Keys to the Most Profitable U.S. Dairy Grazing Operations

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PRO-DAIRY
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Keys to ~~the Most~~ Profitable U.S. Dairy Grazing Operations

- Exposure to limited performance data for grazing dairies, mostly in the Northeast
- Many different ways people are successfully doing things
- Will share with you observations and information from interactions with these producers

Keys to Profitability

- Overall Management
  - Analysis
  - Decision Making
  - Attitude
- Specific Management Areas
  - Milk Production
  - Supplementation
  - Labor Efficiency
  - Capital Investment
  - Cost Control
  - Stocking Rate

Analysis

- Consolidated financial statements
  - Balance sheets
  - Income statements
  - Statement of cashflow
- Performance is
  - Calculated
  - Tracked over time
  - Discussed

Analysis

- What are the key ratio's doing within the business?
- Did decisions work?
- Is progress being made?

Key Profit Questions

- Are we generating rates of return:
  - Sufficient to meet family goals
  - Making a Return on Equity(market value) 10% and greater over time
- Is net worth increasing faster than inflation?
- Is Return on All Capital(market value) greater than the cost of borrowed capital?

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Decision Making

- Use analysis to help in decision making
- Go through formal decision making process
- Prepare budgets
- Analyze more than one option
- Implement decisions

Decision Making

- Review past decisions
- Did they work
- If so, why
- If not, why
- If didn't work
  - How fast will you know?
  - What will you do next?

Attitude

- What is the overall outlook
- Excited about challenges
- Excited about opportunities
- Willing to change
- Surround yourself with people of similar attitude
- Ask questions

Attitude

- Share information
- Learn from
  - Your mistakes
  - From others
- Be willing to change
- Never stop problem solving

Attitude

"We do what we do because that is what we do"

Grazing Profits

- Large range of performance among grazing dairies
- No golden pill to farm profitability
- Management decisions regarding use of resources impact profits

Management Strategies

- Different ways grazing farms are trying to make a profit
  - Annual production, high input
  - Annual production, lower input
  - Seasonal production, high input
  - Seasonal production, low input

Management Strategies

- All have made farm profits
- What fits the management style?
- How well decisions are made and implemented impact profits?
- How does it impact the profit equation?

Profit Equation

$$\text{Profit} = \frac{\text{Volume X (Price-Cost)}}{\text{Investment}}$$

- Only four ways to impact profit
  - Volume
  - Price
  - Cost
  - Investment

Milk Production

- What milk is being generated from the resources that are being utilized
- Is it being maximized for the set of resources being utilized
  - Per cow
  - Per acre
  - Per farm

1996-2007 New York Intensive Grazing Summary (pounds milk sold per cow)

Year	More Profitable		Less Profitable		Difference
1996	(21)	18,402	(09)	13,875	4,527
1997	(19)	18,288	(16)	16,155	2,133
1998	(17)	18,508	(14)	17,163	1,345
1999	(13)	18,454	(16)	17,905	549
2000	(17)	19,075	(13)	14,808	4,267
2001	(19)	16,698	(13)	13,660	3,038
2002	(10)	19,868	(11)	14,626	5,242
2003	(10)	18,728	(10)	13,768	4,960
2004	(9)	18,436	(14)	14,906	3,503
2005	(17)	18,579	(17)	17,274	1,305
2006	(10)	17,492	(23)	17,099	393
2007	(13)	17,367	(36)	16,112	1,255

Milk Production

- Large range
- Not a target level
- Getting the most for inputs utilized
- Making enough to cover other costs
- Not just milk, also components

Milk Sold per Cow

- 2007 top 20% all grazing farms sorted by ROA
  - Ranged from 11,000 to 24,500
- 2008 top 20% all grazing farms sorted by ROA
  - Ranged from 10,500 to 17,500

Milk Production

- Production can be too low
- Income drops faster than expenses
- Fixed costs not changing

Supplementation

- How is the pastures supplemented?
- What is used?
- What is being generated for components?
- How does it impact stocking rates?

Average Pounds of Grain Fed/Cow/Day (During Grazing Season) – New York Grazing Dairies

Year	More Profitable		Less Profitable	
1996	(21)	17.4	(09)	12.6
1997	(19)	15.25	(16)	14.0
1998	(17)	15.92	(14)	12.92
1999	(13)	13.77 (D.M.)	(16)	12.87 (D.M.)
2000	(17)	14.40 (D.M.)	(13)	12.30 (D.M.)
2001	(19)	17.9 (D.M.)	(13)	16.3 (D.M.)
2002	(10)	15.7 (D.M.)	(11)	14.3 (D.M.)
2003	(10)	17.3 (D.M.)	(10)	15.8 (D.M.)
2004	(12)	13.96 (D.M.)	(13)	15.06 (D.M.)
2005	(13)	15.6 (D.M.)	(13)	16.39 (D.M.)
2006	(9)	15.73 (D.M.)	(20)	15.05 (D.M.)
2007	(11)	15.67 (D.M.)	(11)	8.95 (D.M.)

Net Milk Income over purchased grain and concentrates per cow per year – New York

Year	More Profitable		Less Profitable		Difference
1996	(21)	$1,847	(09)	$1,225	$622
1997	(19)	$1,699	(16)	$1,376	$323
1998	(17)	$2,189	(14)	$1,877	$312
1999	(13)	$2,043	(16)	$1,918	$125
2000	(17)	$1,767	(13)	$1,394	$373
2001	(19)	$2,210	(13)	$1,641	$569
2002	(10)	$1,738	(11)	$1,226	$512
2003	(10)	$1,655	(10)	$1,244	$411
2004	(Top 9)	$2,114	(30)	$2,079	$35
2005	(Top 13)	$1,868	(42)	$1,927	-$59
2006	(Top 13)	$1,625	(42)	$1,540	$85
2007	(Top 18)	$2,607	(36)	$2,567	$40

Supplementation

- Individual farm experience with low to minimal input appears to have limitations
- Questions still being asked?
  - What to supplement with?
  - How much to do?
  - How to modify during the grazing season?
  - How to modify from year to year?

Labor Efficiency

- With cows doing more of the work, less labor needed on the farm
- More cows managed with one worker
- Increased profit per worker

Labor Efficiency

- Not just milking the cows
- Taking care of replacements
- Winter feed production
- Managing the pastures and the cattle

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Cows per Worker
New York Grazing Dairies

Year	Most Profitable		Least Profitable	
1996	(21)	31	(09)	25
1997	(19)	31	(16)	26
1998	(17)	33	(14)	30
1999	(13)	26	(16)	33
2000	(17)	30	(13)	39
2001	(19)	35	(13)	38
2002	(10)	27	(11)	52
2003	(10)	26	(10)	49
2004	(Top 9)	42	(30)	36
2005	(Top 13)	44	(42)	35
2006	(Top 13)	43	(42)	36
2007	(Top 18)	41	(42)	41

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Milk Sold per Worker
New York Grazing Dairies

Year	Most Profitable		Least Profitable	
1996	(21)	558,583 lbs.	(09)	348,148 lbs.
1997	(19)	566,779 lbs.	(16)	419,098 lbs.
1998	(17)	604,555 lbs.	(14)	517,557 lbs.
1999	(13)	489,431 lbs.	(16)	593,231 lbs.
2000	(17)	570,391 lbs.	(13)	585,997 lbs.
2001	(19)	587,869 lbs.	(13)	519,903 lbs.
2002	(10)	540,928 lbs.	(11)	759,214 lbs.
2003	(10)	485, 904 lbs.	(10)	675,822 lbs.
2004	(Top 9)	716,852 lbs.	(30)	611,862 lbs.
2005	(Top 13)	709,106 lbs.	(42)	587,165 lbs.
2006	(Top 13)	711,600 lbs.	(42)	644,066 lbs.
2007	(Top 18)	688,300 lbs.	(36)	675,657 lbs

Milk Sold Per Worker

- Top 20% of all grazing farms sorted by labor efficiency
  - 2007, averaged 1,086,771
  - 2008, averaged 1,097,526

Capital Investment

- The bottom number in the profit equation
- How much money is invested for the dollars generated.
- Moving towards having less machinery and buildings so less total investment in the business
- Can be to low

Investment Balance

- Is every area of the business operating at economic capacity
  - Land base
  - Milking center
  - Equipment
  - Family management
  - Family labor
  - Etc

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Asset Turnover Ratio

Year	Most Profitable		Least Profitable	
1996	(21)	.49	(09)	.44
1997	(19)	.45	(16)	.35
1998	(17)	.52	(14)	.46
1999	(13)	.56	(16)	.51
2000	(17)	.58	(13)	.43
2001	(19)	.59	(13)	.41
2002	(10)	.55	(11)	.41
2003	(10)	.44	(10)	.33
2004	(Top 9)	.55	(30)	.50
2005	(Top 13)	.52	(42)	.48
2006	(Top 13)	.45	(42)	.42
2007	(Top 18)	.57	(36)	.54

Asset Turnover – All Grazing Farms, Sorted by ROA

- Top 20% of farms, ratio range
  - 2007 = .72
  - 2008 = .54
- Bottom 20% of farms
  - 2007 = .54
  - 2008 = .34

Cost Control

- By utilizing pasture, try to lower costs of producing milk during the grazing season
- Spending only on those things that return revenue or save costs
- Worst case scenario – grazing milk production and conventional costs

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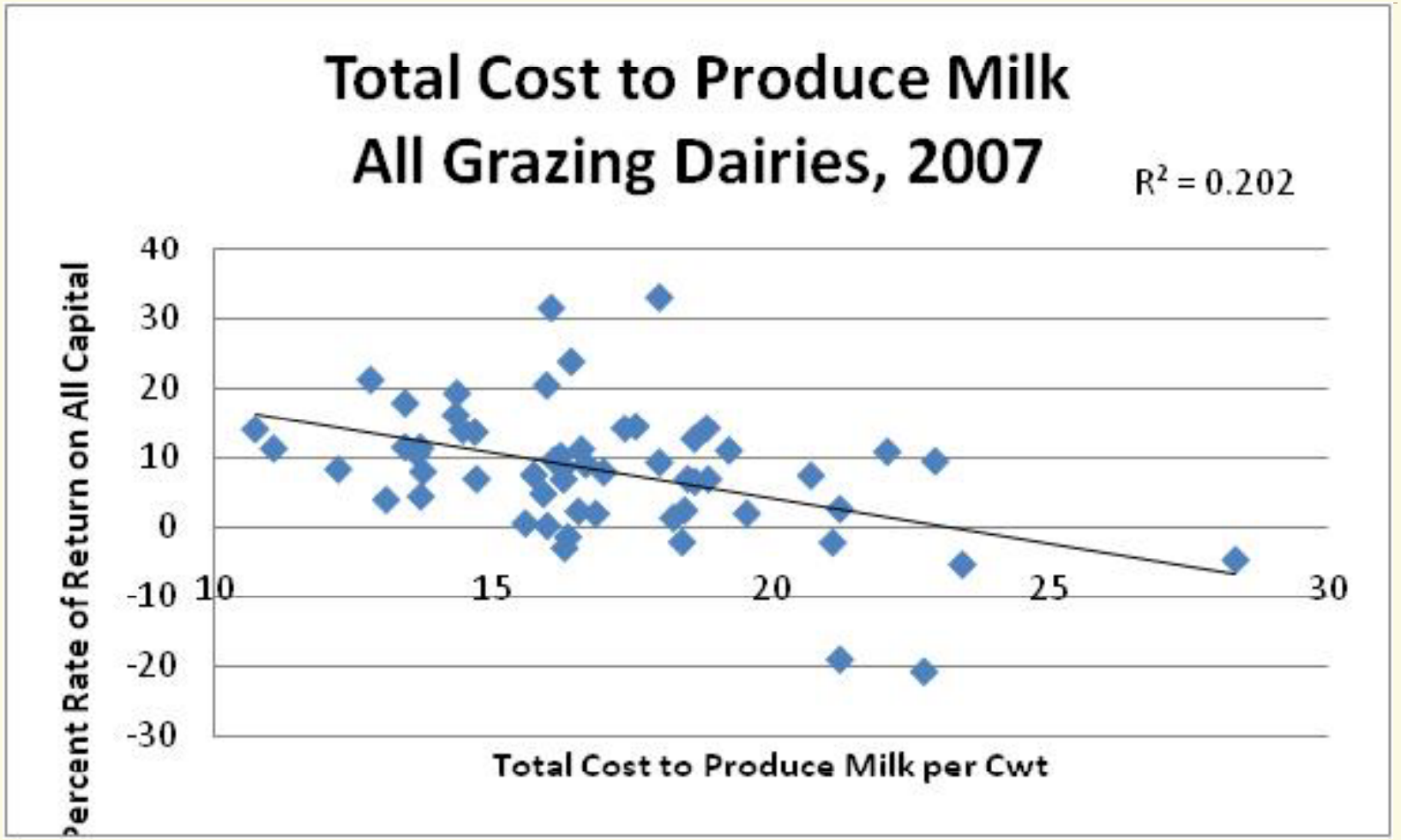
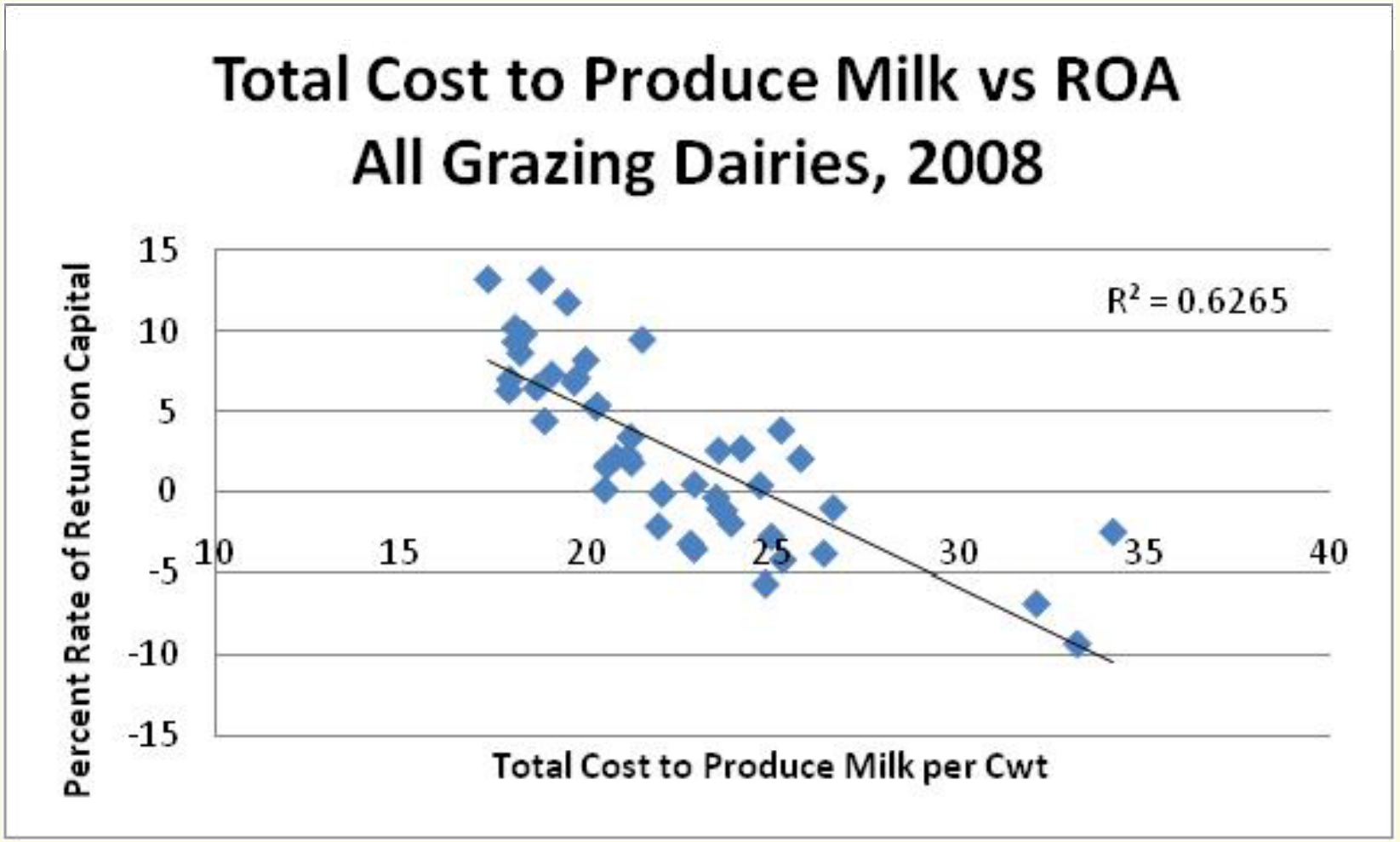
Cost Control

Year	Most Profitable Total Cost Per Cwt.	Least Profitable Total Cost Per Cwt.
1996	14.51	20.18
1997	14.52	18.28
1998	13.79	16.60
1999	14.37	16.48
2000	13.71	17.23
2001	14.40	20.83
2002	13.61	15.02
2003	14.48	15.50
2004	14.89	17.66
2005	15.27	17.45
2006	13.79	16.49
2007	17.71	19.64

Cost Control



Cost Control



Stocking Rate

- Acres needed per cow
- All acres utilized by the farm for pasture and winter forage production
- Impacted by investment levels, forage production, supplementation, winter forage production

Stocking Rate
All Grazing Dairies

- Top 20% of Farms, sorted by ROA
  - 2007 = 2.36 acres per cow
  - 2008 = 2.32
- Bottom 20% of farms, sorted by ROA
  - 2007 = 4.94 acres per cow
  - 2008 = 4.04

Take Home Points

- Grazing can be quite profitable
- So far, no one way seems to be the best
- How well the resources are utilized is key to success

Take Home Points

- Overall Management
  - Analysis
  - Decision Making
  - Attitude
- Specific Management Areas
  - Milk Production
  - Supplementation
  - Labor Efficiency
  - Capital Investment
  - Cost Control
  - Stocking Rate

Still Asking Questions

- Stocking rates
- Fertilizer programs
- Grass varieties
- Cross breeding
- Components per acre
- Etc.

Numbers of Farms

- Very interesting to look at data each year
- Limited number of farms makes it difficult to conclude anything
- Individual farms can move averages

Resources

- Dairy Farm Business Summary Program
  - www.dfbs.cornell.edu
- Grazing DFBS Publication
  - Linda Putnam
    Cornell University
    305 Warren Hall
    Ithaca, NY 14853-7801
    ldp2@cornell.edu
    607-255-8429
    http://aem.cornell.edu/order/pub_order_farom.pdf

Net Milk Income over Feed Costs
Case Farm

	2000	2001	2002	2003	2004
Lbs per cow	10,761	10,588	10,323	12,198	12,191
BF per cow	455	448	443	504	521
Prot per cow	369	363	364	412	416
OS per cow	617	607	590	704	697
Income per cow	$1,521	$1,964	$1,657	$2,030	$2,647
Milk Mkt per cow	$126	$121	$114	$115	$122
Grain & Concentrates per cow	$427	$424	$568	$363	$669
Actual Yearly Price					
Net Milk Income over Grain & Conc.	$967	$1,420	$976	$1,552	$1,856
Fixed Price					
Income per cow, fixed price	$1,615	$1,589	$1,577	$1,802	$1,833
Net Milk Income over Grain & Conc.	$1,062	$1,044	$895	$1,324	$1,042

Case Farm

Year	Cows per Worker	Milk Sold per Worker
2000	31	332,327
2001	49	513,807
2002	58	599,409
2003	60	737,052
2004	59	721,532

Case Farm

Year	Asset Turnover	Capital Investment per Cow
2000	0.58	$4,844
2001	0.55	$5,755
2002	0.45	$5,253
2003	0.50	$5,337
2004	0.57	$6,068

Case Farm, Cost per Cwt.

Year	Oper.	Total	Net Price
2000	13.50	22.26	12.96
2001	9.07	15.69	17.41
2002	10.85	16.65	14.95
2003	10.47	15.56	15.70
2004	13.64	19.40	20.71

Case Farm

Year	#Cows	Acres	Acres per cow
2000	63	290	4.60
2001	99	233	2.35
2002	126	202	1.60
2003	142	202	1.42
2004	145	202	1.39

Case Farm

Year	NFI w/o Apprec.	Labor & Mgt Income/Opr
2000	-$8,593	-$25,144
2001	$89,781	$59,969
2002	$54,900	$22,219
2003	$95,843	$58,737
2004	$123,558	$80,824

Case Farm

Year	Debt/Cow	Net Worth
2000	$2,053	$358,316
2001	$2,076	$434,151
2002	$1,798	$457,513
2003	$1,777	$566,631
2004	$1,641	$702,740

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