

Inoc-U-Lock™ Provides Significant Returns To Livestock Producers



By Dan Leiterman

Properly inoculating livestock feedstuffs with Inoc-U-Lock™ can provide many benefits to the producer. Benefits include reduced dry matter loss during storage, reduced nutrient loss (protein, energy) during storage, improved aerobic stability for less mold and yeast growth on storage face and a reduced risk of heating in the bunk. Inoc-U-Lock™

also supports higher dry matter intake, improved production and stronger profitability; all key reasons why so many producers are using Inoc-U-Lock™.

Since my article in the April 2015 Crystal Creek® Newsletter (Introducing Crystal Creek's Inoc-U-Lock™ Buchneri), we have had a number of questions about the detailed economics of using Inoc-U-Lock™ in both organic and non-organic dairy operations. Consequently, I thought it would be helpful to write a follow-up article demonstrating the significant economic advantages Inoc-U-Lock™ can provide.

The charts on pages 2-3 show an economic evaluation of Inoc-U-Lock™ using only two key categories of performance: reduced dry matter loss and reduced protein loss. In the first example, a non-organic 50 cow herd using Inoc-U-Lock™ has a return-on-investment (ROI) of approximately 3:1 resulting in a profit increase of at least \$3,382.00. In the 50 cow organic herd, the ROI is at least 9:1 resulting in over \$10,256.00 additional profit.

Inoc-U-Lock™ offers exceptional performance at a great value. Protect your hard work, investment and bottom-line by applying Inoc-U-Lock™ to your feedstuffs.



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Cost To Treat With Inoc-U-Lock™

Figure 1

This chart estimates the cost to treat feedstuffs needed to feed 50 lactating cows.

Typical Lactating Dairy Ration (50 cows/year):

Ingredients	As Fed (lbs.)	DM (lbs.)	Tons/Yr.	\$/Ton	\$/Yr.
corn silage	30	10	274	0.65	178.10
haylage	50	22.5	456	1.30	592.80
hmsc	20	15	183	1.95	356.85
protein	2	1.8			
mineral	0.5	0.5			
salt	0.2	0.2			0.00
Total	102.7	50.0	913		\$ 1,127.75

Return-On-Investment (ROI) For 4% Reduced DM Loss

Figure 2

This chart shows the return-on-investment for reducing dry matter loss by 4%. Typically forages and high moisture grains left to uncontrolled/wild fermentation could experience a dry matter loss ranging from 12 to 30%. Calculating a 4% reduction in dry matter loss when Inoc-U-Lock™ is applied is a conservative estimate and supported by independent research.¹

Ingredient	Tons/Yr.	Conv. Value/Ton	Total (conv.)	Org. Value/Ton	Total (org.)
corn silage	274	\$ 35.00	\$ 9,590.00	\$ 55.00	15,070.00
haylage	456	70.00	31,920.00	\$ 110.00	50,160.00
hmsc	183/156* dry sh.corn	3.50/bu.*	19,500.00	\$ 14.00	78,000.00
		Pre-Loss Value	\$ 61,010.00		\$ 143,230.00
		Less 4% Loss	x 0.04		x 0.04
		Lost Value	\$ 2,440.40		\$ 5,729.20

Conventional: \$ 2,440.40 / \$ 1,127.75 = **2.16:1** ROI = \$ 1,312.65/50 cows/yr.

Organic: \$ 5,729.20 / \$ 1,127.75 = **5.08:1** ROI = \$ 4,601.45/50 cows/yr.

* HMSC tonnage adjusted to dry shell corn equivalent, and then valued at \$ 3.50/bu. for dry shell corn.

ROI For Reduced Protein Loss (1% Point)

Figure 3

This example calculates the value/return-on-investment to reduce protein loss/degradation by 1% relative to the cost of 46% soybean meal or roasted soybeans.

One point of protein loss, i.e. from a 20% CP down to a 19% CP haylage*
 2,000 lbs. x 45% = 900 lbs. DM x 20% = 180 lbs. CP /ton of haylage

2,000 lbs. x 45% = 900 lbs. DM x 19% = 171 lbs. CP/ton of haylage
 9 lbs. CP / .46 = 19.56 lbs. of 46% sbm equivalent lost per ton of haylage

* A 1% point loss of CP equates to a 5% loss of CP (1/20 = 5%)

ROI For Reduced Protein Loss Of 1% Point (continued)

Figure 4

This example calculates the value/return-on-investment to reduce protein loss/ degradation by 1% relative to the cost of 46% soybean meal or roasted soybeans.

<u>Protein Type</u>	<u>Conventional (non-organic) Prices</u>
46% sbm (\$464/t)	19.56 lbs. @ 0.232/lb. = \$ 4.54/ton x 456 tons of haylage = \$ 2,070.24
38% RSB (\$480/t)	23.68 lbs. @ 0.24/lb. = \$ 5.68/ton x 456 tons of haylage = \$ 2,590.08
	<u>Organic Prices</u>
46% sbm (\$1,268/t)	19.56 lbs. @ 0.634/lb. = \$12.40/ton x 456 tons of haylage = \$ 5,654.40
38% RSB (\$1,410/t)	23.68 lbs. @ 0.705/lb. = \$16.69/ton x 456 tons of haylage = \$ 7,610.64

ROI Summary For Using Inoc-U-Lock™

Figure 5

This example calculates the value/return-on-investment for both reduced dry matter loss and reduced protein loss. Note that no estimated value has been applied to other economic benefits such as, improved dry matter intake and/or the corresponding improvement of milk or meat production.

(Based On Saving 4% DM & 1% Pt. Protein Estimates On Previous Charts)

<u>Category</u>	<u>4% DM</u>	<u>1% Pt. Protein</u>	<u>Total \$ Value</u>	<u>ROI</u>
Non-Organic:				
46% sbm	\$ 1,312.65	\$ 2,070.24	\$ 3,382.89	3.0 : 1
38% RSB	\$ 1,312.65	\$ 2,590.08	\$ 3,902.73	3.46 : 1
Organic:				
46% sbm	\$ 4,601.45	\$ 5,654.87	\$ 10,256.32	9.1 : 1
38% RSB	\$ 4,601.45	\$ 7,610.64	\$ 12,212.09	10.83 : 1

¹ Iger, 1994, 1995



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INOC-U-LOCK™

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Application Rates And Treatment Cost/Ton For Inoc-U-Lock™ Products

INOC-U-LOCK™ BUCHNERI		
Crop	Corn & Sorghum Silage	High Moisture Corn
350 gram Foil Packet	Treats 200 tons	Treats 100 tons
INOC-U-LOCK™ Bacteria CFUs Per Gram Of Crop	100,000 CFUs/gram	200,000 CFUs/gram
PLUS L. Buchneri Bacteria	PLUS 100,000 CFUs/gram	PLUS 200,000 CFUs/gram
Treatment Cost/Ton	\$1.40/ton	\$2.80/ton

INOC-U-LOCK™ WS (Water Soluble)			
Crop	Corn & Sorghum Silage	Grass or Legume Haylage & Small Grain Silage	High Moisture Corn
350 gram Jar	Treats 200 tons	Treats 100 tons	Treats 66 tons
Bacteria CFUs Per Gram Of Crop	100,000 CFUs/gram	200,000 CFUs/gram	300,000 CFUs/gram
Treatment Cost/Ton	\$0.65	\$1.30	\$1.95

INOC-U-LOCK™ BH (For Baled Hay)			
Tons Per Jar	20 tons	13 tons	10 tons
Grams Per Ton of Baled Hay	20 gm	30 gm	40 gm
% Moisture of Baled Hay	<18%	18-20%	20-22%
Bacteria CFUs Per Gram Of Baled Hay	210,000 CFUs/gram	315,000 CFUs/gram	420,000 CFUs/gram
Treatment Cost/Ton	\$4.10	\$6.30	\$8.20

INOC-U-LOCK™ DRY			
Crop	Corn & Sorghum Silage	Grass or Legume Haylage & Small Grain Silage	High Moisture Corn
25 lb. Bag	Treats 100 tons	Treats 50 tons	Treats 33.3 tons
Bacteria CFUs Per Gram Of Crop	100,000 CFUs/gram	200,000 CFUs/gram	300,000 CFUs/gram
Treatment Cost/Ton	\$0.65	\$1.30	\$1.95