Characteristics of Profitable Dairies
High Production ≠ High Profits

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Topics

- Trends
  - Past, Present and Future
- Characteristics of Profitable Dairies
  - Results of Dairy Profitability Project
- Profiles of Profitable Dairies of the Future
  - Characteristics / Challenges
- Dealing with High Milk Prices
- Conclusions

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Bigger is not always better!

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Things aren't always obvious!

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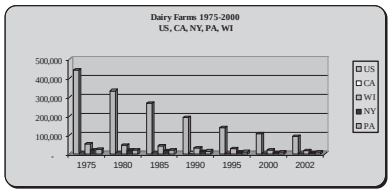
Declining Dairy Numbers
National Trends



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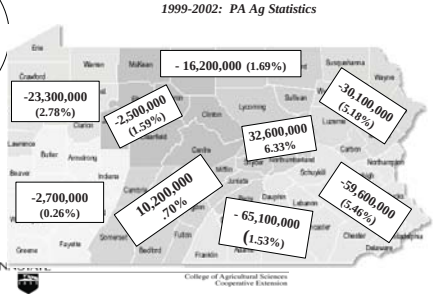
Change in Total Milk Production By Region

1999-2002: PA Ag Statistics



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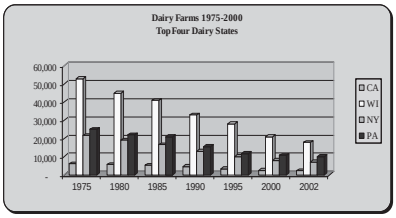
Declining Dairy Numbers
Top Four Dairy States



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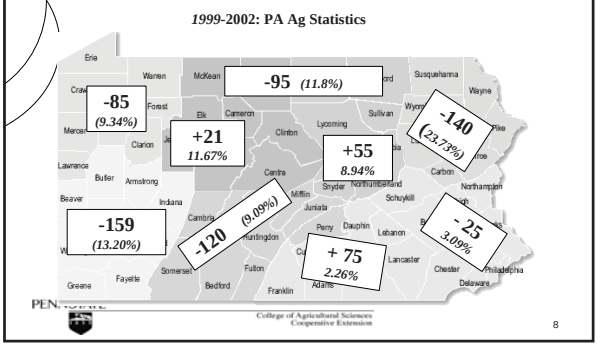
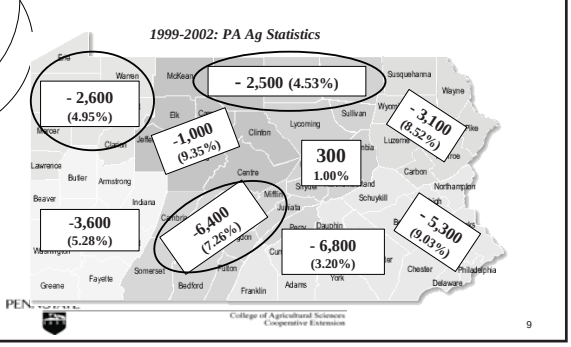
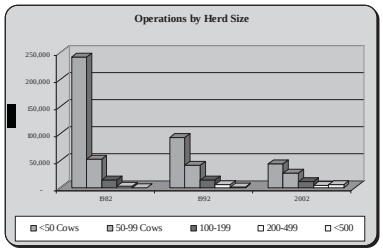
Change in Dairy Farm Numbers By Region



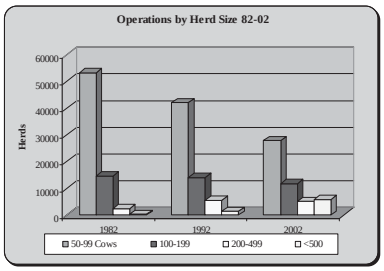
Change in Cow Numbers By Region



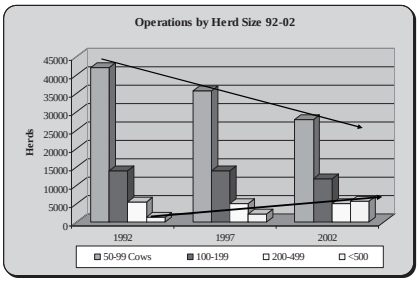
Changing Herd Size Profile
All Herd Sizes



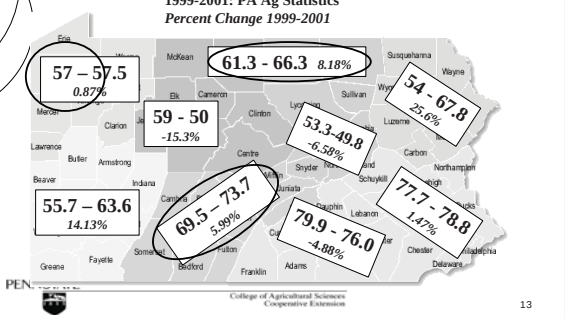
Changing Herd Size Profile
Herds > 50 Cows



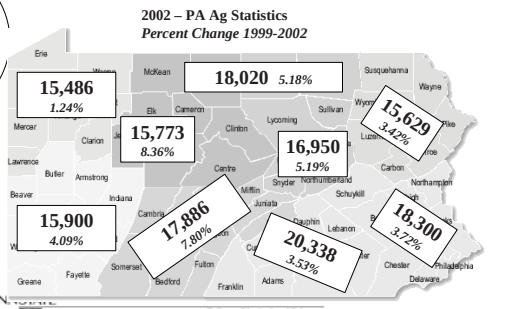
Changing Herd Size Profile



Change in Average Herd Size by Region



Average Milk/Cow By Region

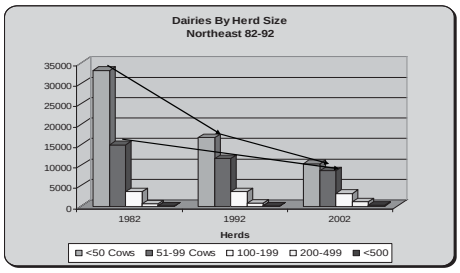


Topics

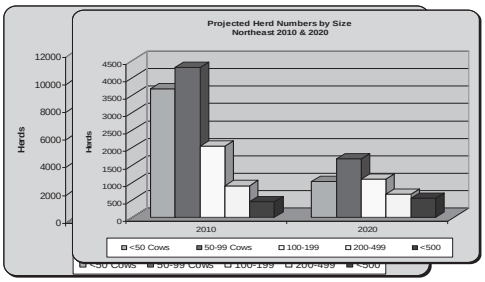
- Northeast Trends
  - Past, Present and Future

Future Structure of the Dairy Industry
LaDue et. al, Cornell University

Changing Herd Size Profile



Changing Herd Size Profile
Northeast (LaDue et. al.)

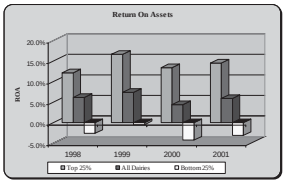


Topics

- Trends
  - Past, Present and Future
- Characteristics of Profitable Dairies
  - Results of Dairy Profitability Project

Profitability of PA Dairies

- Dairy Profitability Grant - USDA
  - Examine Characteristics of Profitable Dairies
  - Over 80 dairies / Usable Data from < 50
  - Comprehensive study of many management variables
- Considerable Differences



Average demographic measures for sample herds (n=88)

Rolling Herd Average, lbs.	22,043
Total herd size, cows	255
Total cropland, acres	716
Producer age, years	45.3
Producer education	
College, %	32.4
Vocational, %	21.6
Computer use, %	86.5

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Average milk production and composition for 2001 for sample herds (n=88)

Milk yield per cow, lbs.	69.7
Fat, %	3.6
Protein, %	3.0
Somatic cell count, (000)	283.3

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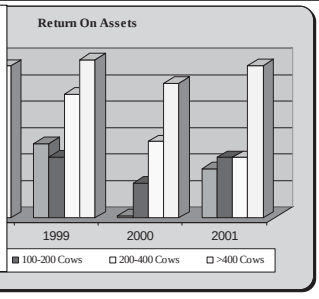
Effect of Herd Size on Profitability

Average ROA by Herd Size

Take Home Points

Larger dairies in study consistently had higher ROA (10%+) than other dairies.

Dairies under 100 cows had poor ROA in 2000 (average prices).



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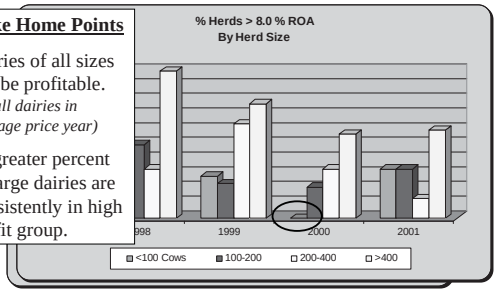
Effect of Herd Size on Profitability

Take Home Points

Dairies of all sizes can be profitable. *(Small dairies in average price year)*

A greater percent of large dairies are consistently in high profit group.



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Profitability Factors

Profitability - ROA

Financial Efficiency
Operating Expense Ratio (OER)

Capital Efficiency
Asset Turnover Ratio (ATR)

Return to Unpaid Family Labor & Owner Labor and Management

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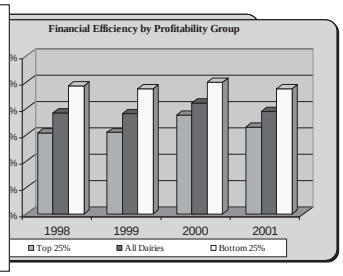
Profitability: Financial Efficiency

Operating Expense Ratio (Lower is Better)

Take Home Points

Small farms in study were more financially efficient than mid-sized to large farms.

Most profitable dairies spent 10-15 cents less per dollar to make a dollar than least profitable dairies.



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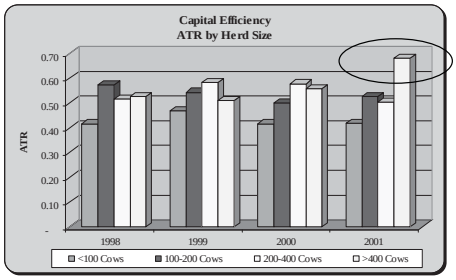
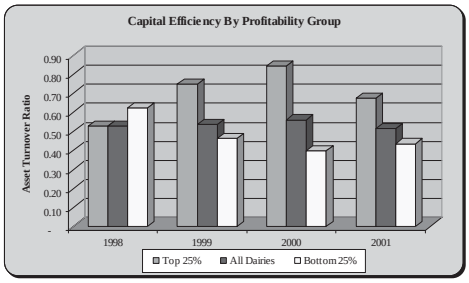
Profitability: Capital Efficiency

Asset Turnover Ratio (ATR)



Profitability: Capital Efficiency

Asset Turnover Ratio (ATR)



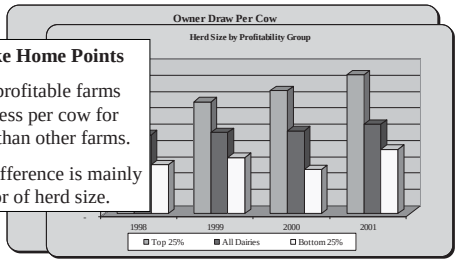
Profitability Factors

Return to Labor & Management

Take Home Points

Most profitable farms draw less per cow for RLM than other farms.

The difference is mainly a factor of herd size.



Management Matrix of Profitable Dairies
ROA > 8.0% - 1998 (n=21)

	FE	CE
CE	FE / CE: 7	XCE: 3
FE	XFE: 7	CE / FE: 3

Low OD 1 / (6)

FE- Financially Efficient
XFE – OER < 60%
FE - OER 60-70%
MLFE - OER> 70%

CE-Capital Efficient
XCE - ATR > .70
CE - ATR - .55-.69
MLCE - ATR - <.55

Management Matrix of Profitable Dairies
ROA > 8.0% - 2000 (n=12)

	FE	CE
CE	FE / CE: 4	XCE: 2
FE	XFE: 2	CE / FE: 3

Low OD 1 / (4)

FE- Financially Efficient
XFE – OER < 60%
FE - OER 60-70%
MFE - OER> 70%

CE-Capital Efficient
XCE - ATR > .70
CE - ATR - .55-.69
MLCE - ATR - <.55

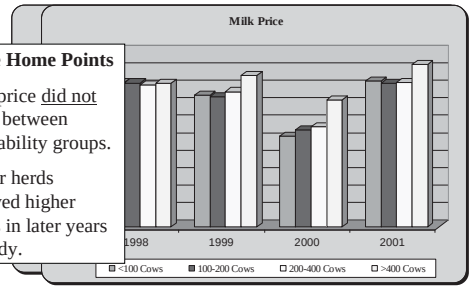
Profitability Factors

Milk Price

Take Home Points

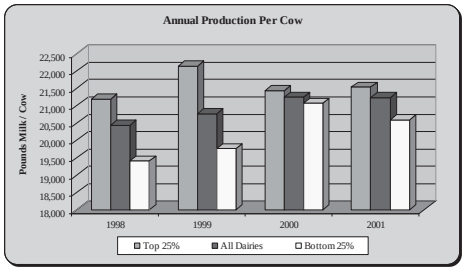
Milk price did not differ between profitability groups.

Larger herds received higher prices in later years of study.



Profitability Factors

Annual Milk Production/Cow



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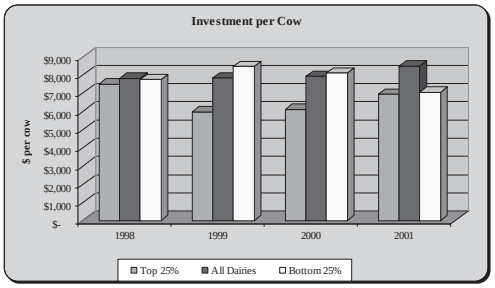
Profitability Factors

Investment Cow



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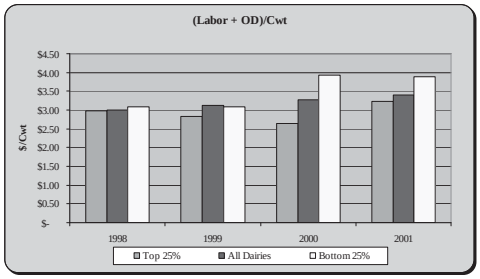
Profitability Factors

Labor Per Cwt. (Plus OD)



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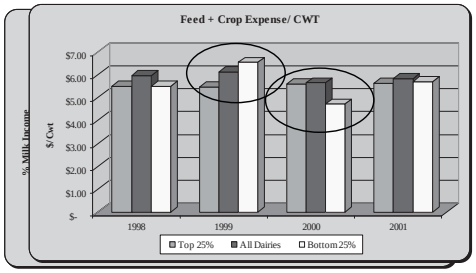
Profitability Factors

Feed Expense



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Similar Feeding Characteristics

- Forage analyses
- Feed frequency
- Feed push-up
- SOP's for feeding
- Ration formulation

- High net farm income per cow group did not have major differences in feed management characteristics.

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Corn silage quality summary for low, medium and high net income per cow levels, (n=38)

CORN SILAGE	Low	Medium	High
CP, %	8.33	8.36	8.23
ADF, %	26.49	25.18	24.58
NDF, %	46.09	44.60	43.38
NEL, mcal/lb	0.71	0.74	0.74

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Haylage quality summary for low, medium and high net income per cow levels, (n=38)

HAYLAGE	Low	Medium	High
CP, %	18.09	21.05	21.51
ADF, %	37.96	33.77	35.13
NDF, %	54.01	47.52	44.33
NEL, mcal/lb	0.58	0.63	0.62

Benefits of Good Forage Quality

- Low NFI to High NFI groups
  - C… …nd -0.03 mcal
  - H… …0.05 mcal
- Assu… …CS:HL ratio.
- For 1… …e
  - 25… …ctation
  - 61,000 mcal of energy for the lactation

Take Home Point

Poor forage quality cost low profitability dairies approximately **$7,500** more per year (per 100 cows) in feed than high profitability herds.

Topics

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  - Characteristics
  - Challenges

Dairy Farm Profiles of the Future

- Fewer Dairies
  - Nationally, Northeast, PA
  - All sizes – except larger dairies
- Larger Dairies
- Two Extremes - PA
  - Small dairies
  - Larger Dairies
- All Dairies – Stress Capital Efficiency

Dairy Farm Profiles of the Future

- **Small Dairies**
  - Must re-examine business model
  - Adopt one that is extremely capital efficient
    - Reduce capital investments in land & machinery
  - High production, high quality
    - Purchase high quality forages
    - Focus on cow comfort
  - Micro-manage cows
    - Manage by observation
  - Outside income to maintain standard of living

Dairy Farm Profiles of the Future

- **Mid-sized (under 500 cows)**
  - **Stress capital efficiency**
    - Milking Center, Machinery & Equipment
  - **Plan expansions carefully**
    - Size it right
  - **Financially Efficient**
    - Control controllables & attention to details
  - **Become a "people manager"**
  - **Manage by observation and information**
  - **Band Together**
    - Producer groups

Dairy Farm Profiles of the Future

- Large Dairies
  - Stress capital efficiency-Controlled Investment
  - Satellite Operations??
- Keen Investment Manager
  - Profit - Investment Cycle Management
- Become a manager of "managers"
  - One person can only manage 8-10 people
- Manage through information
- Community Relations

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Dealing with High Milk Prices

- Pursue Marginal Milk
  - Next pound costs only 3-4 cents
  - Plan for forage harvest to maximize quality (3-4 weeks)
- Add Cows
  - Keep facilities full / Overcrowd
- Pay Down AP
  - Take advantage of Cash Discounts
- Pay Down OL's
- Pay down short term credit
- Invest in Productive Assets

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Conclusions

- Dairies of all sizes will continue to exist
  - Larger herds have some advantages
- Profitability is a function of many factors
  - Profitable farms are usually financially efficient
  - All farms must improve capital efficiency
  - Smaller farms must adopt new business models
- Major Challenges
  - Environmental Regulations
  - Public Image
  - Consolidation

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Thank You!

Thanks to all the producers who participated in this project.

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