a row with unlike superscript differ P < 0.10, ^{abc}Means in a row with unlike superscript differ P < 0.05

L. buchneri 40788 does not strongly contribute to the ensiling fermentation, which is why we developed the combination product (Crop-N-Rich Stage 2) with the homolactic bacterium *Pediococcus pentosaceus* 12455. Stage 2 combines the fast and efficient homolactic fermentation with the world-leading aerobic stability of *L. buchneri* 40788. In a trial done on corn silage at the University of Delaware, (personal communication) combining the upfront *Pediococcus* strain (100,000 cfu/g forage) with *L. buchneri* 40788 (400,000 cfu/g forage) gave dry matter recoveries similar to *Pediococcus* alone (100,000 cfu/g forage), and better than silage treated with *L. buchneri* 40788 alone (400,000 cfu/g forage). By combining the power of two, Crop-N-Rich Stage 2 will protect your forages during the upfront fermentation and through improved aerobic stability in the silo and at feedout.

Figure 2. Difference in dry matter recovery between *L. buchneri* and other inoculants.



Ctrl = Control, Pedio+Enz = *Pediococcus pentosaceus* at 100,000 cfu/g forage, LB40788 = *L. buchneri* 40788 at 400,000 cfu/g forage, LB500 = Crop-N-Rich Stage 2 with *P. pentosaceus* at 100,000 cfu/g forage and *L. buchneri* at 400,000 cfu/g forage

