Managing With $12 Milk

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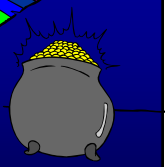
How Will You Look at the Current Situation?

Glass 1/2 Full
Glass 1/2 Empty

Finding $200



If the price of milk declines $1.00 per cwt and Holstein cows average 20,000 lb milk annually, ….

Changing Milk Values

	2005	2004	2003
Milk fat (lb)	1.71	2.05	1.21
Milk protein (lb)	2.46	2.60	2.24
Milk (cwt)	14.47	15.06	11.40

OUCH! $10-$11-$12 MILK

Point 1: Good cows convert DM to $$$

Point 2: Watch components for added $$$

Point 3: Milk quality bonuses make $$$

Point 4: Are you in for the long run?

Point 5: Control the $$$ items

The U of IL Components

- Milk fat percent at 4.0% fat compared to 3.7% fat:
  - 0.3 percent unit x 100 lb milk = 0.3 lb fat
  - 0.3 lb fat x $1.89 / lb = + $0.56 per cwt
- Milk protein percent at 3.3% compared to 3.0 true protein:
  - 0.3 percent unit x 100 lb = 0.3 lb protein
  - 0.3 lb protein x $2.30 / lb = $0.69 per cwt
- Bottom line: $1.25 more per cwt

Normal Milk Fat and True Milk Protein Relationships (Aug, 2005, Hoard's Dairyman)

	Fat %	Protein %	Protein vs Fat	Fat vs Protein
Ayrshire	3.76	3.10	82%	1.21
Brown Swiss	3.96	3.26	82%	1.21
Guernsey	4.46	3.29	74%	1.36
Holstein	3.69	3.00	81%	1.23
Jersey	4.57	3.54	78%	1.29

Looking at Your Herd

- First lactation vs. second lactation vs. older cows (lactation impact)
  - Impact of feed intake
- Evaluate days in milk
  - Under 40 days reflect ketosis
  - 40 to 100 days reflects nutrient intake
  - > 200 days reflect herd potential
- Look at summer heat stress
  - Less 0.2% fat drop, less than 0.1 protein
- Compare over the last three years
  - Trends and impact of milk yield

Economics of Energy

- Dry matter intake vs milk price
  - 2 pounds of milk per pound of DMI
  - 22 to 25 cents income with 6 to 7 cents cost
- Comparison of forages vs grain
  - Corn silage at $20/t = 4 cent per Mcal
  - Corn grain at $2/bu = 4.7 cent per Mcal
- Cost of starch vs fat
  - Corn grain at $2/bu = 4.7 cent per Mcal
  - Fat at 26 cents/lb = 10 cents per Mcal

Unique Problems in 2006

- Expensive alfalfa hay last year
- Modest grain prices
- Drought stressed corn silage
  - Harder corn kernels
  - Lower yields

Feeding Competitively

	lbDM	$/ lb DM	$ / day
Forages	26	.04	1.04
Corn	10	.04	0.40
Fiber/fuzzy	5	.07	0.35
Protein	4	.10	0.40
Minerals	1	.35	0.35
Additives			0.10
Consulting			0.10
Total	46		2.74

Feeding Economics

- Feed costs per cow per day $2.74
- Feed cost per lb DM $0.06
- Feed cost per cwt (65 lb) $4.22
- Income over feed costs ($14) $9.78
- Feed efficiency (lb milk/lb DM) 1.41

2006 Illinois IL Focus Group

DMI (lb)	Milk (lb 3.5)	Feed Costs ($/day)	Feed Costs ($/cwt)	Feed Costs ($/lb DM)	FE (lb/lb)
55	80	3.13	4.31	0.057	1.45
54	92	4.19	4.66	0.077	1.69
53	86	3.56	4.12	0.068	1.66
50	76	3.31	4.38	0.088	1.52
53	97	3.47	3.54	0.066	1.87
52	84	3.60	3.82	0.062	1.62
53	72	3.49	4.84	0.071	1.47
56	95	4.34	4.59	0.077	1.69
52	75	3.33	4.63	0.063	1.43

Economics of Feed Efficiency

"13 Pound Tax"

- Maintenance for a Holstein cows requires 10 Mcal per day or 13 lb DM
- Subtract 13 from total DMI estimates remaining nutrients
- Multiply the remaining DM by 2 to estimate milk yield potential

Example: 53 lb DM -13 lb DM tax = 40 lb DM x 2 lb milk/lb DM = 80 lb milk

Dairy Efficiency

Dairy Efficiency: Pounds of fat corrected milk divided by pounds of DM *consumed*

High group, mature cows	> 1.7
High group, 1st lactation	> 1.6
One group TMR herds	> 1.5
Fresh cows (< 21 days)	< 1.3
Concern (one group TMR)	< 1.3

Example: 75 lb milk / 50 lb DMI = 1.5

3.5% FCM = (0.4324 x lb of milk) + (16.216 x pounds of milk fat)

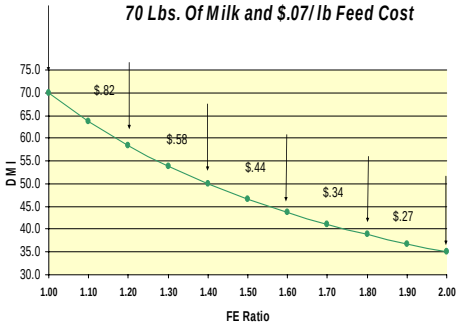
Component Corrected Milk Formulas

3.5% FCM (lb) = (0.432 x lb of milk) + (16.22 x pounds of milk fat)

ECM (lb) = (0.323 x lb of milk) + (12.82 x lb of milk fat) + (7.13 x lb of true protein)

Feed Efficiency

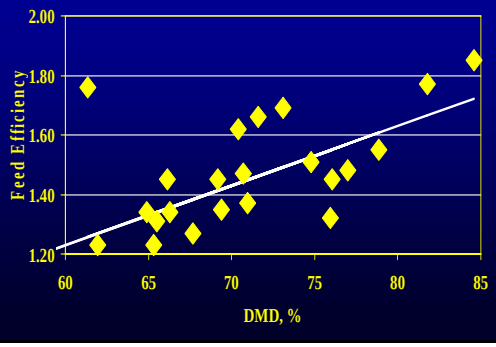
70 Lbs. Of Milk and $.07/lb Feed Cost



The difference between a 1.2 FER and a 1.4 FER, results in a 58 cent savings in feed costs per head per day.

Key Dairy Program

Feed Efficiency and dry matter digestibility (DMD)



Forage NDFD

- Represents the digestibility of the cell wall of your forage (NDF or neutral detergent fiber)
- Measure the percent degraded during 12, 24, 30 (normal rumen time) or 48 hrs (maximum digestion).
- Difference between 30 and 48 hr is 5 units
- As NDFD declines, increase in lignin, lower energy value, and lower feed intake / rate of passage
- Cows may need an optimal amount of lignin (3.0 to 3.5 percent)—the straw effect

A Look at a Wisconsin Herd

Group	DIM (day)	Milk (lb)	DMI Feed (lb)	IOFC ($)	DE ($)	(lb /lb)
1st fresh	27	42	44	3.06	1.98	0.95
1st high	124	79	50	3.15	6.33	1.58
1st PG	225	64	53	2.67	5.01	1.21
2nd fresh	20	60	52	3.63	3.57	1.15
2nd high	80	101	58	3.65	8.47	1.74
2nd PG	276	67	51	2.85	5.19	1.31

Energy Feed Buys

Corn ($/bu)	$2.00	$2.50
	-----$/t ------	
Corn gluten	89	103
Fuzzy cotton	171	177
Hominy	84	100
Soy hulls	60	78
Wheat midds	83	97

Protein Feed Buys

SBM-44% ($/t)	200	250
	------$/t------	
Blood meal	617	824
Corn distillers	201	239
Pork Meat and bone	569	698
Heated SB	301	363

Feeding Mistakes

1st Remove fat/oil

2nd Remove feed additives

3rd Stop purchasing quality hay

4th Stop purchasing bulk commodities

5th Drop the feed consultant

6th Skip the silage inoculant

Additives

- **Yeast culture (10 to 120 grams)** **YES**
- **Propylene glycol (300 to 500 ml)** **YES**
- **Calcium propionate (1/3 lb)** **YES**
- **Anionic products (- 50meq/kg)** **AS NEEDED**
- **Protected choline (15 grams)** **AS NEEDED**
- **Direct feed microbes** **WATCH LIST**
- **Niacin (protected)** **AS NEEDED**
- **Rumensin** **YES**

Energy "Shut Down" Signs to Watch for

- Excessive weight loss in early lactation
- Poor reproductive performance
- High milk fat test in early lactation
- Low milk components (fat and protein)
- Poor milk persistency
- Ketosis over 2%
- Lack of BST response

Points to Ponder

- Cows do not know the Class III prices
- Nutrients requirements do not change if the price of milk or feed changes
- Feed is modest in price
- If you in for the long haul do not jeopardize:
  - Thin cows
  - Health aspects
  - Reproductive performance

Managing Profit Margins

The Big Ten (11 Points)

- Control feed costs: 25 cent savings per cwt = $50 per cow
- Increase milk components: 0.1 point protein increase = $27 per cow
- Increase peak milk: 1 lb = $18 per cow
- Lower somatic cell count: 1 linear = $86 per cow
- Lower age at first calving: 1 month = $30 per heifer

The Big Ten (11 Points)

- Increasing size of heifers at 1st calving: 600 lb milk / 100 lb = $54 per heifer
- Lower culling rate: 1 percent point = $1200 per herd
- Decrease average days in milk: 1 day = $8 per cow per year
- Sire ID: 1 percent = 80 cents per cow
- Sire selection: 1 Net merit point = $1 per cow per year
- BST: 35 cents per treated cow per day

Bottomline Economics
(80 cows, 20,000 lb RHA)

• Feed costs (25 cents/day)	$4000
• Higher fat test (0.2 point)	$3600
• Drop one linear SCC score	$6880
• Two lb increase peak milk	$1460
• Lower heifer age 1 month (30)	$ 900
• 100 lb bigger heifers (30)	$1620

Bottomline Economics
(80 cows, 20,000 lb RHA)

• Culling drop 5% (4 heifers sold)	$4800
• Lower DIM by 5 days	$3200
• Sire ID up 5%	$ 320
• Sire selection up 5 NM$	$ 400
• Use of BST (200 days / cow)	$5600

Feeding Tips and Strategies

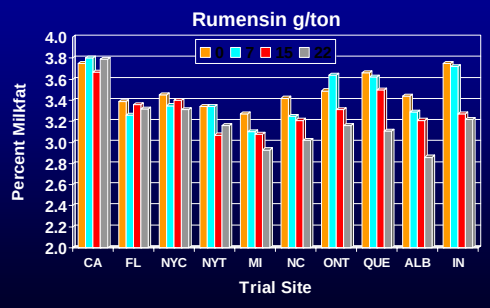
Rumensin and Feed Efficiency

Rumensin level	0	11g/t	15 g/t	22g/t
Dry matter intake (lb)	43.9	43.4	42.8	42.3
Milk yield (lb)	65.0	66.7	66.8	67.5
Milk fat (%)	3.65	3.53	3.49	3.38
Protein (%)	3.15	3.13	3.13	3.10
3.5% FCM (lb)	66.1	66.8	66.7	66.0
Feed eff (lb / lb)	1.50	1.54	1.56	1.56
Improvement (%)	----	2.0	2.5	4.0

Illinois Experience
(about 1/3 herds reported drops)

- If Holstein herd milk fat test was > 3.7, we did not see drops in milk fat test
- If Holstein milk fat test was 3.5 to 3.6, a mixed response to milk fat test response occurred
- If Holstein test was < 3.5, probably see a drop of 0.2 to 0.4 milk fat test
- Jersey herds: we saw increases in test to large drops (0.5 percentage points)

Effect of Rumensin Dose on Milk Fat Percent by Trial Site



N.A. Rumensin Dairy 9-trials, cows >100 DIM

Interpreting MUN Values

- For Prairie Farms bulk tank daily samples, consider weekly or monthly changes (+ / - 2 to 3 MUN points)
- For DHI, look at groups of cows (8 to 10 cows)
  - By lactation number
  - By level of milk production
  - By days in milk
- DHI and milk plant values may not be similar (different labs and equations)

Getting Forage DM Right!

Silage Storage System	Percent DM
• Bunkers and bags—corn silage	30 to 35%
• Bunkers and bags—alfalfa-grass	35 to 45%
• Baglage	40 to 50%
• Conventional upright—corn silage	33 to 38%
• Conventional upright—legume/grass	45 to 55%
• Oxygen limiting unit—legume/grass	50 to 60%

Recommended Fermentation Profile for Ensiled Feeds

Measurement	Legume/grass	Corn Silage	H.M. Corn
Dry matter (%)	35 to 50	35 to 40	70 to 75
pH	4.3 to 4.7	3.8 to 4.2	4.0 to 4.5
Lactic acid (%)	4.0 to 6.0	5.0 to 10.0	1.0 to 2.0
Acetic acid (%)	0.5 to 2.5	1.0 to 3.0	<0.5
Propionic acid (%)	<0.25	<0.10	<0.10
Butyric acid (%)	<0.25	<0.10	<0.10
Ethanol (%DM)	<1.0	<3.0	<2.0
Ammonia (%CP)	<12.0	<8.0	<10.0
Lactic/Acetate	>2.5	>3.0	>3.0
Lactic (% total)	>70	>70	>70

Inoculants in Corn Silage (18 studies in JDS)

	Control	Inoculants
pH	3.91	3.85
Lactic acid (%)	5.11	5.22
Acetic acid (%)	1.59	1.50
DM recovery(%)	86.4	89.9
DM digest (%)	67.5	69.3

Impact of Inoculation (Dairyland Labs, 2001)

Forage	Target	Control	Treat
Haylage		------% met target------	
pH	< 5.0	74	85
Ammonia	< 12%	55	70
Lactate	> 65%	41	58
Corn Silage			
pH	< 4.2	100	99
Lactate	> 65%	37	60

Silage Bacterial Inoculants

- Function: To stimulate silage fermentation, reduce DM loss, decrease ensiling temp, increase feed digestibility, improve forage surface stability, and increase VFA
- Level: 100,000 colony forming units (CFU) per gram of wet silage. Recommended bacteria include Lactobacillus plantarium, buchneri, and acidilacti; Pediococcus cereviseai; Pediococcus pentacoccus; and/or Streptococcus faecium.
- Cost: $0.60 to $2.00 per treated ton of wet silage
- Benefit to Cost Ratio: 6:1
- Feeding Strategy: Apply to corn silage, haylage, and high moisture corn
- Status: Recommended

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