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OFFICE
940.683.8123
FAX
940.683.8133
TOLL FREE
1.800.687.6455

www.ProtocolNaturals.net



Dairy Field Studies

Matrix 150 Day Dairy Study

- Aukeman Dairy, Shafter, CA - 2017/2018
- Matrix was fed to 2,800 lactating Holsteins at 1oz/hd/d for 150 days
- Ration consisted of corn silage, alfalfa hay, wheat straw, WCS, canola meal, CG feed, rolled corn, distillers dried grains, wheat millrun, almond hulls, wet brewers grains, wet citrus pulp, vit/min pack, Rumensin, and Matrix
- Weather was typical for the Bakersfield, CA area throughout the trial
- At a cost of 15 cents per head daily and a milk price of \$14.5 per cwt, addition of Matrix resulted in a **ROI of 5.5 to 1 based on increased yield alone**

PARAMETER	DAY 0	DAY 150	NET CHANGE	% CHANGE
<i>Herd FCM, lbs</i>	73.3	79.0	+5.7	+7.8
<i>Days in milk, DIM</i>	160	185	+25	+15.6
<i>Stnd 150d FCM, lbs</i>	75.0	86.5	+11.5	+15.3
<i>Milkfat, lbs</i>	2.81	2.88	+0.07	+2.5
<i>Protein, lbs</i>	2.53	2.60	+0.07	+2.8
<i>Peak milk cows, lbs</i>	91.0	101.0	+10.0	+11.0
<i>Peak milk 1st calf, lbs</i>	74.0	77.0	+3.0	+4.1
<i>SCC, 1000</i>	110	83	-27	-24.5

Matrix 10X 120 Day Dairy Study

- Osterkamp Dairy, Hereford, Texas - Summer 2017
- Matrix 10X was fed to 2,800 Holstein cows at 3g/hd/d and replaced both Diamond-V® XP Yeast and Nova-Cell®
- Ration consisted of corn silage, wheat silage, WCS, canola meal, CG feed, GR corn, SF corn, minerals, Megalac, buffer, Rumensin, One Trak and Matrix 10X
- At an average daily cost of 15 cents per head and a milk price of \$15 per cwt, addition of Matrix 10X resulted in a ROI of a 4:1 based on increased milk yield alone
- When taking into account the replacement of the other additives with Matrix 10X, the resulting ROI is over 8:1
- Additional economic value was also derived from a downward trend in the incidence of abortions

PARAMETER	DAY 0	DAY 120	NET CHANGE	% CHANGE
<i>Herd FCM, lbs</i>	79.0	83.0	+4.0	+5.1
<i>Stnd 150d FCM, lbs</i>	81.4	85.6	+4.2	+5.2
<i>% Milkfat</i>	3.28	3.61	+0.33	+10.0
<i>% Protein</i>	2.97	3.19	+0.22	+7.4
<i>FCM 1st test cows, lbs</i>	94.0	100.0	+6.0	+6.4
<i>FCM 1st test 1st calf, lbs</i>	70.0	82.0	+12.0	+17.1
<i>SCC, 1000</i>	216	205	-11	-5.1
<i>Daily DMI, lbs</i>	53	55	+2	+3.8
<i>Gross Effic, lbs FCM/lbs DMI</i>	1.49	1.51	+0.02	+1.3

Matrix 30 Day Wisconsin Dairy Study

- 63 head of high producing Holstein cows were fed 30 grams of Matrix for one month (April 13 – May 13)
- The on-farm study was administered and supervised by Mr. Vern Metcalf of Land O'Lakes Purina Feed
- Milk yield was monitored daily via Dairy Comp 305 dairy software
- Based on the cost of Matrix and the value of both milk and milkfat in the U.S. currently, the economic return of Matrix in this study equated to over a 4 to 1 return on investment

After 30 days on Matrix, the results were as follows:

PARAMETER	PRE-MATRIX	POST-MATRIX	NET CHANGE
<i>Milk Yield lbs All Cows</i>	83.6	86.9	+3.3
<i>Peak Milk lbs All Cows</i>	98.7	105.3	+6.6
<i>% Cows >100 lbs Milk</i>	21.7	25.4	+3.7
<i>% Milk Fat All Cows</i>	4.05	4.14	+0.09
<i>% Milk Protein All Cows</i>	3.20	3.18	-.02

Matrix 6 Month Dairy Study

- Creekside Dairy, Escalon, CA
- 500 head of high producing Holstein cows were tested over 6mos
- Cows were housed in adjacent pens in freestall barns with 125 cows per pen
- All cows received the same diet for the duration of the trial
- Treatment groups received an additional 1oz of Matrix blended in a TMR daily
- Data was averaged across 17 weeks with a 60 day pre-test period used as a covariate to adjust for treatment response
- All milk yield data is reported as 150 day standardized milk yield to adjust for DIM

MEASUREMENT	MATRIX	CONTROL	NET CHANGE	% CHANGE
<i>Milk Yield, lbs</i>	102.3 ^a	94.1 ^b	+ 8.2	+8.7
<i>DMI, lbs</i>	65.8 ^c	63.6 ^d	+ 2.2	+3.5
<i>Gross Efficiency (M/DMI)</i>	1.55	1.48	+ .07	+4.7
	20 cents	-		
<i>ROI*</i>			7.9 to 1	

a,b - means with different superscripts are significantly different at P<.03

c,d - means with different superscripts are significantly different at P<.07

*ROI based on \$25 cwt milk and feed cost of 12.5 cents per lb DM

Note: MATRIX[®] is an All-Natural feed additive developed from 30 years of research and is comprised primarily of natural vasodilators and host-specific beneficial bacterial strains developed and manufactured by Protocol Naturals, Inc.

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