

SUMMARY REPORT ON KOEPKE DAIRY FARM IMPACT OF PRIORITY ONE ON HERD PERFORMANCE

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On May 24th, Bill Younk, Technical Support, Priority IAC, Inc. sent a summary of two years of data from the Koepke Farm in Wisconsin. While I have not visited the farm, it is recognized as one of the top dairy farms and management teams in the state. In 2003, no additive was fed and therefore served as control data. In 2004, the P-One Program was supplemented according to company guidelines (referred to as the experimental data). This approach represents an on-farm demonstration because the herd could not be split allowing a portion of the herd to serve as a control to remove environmental, feed, and management changes. Two important factors must be mentioned that impacted the data:

1. BST use was limited due to Monsanto policy (75% less) in 2004
2. Poor quality corn silage from 2003 growing year (excessively dry conditions reduced quality in the 2004 data)

Based on the data and observations (Table 1), I calculated the economic impact of the feed additive (P-One Program) on the health and production in the Koepke herd. Metabolic health losses (dollars per case) were based on Cornell data (Dr. Chuck Guard). Economic milk changes were based on a net cost of \$10.00 per cwt (removed feed cost and other variable costs associated with more or less milk).

Part One Health Impact

Based on the change from 2003 to 2004 of the reported cases of each metabolic disorder and using the Cornell data, the economic advantage to the additive was \$12,780.00 on 320 milking cows.

16 fewer cases of retained placenta	x	\$285	=	\$4,560
7 fewer cases of displaced abomasums	x	\$340	=	\$2,380
2 fewer cases of milk fever	x	\$334	=	\$668
18 fewer cases of ketosis	x	\$145	=	\$2,610
21 fewer lame cows (hairy heel warts)	x	\$122	=	\$2,562

Bottom line transition cow economics: + \$12,780 improvement

I also evaluated the rate of metabolic disorders in the herd from Table 1 (percent of cows affected) comparing 2003 (control) to 2004 (supplemented) to determine the change. The metabolic rates in the Koepke herd were normal in 2003 with all industry standards and reduced in 2004 with the addition of the P-One Program. The change in milk fever was not significant.

Table 1. Summary data from the Koepke Dairy Farm.

Koepke Farms, Inc.	Pre-treatment 2003 Average	P-One Treatment 2004 Average	Change
Total cows in herd	317	326	8
No. cows milking	273	280	7
Tank Ave lbs./cow	98	**93	5
Days in milk	196	180	-16
Vet bill \$/month	\$1,390	\$1,113	-26%
Medicine expense/month	\$1,228	\$1,032	-22%
# Cows sold, dairy	27	16	-40%
# Cows culled	91	87	-4.4%
# Cows died	17	14	-18%
% Preg. Rate	31%	42%	34%
% 1st service conception	43%	42%	-4%
% Open 150 days	36%	16%	-56%
Average days open	137	125	12%
# Cows calved	338	345	2%
# Retained placenta	30	14	53%
# DAs	23	16	30%
# Milk fevers	10	8	20%
# Ketosis	28	10	64%

**75% less BST, 2004 & poor corn silage from 2003 crop

Part Two Animal Inventory Changes

Changes in dairy cow numbers in the herd are listed below with economic values attached. Readers can adjust the number to reflect locally relevant values. Dairy cows were priced at \$2000, culled cows at \$500, and dead cows at the replacement value of \$2000.

The yearly turnover rate decreased from 45% in 2003 to 36% in 2004

There were 11 less cows sold for dairy and 4 less cows culled allowing the dairy to grow internally by 8 cows. Therefore the loss of cull cow sales is offset by internal herd growth and 3 less dead cows for the year with a limited impact on the feed additive and no significant changes.

4 fewer culled cows times (\$2000 value - \$500 salvage times 4 cows) = +\$6000

Bottom line cull cow economics: + \$6,000 improvement

Part Three Health and Veterinary Charges

Total health charges were significantly reduced by \$8,308 based on the monthly veterinary bill and purchased products:

Lower veterinary bill + \$ 4,719

Lower purchased medicine + \$ 3,589

Bottom line health economics: + \$ 8,308 improvement

Part Four Milk Production Changes and Value

This area is very difficult to economically evaluate due to BST and corn silage changes. I have evaluated this aspect using two methods:

Method One: Lower milk yield (using the reported data)

Cows produced 5.16 lb less milk per day x 280 milk cows x 365 days = 5273 cwt (527,352 lb) times \$10.00 per cwt net cost = (\$52,740) less milk income

Method Two: Impact of BST using assumed values.

Since 75% less BST was used and the response to BST is an increase of 10 lb per cow per day (range is 8 to 12 lb based on literature) and 66% of the cows injected for 250 days (starting week six to seven after calving); the calculated lowered milk yield per cow per day was 4.95 lb per cow per day (10 lb of BST milk times 0.66 (66% of the cow) equals 6.6 lb times 0.75 (75% less BST) equals 4.95 lb less milk per cow per day based on lowered BST use. This loss is nearly equal to the loss using Method One.

In summary, no milk loss was attributed to the feed additive. The feed additive may have stimulated milk or maintain milk yield that occurred when BST availability was came limited and poor quality corn silage as fed.

Bottom line milk production economics: No documented changes

Part Five Reproduction Improvement

Another positive aspect in the Koepke herd was a reduction in average days open from 137 days in 2003 compared to 125 days in 2004. Using a conservative bench mark value of \$2.00 added value for each day, the economic value is \$7824 (\$2 per day x 12 days x 326 cows). Other reproductive trends included lower services per conception (2.4 for 2003 compared to 2.3 in 2004), fewer cows with > 3 services (37% in 2003 vs. 17% in 2004), and shorter calving interval (13.9 months in 2003 vs. 13.3 months in 2004).

Bottom line reproductive economics: + \$7,824

In Summary

After reviewing the data, I concluded that the Koepke Dairy on-farm demonstration achieved significant savings due to lower health costs, shift in cow inventory, and few metabolic disorders. Limiting BST and corn silage program reduced milk yield. Improvement in reproduction was based on improvement in average days open.

Bottom line transition economics: + \$12,780 improvement
Bottom line health economics: + \$8,308 improvement
Bottom line cow inventory economics: + \$6,000 improvement
Bottom line reproduction economics: + \$7,824 improvement

The economic impact of + \$34,912 was achieved in the Koepke herd of 326 cows or \$107.00 per cow in 2004.