

# Pennsylvania Financial Indicators

Samantha Gehrett, Extension Educator  
Rob Goodling, Ag Business Consultant

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CENTER FOR  
**Dairy** EXCELLENCE



PennState Extension



# Meet the Presenters



**Rob Goodling**  
Ag Business Consultant

- Dairy Farm Management
- Entity Creation
- Transition & Estate Planning
- Employee Training

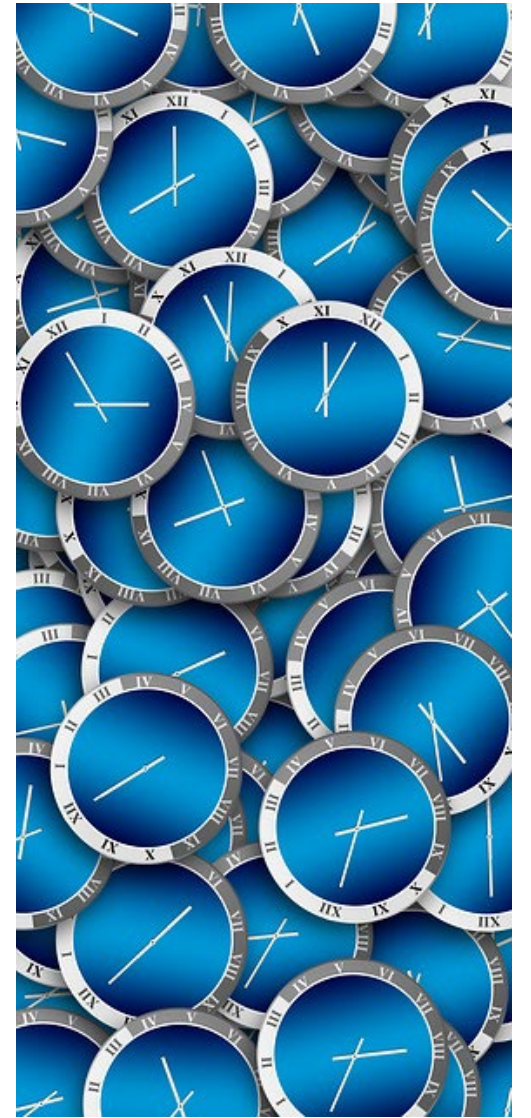


**Samantha Gehrett**  
Dairy Educator

- Dairy Business Management
- Dairy Processing
- Agricultural Biosecurity and Food Safety Defense

# A reboot 20 years in the making

- Why Dairy Performance Indicators for Pennsylvania
  - Then vs. Now
  - Metrics being captured
- 2022 Herd Performance
  - Overall
  - By herd size and production type
- 2022 Financial Performance
  - Strengthening of Financial Ratios
  - Room for improvement

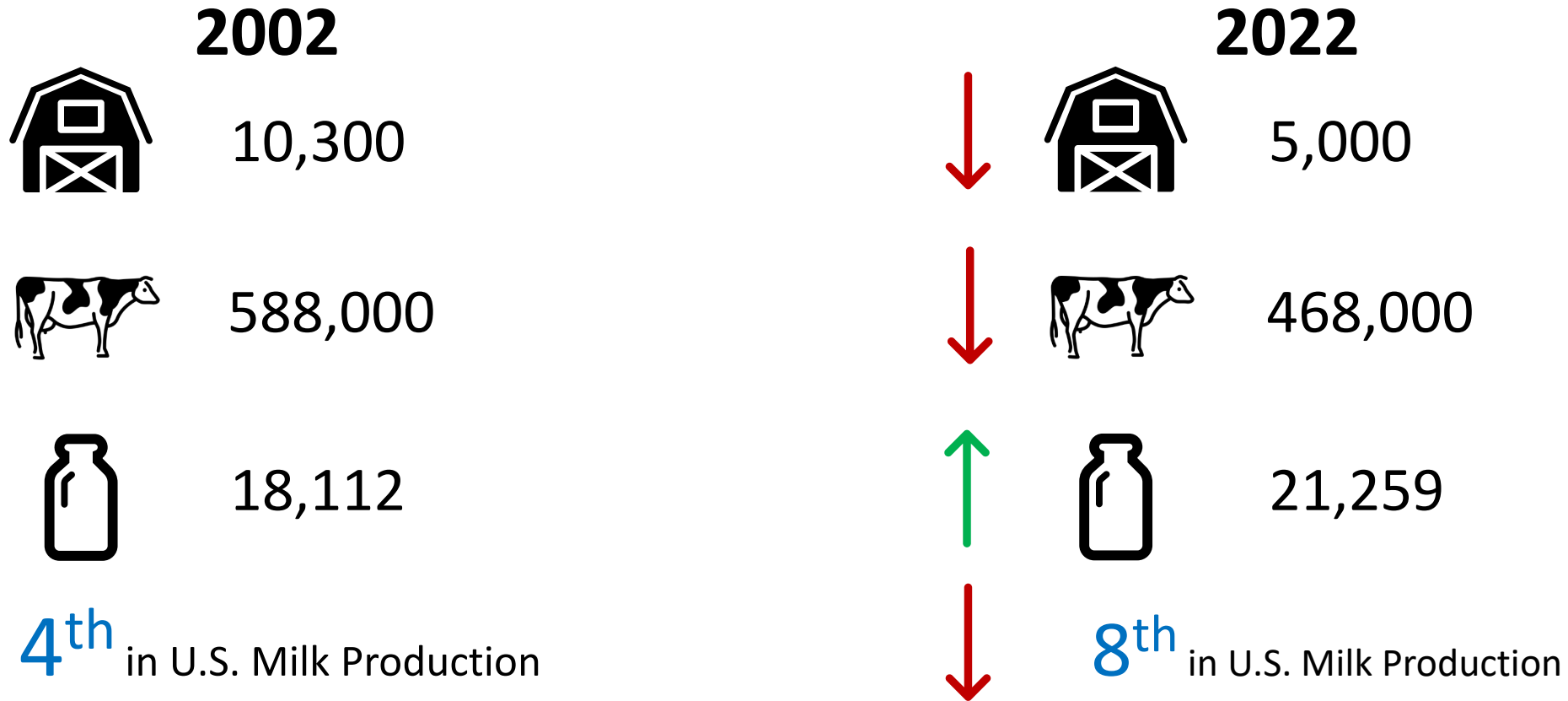


# 2022 Performance Indicator Committee

- **Center for Dairy Excellence:** Zach Myers & Jayne Sebright
- **Horizon Farm Credit:** Mike Hosterman & Rob Goodling
- **Penn State Extension:** Samantha Gehrett

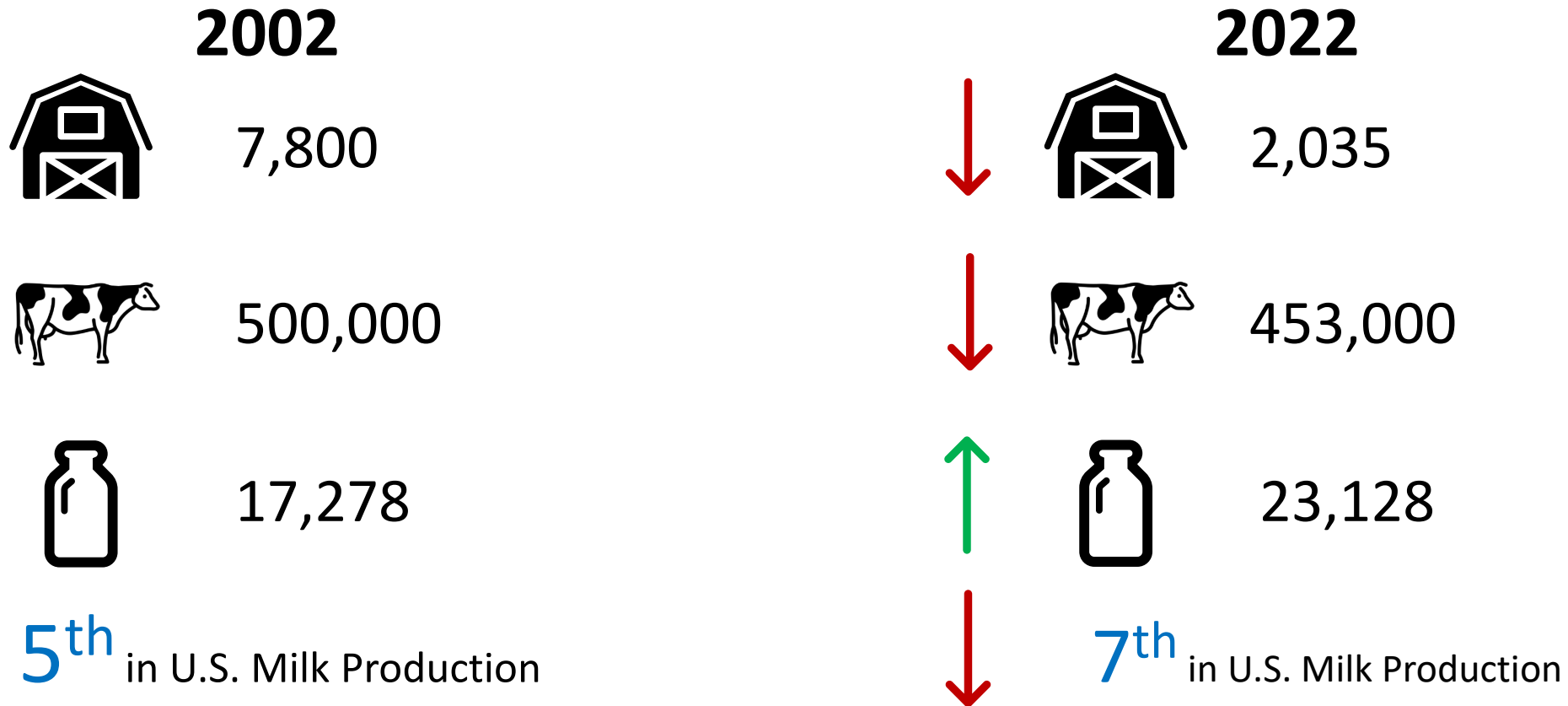


# Pennsylvania Dairy Perspective



Cow image by Yuluck. Flaticon.com; "Dairy 2002: Part II". 2003. USDA APHIS; "2022" U.S. dairy trade & processing. 2023. Progressive Dairyman

# Competitor: Minnesota Dairy Perspective



Cow image by Yuluck. Flaticon.com; "Dairy 2002: Part II". 2003. USDA APHIS; "2022" U.S. dairy trade & processing. 2023. Progressive Dairyman



# 17 Performance Indicators

## General Dairy Performance Indicators

- Production
  - Average Cow #s
  - Milked Shipped per Cow
  - Energy Corrected Milk per Cow
- Cost
  - Total Feed Cost per Cow
  - Total Feed Cost per CWT
- Efficiencies
  - EBITDA per Cow
  - Total Revenue to Total Labor Ratio\*

*\*Collect and Review only for 2022.*

## Financial Indicators

- Liquidity
  - Current Ratio
- Solvency
  - Equity to Asset Ratio
  - Assets per Cow\*
  - Debt per Cow\*
- Profitability
  - Net Margin per Cow
  - Net Margin per CWT
  - Return on Assets\*
- Repayment
  - Debt to EBITDA
- Financial Efficiency
  - Operating Expense Ratio

# General Performance Notes

1. Energy Corrected Milk:  $(12.82 \times \text{lbs. of Fat} + 7.13 \times \text{lbs. of Protein} + 0.323 \times \text{lbs. Milk Shipped}) / 365 / \text{Avg Herd Size}$ .
2. Total Feed Cost: Includes Purchased Feed & Crop Expenses (Seed, Fertilizer, Chemical). Accrual adjusted when possible.
3. Net Cost of Production: Includes depreciation expense and not principal payments. There are two methodologies used to determine this metric, one looks at whole farm and the other focuses on dairy enterprise. Both methods provide comparable results.
4. Net Margin: Gross Farm Revenue less Total Expenses, including depreciation.
5. EBITDA per Cow: Accrual based Earning before tax, interest, and depreciation/amortization.



# 2022 General Dairy Performance

Herd Performance Indicators	2022 PA Average
Number of Herds	220
Average Herd Size	306
Milk Shipped per Cow	23,256
Energy Corrected Milk Shipped per Cow <sup>1</sup>	24,828

# 2022 General Dairy Performance: Herd Size

Herd Performance Indicators	2022 PA Average	2022 Minnesota Average
Number of Herds	220	261
Average Herd Size	306	260
Milk Shipped per Cow	23,256	25,216
Energy Corrected Milk Shipped per Cow <sup>1</sup>	24,828	27,859
<b>Costs</b>		
Total Feed Cost per Cow <sup>2</sup>	\$ 2,681	\$ 2,890
Total Feed Cost per Cwt. <sup>2</sup>	\$ 11.67	\$ 11.46
Net Cost of Production per Cwt. <sup>3</sup>	\$ 22.94	\$ 22.33
<b>General Financial Indicators</b>		
Net Margin per Cow <sup>4</sup>	\$ 1,288	\$ 693
Net Margin per Cwt. <sup>4</sup>	\$ 5.67	\$ 2.74
EBITDA per Cow <sup>5</sup>	\$ 2,336	\$ 1,356

# 2022 General Dairy Performance: Herd Size

Herd Performance Indicators	Herd Size Group		
	99 cows or fewer	100 to 299 cows	300 cows or more
Number of Herds	72	89	59
Average Herd Size	66	175	795
Milk Shipped per Cow	21,065	23,702	25,258
Energy Corrected Milk Shipped per Cow <sup>1</sup>	22,355	25,456	26,897
<b>Costs</b>			
Total Feed Cost per Cow <sup>2</sup>	\$ 2,405	\$ 2,736	\$ 2,935
Total Feed Cost per Cwt. <sup>2</sup>	\$ 11.76	\$ 11.57	\$ 11.72
Net Cost of Production per Cwt. <sup>3</sup>	\$ 24.03	\$ 22.47	\$ 22.32
<b>General Financial Indicators</b>			
Net Margin per Cow <sup>4</sup>	\$ 1,298	\$ 1,283	\$ 1,282
Net Margin per Cwt. <sup>4</sup>	\$ 6.55	\$ 5.41	\$ 5.01
EBITDA per Cow <sup>5</sup>	\$ 2,409	\$ 2,418	\$ 2,122



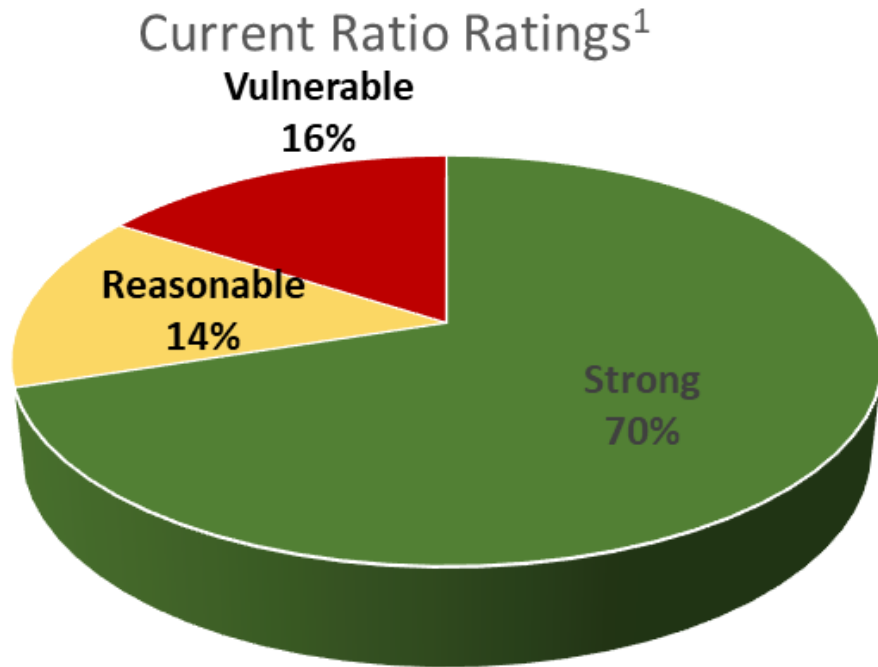
# 2022 General Dairy Performance: Herd Size

Herd Performance Indicators	Production Type	
	Conventional	Organic
Number of Herds	196	22
Average Herd Size	332	68
Milk Shipped per Cow	24,217	15,445
Energy Corrected Milk Shipped per Cow <sup>1</sup>	25,834	16,433
<b>Costs</b>		
Total Feed Cost per Cow <sup>2</sup>	\$ 2,702	\$ 2,529
Total Feed Cost per Cwt. <sup>2</sup>	\$ 11.18	\$ 15.75
Net Cost of Production per Cwt. <sup>3</sup>	\$ 22.17	\$ 29.41
<b>General Financial Indicators</b>		
Net Margin per Cow <sup>4</sup>	\$ 1,312	\$ 1,136
Net Margin per Cwt. <sup>4</sup>	\$ 5.36	\$ 8.62
EBITDA per Cow <sup>5</sup>	\$ 2,414	\$ 1,757

# Liquidity: Current Ratio Ratings

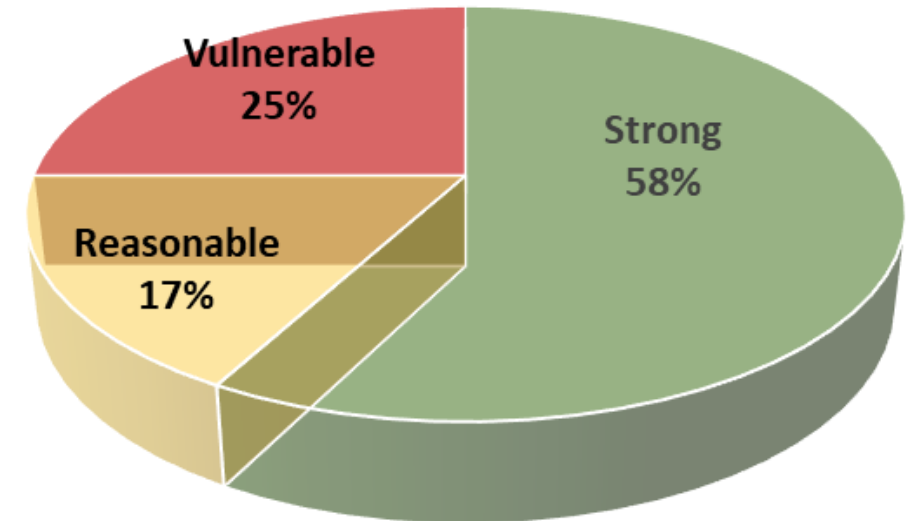
PA

MN



Vulnerable: <1.3    Reasonable: 1.3-2    Strong: >2

Current Ratio Ratings<sup>1</sup>



Vulnerable: <1.3    Reasonable: 1.3-2    Strong: >2

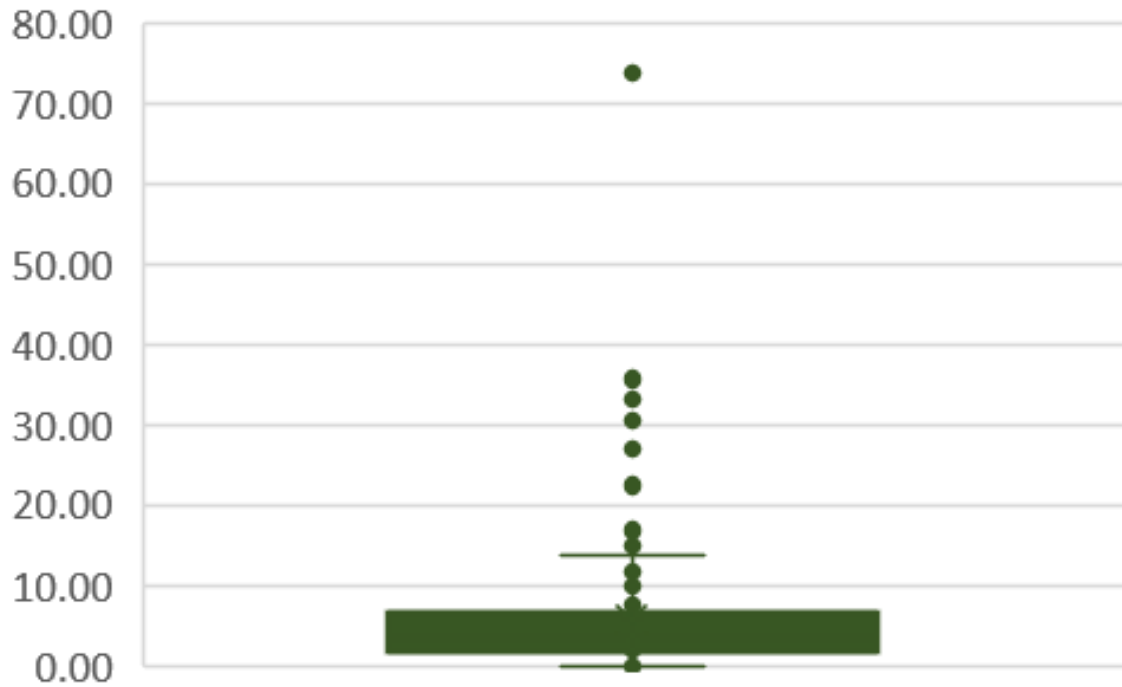
<sup>1</sup> Recommended Ratings based on the Farm Financial Standards Council Guidelines, [www.ffsc.org](http://www.ffsc.org).

# Liquidity: Current Ratio by Production Type

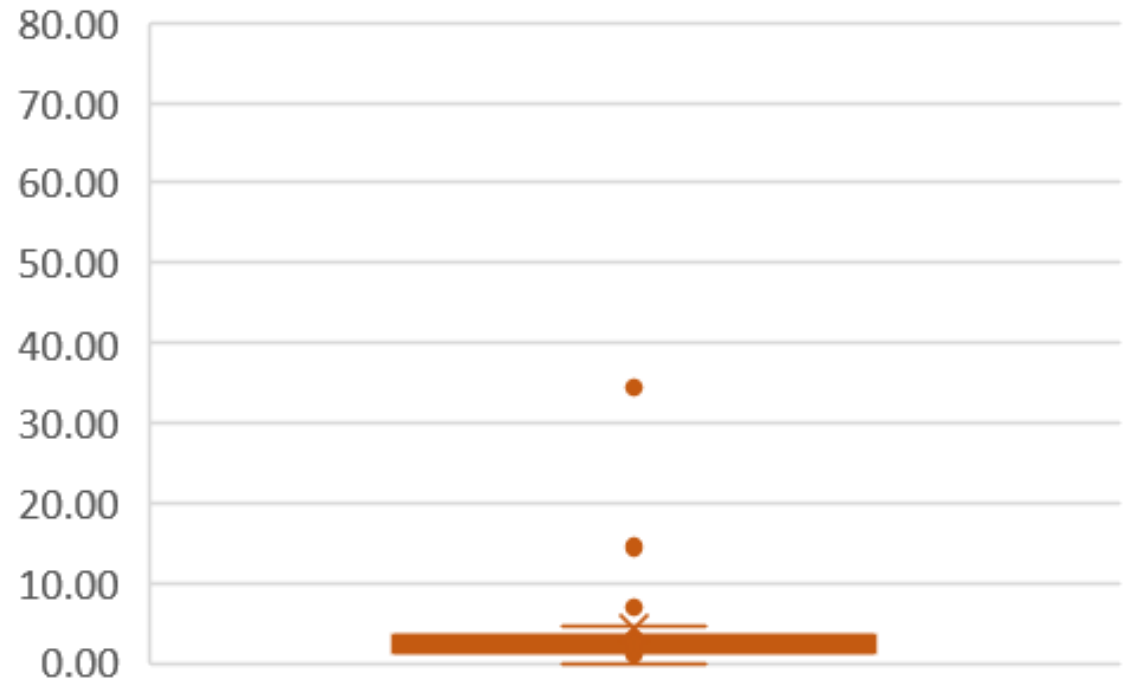
## Conventional

## Organic

### Current Ratio



### Current Ratio





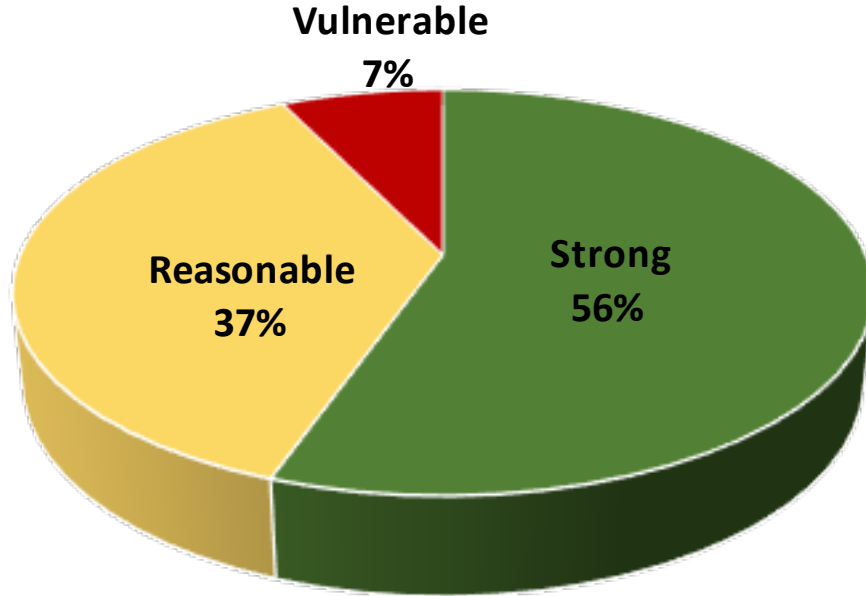
# Solvency: Equity-to-Asset Ratio Ratings

PA

MN

Equity-to-Asset Ratio Ratings <sup>1</sup>

Equity-to-Asset Ratio Ratings <sup>1</sup>



Vulnerable: <0.4    Reasonable: 0.4-0.7    Strong: >0.7

Vulnerable: <0.4    Reasonable: 0.4-0.7    Strong: >0.7

<sup>1</sup> Recommended Ratings based on the Farm Financial Standards Council Guidelines, [www.ffsc.org](http://www.ffsc.org).

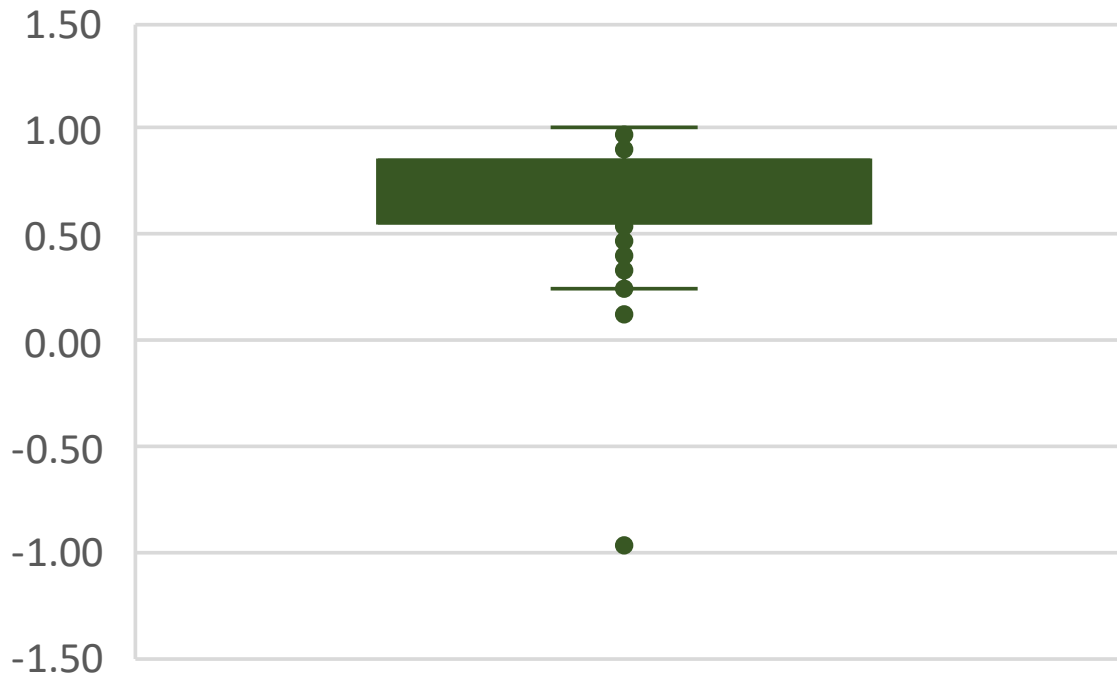
# Solvency: Equity-Asset Ratio

## Production Type

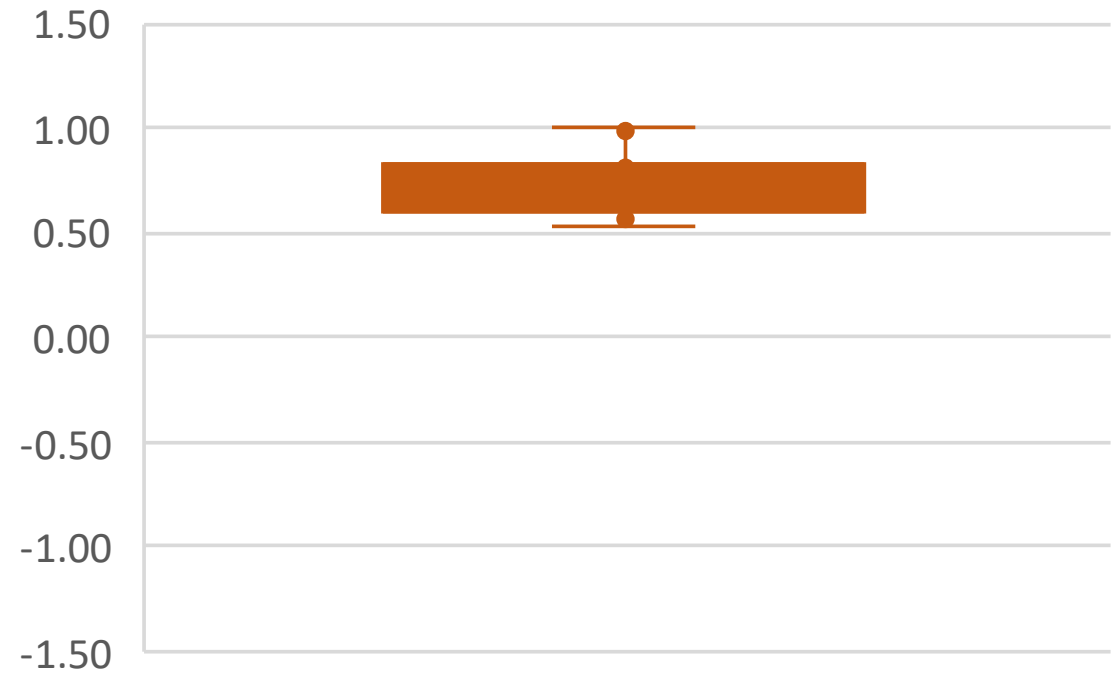
Conventional

Organic

Equity to Asset Ratio



Equity to Asset Ratio



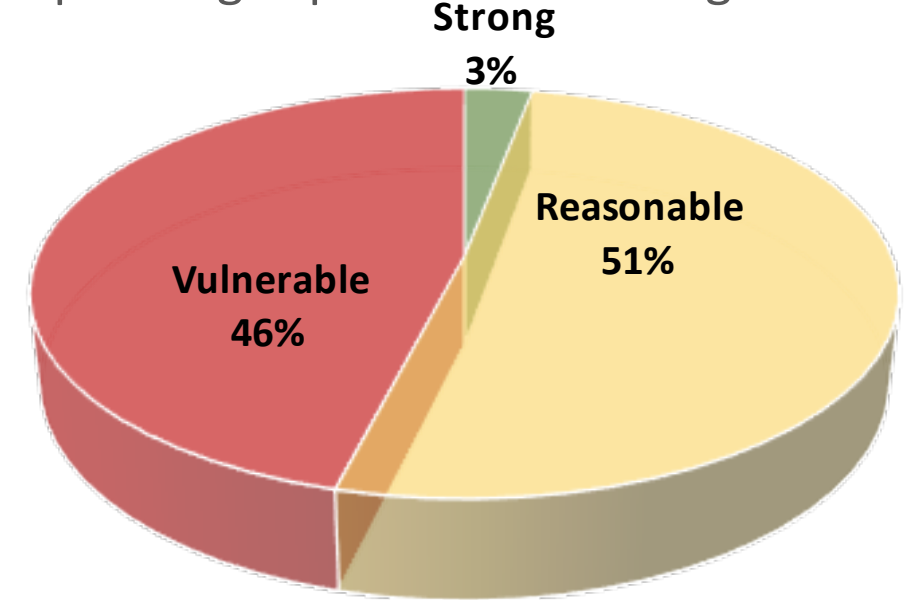
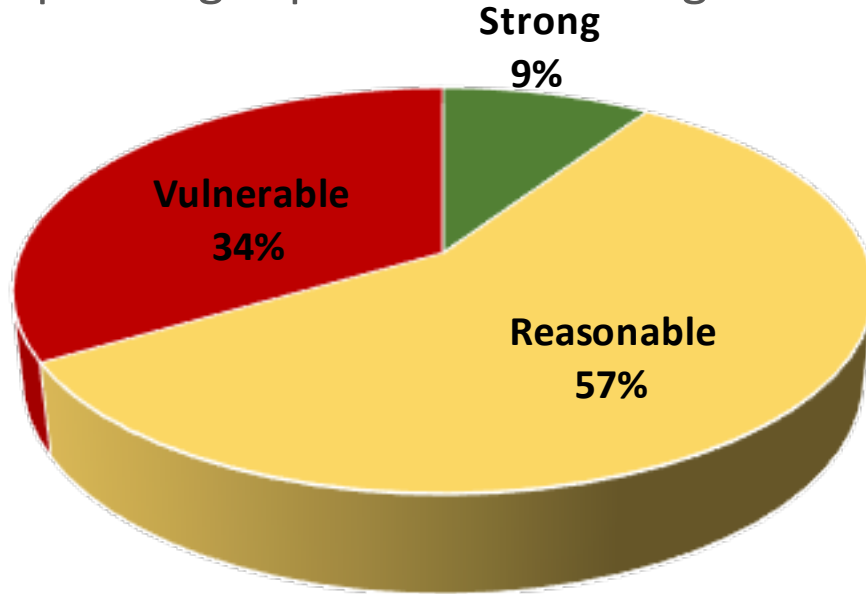
# Financial Efficiency: Operating Expense Ratio Ratings

PA

MN

Operating Expense Ratio Ratings <sup>1</sup>

Operating Expense Ratio Ratings <sup>1</sup>



Vulnerable: >0.8

Reasonable: 0.6-0.8

Strong: <0.6

Vulnerable: >0.8

Reasonable: 0.6-0.8

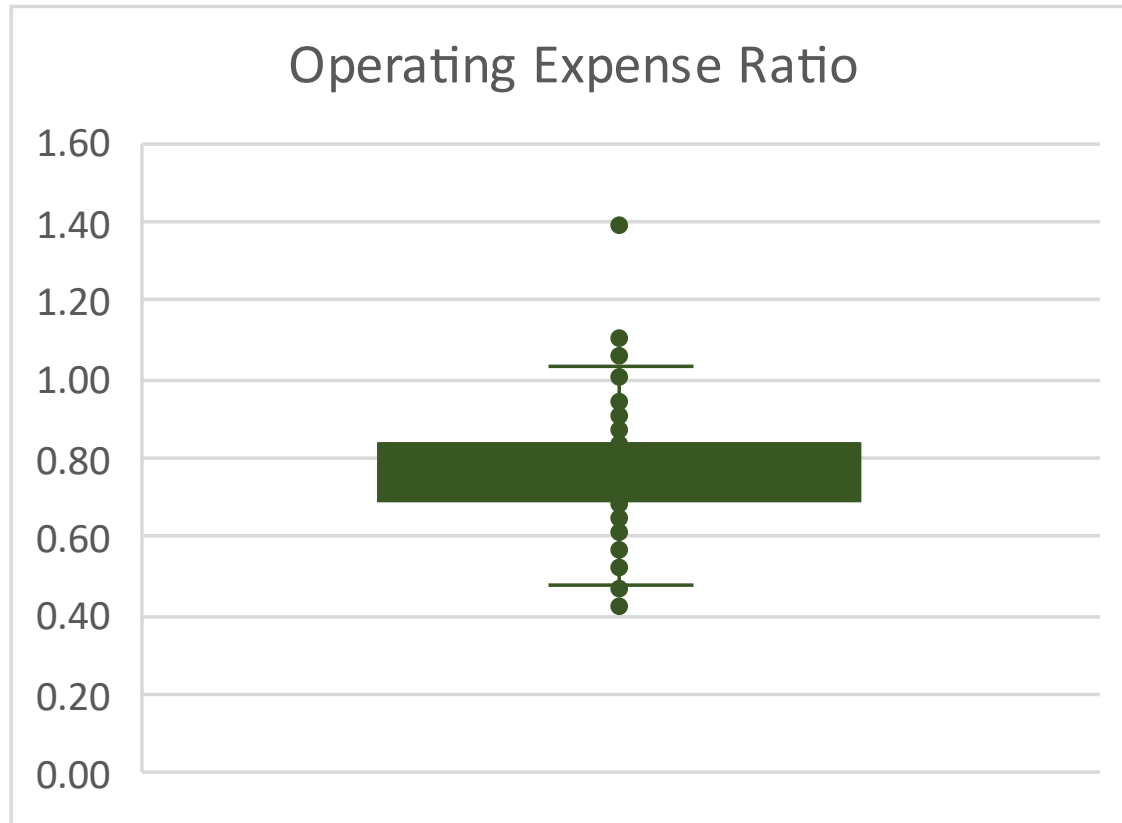
Strong: <0.6

<sup>1</sup> Recommended Ratings based on the Farm Financial Standards Council Guidelines, [www.ffsc.org](http://www.ffsc.org).

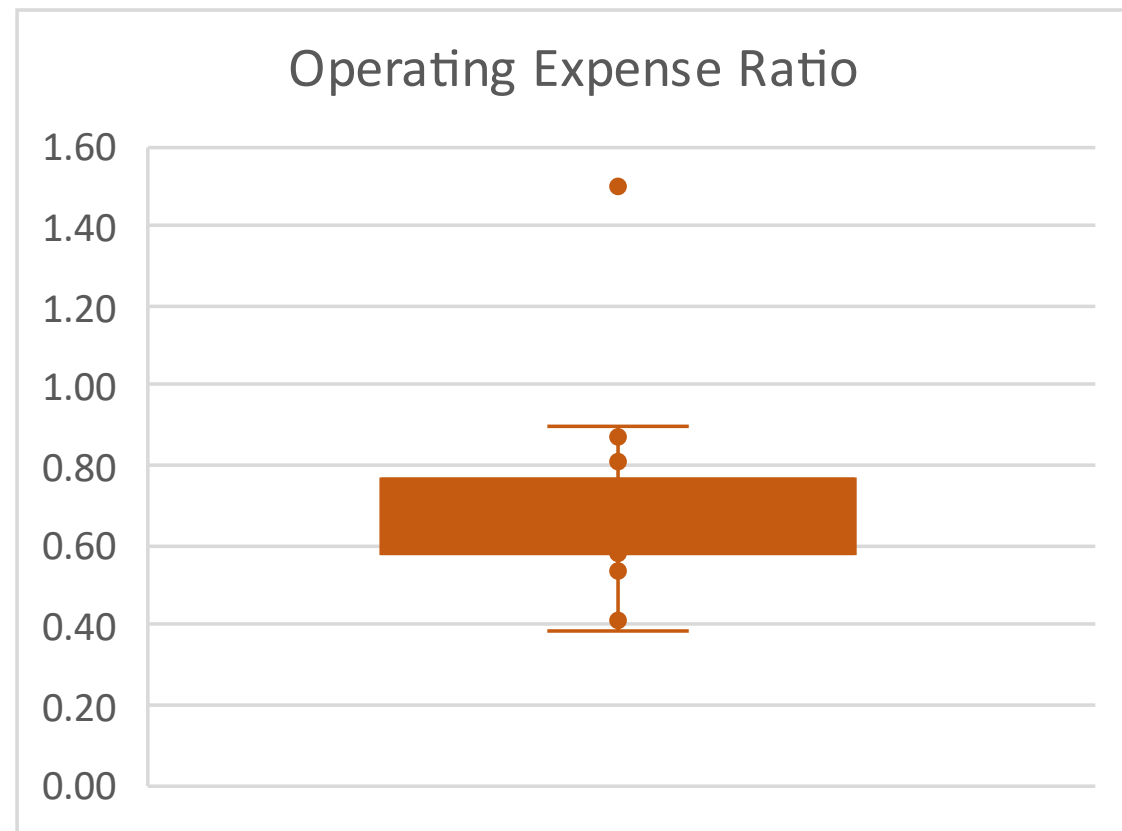


# Financial Efficiency: Operating Expense Ratio Production Type

## Conventional



## Organic

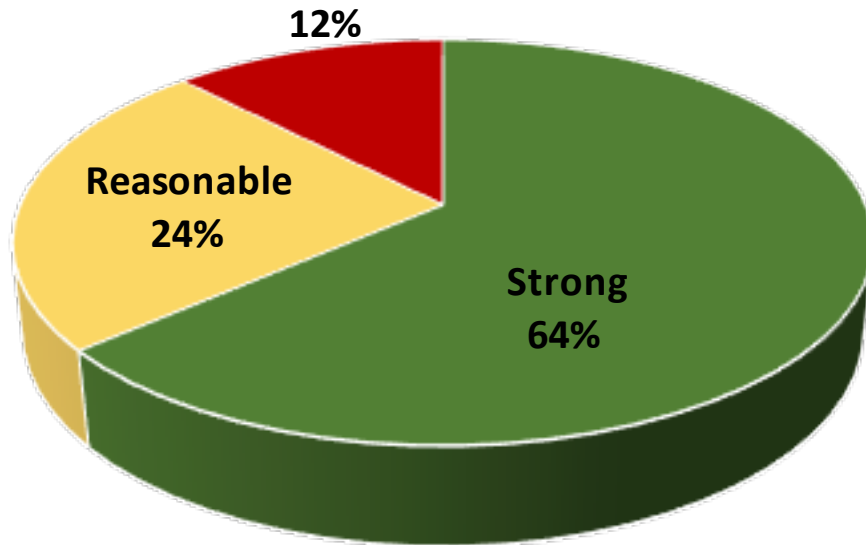


# Repayment: Debt to EBITDA Ratings

PA

MN

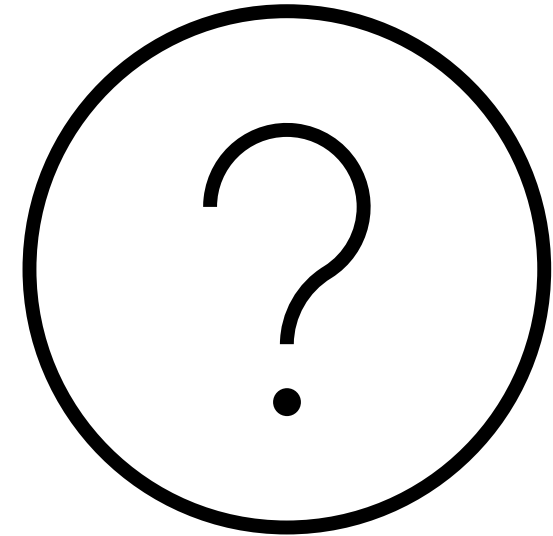
Debt to EBITDA Ratio Ratings <sup>2</sup>  
Vulnerable



Vulnerable: >6

Reasonable: 3-6

Strong: <3



<sup>2</sup> Recommended ratings based on debt per cow recommendations (Penn State, 2018) and average EBITDA per cow (Horizon Farm Credit, 2023).

# Indicators Under Review

- Rate of Return on Assets
  - Issue: average assets or just year end?
- Total Revenue to Total Labor Ratio
  - Multiple models to determine total labor/value of labor and management
- Assets & Debt per Cow
  - Assets: market vs. cost valuation
  - Operations at varying degrees of land investment/valuation



# Next Steps

- Article and Slides will be available on the Center's website:
  - Insert link here
- Increase Participation (220 is <5% of PA's current dairies)
  - Include more groups that have similar annual datasets
  - Reach out and expand herds participating
- Contact any of the Committee organizations if you or your customers are interested in participating in 2023 review

# Summary

- 2022 was a great year for dairy overall
- Time and growth are needed to see where PA dairies are trending
- Production (milk and components) & COP remain a challenge
- Again, contact any of the Committee organizations if you or your customers are interested in participating in 2023 review



# Questions

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