

Dairy Business Analysis Project: 2005 Financial Summary ¹

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Introduction

The Dairy Business Analysis Project (DBAP) was initiated in 1996 by the University of Florida in an effort to measure and document the financial performance of Florida dairy farms using standardized accounting measures. The University of Georgia has been a formal collaborator since 1998. A committee of dairy farmers appointed by Southeast Milk, Inc. oversees the project and helps direct its course. The DBAP website is <http://dairy.ifas.ufl.edu/programs/dbap.shtml>.

Financial data for the year 2005 were collected from participating dairy farms and screened for completeness and validity. Each dairy farm then received a benchmark report detailing its financial results compared to the average results for the other participants and the six dairy farms with the highest net farm income per cwt. This benchmark report is discussed with the dairy farms to identify challenges and opportunities for improvement.

This publication is a summary of the financial performance of the dairy farms that participated in 2005. It is intended for general use by dairy farmers,

the allied industry, and government and educational professionals.

Data Collection and Accounting Methods

Dairy farms in Florida and Georgia were asked to participate in DBAP. Participants were not a random sample of all dairy farms in the two states. The financial performance results in this publication are therefore not necessarily representative of the results of all dairy farms in Florida and Georgia.

Most of the data were collected by extension agents when visiting dairy farms using a standardized data collection spreadsheet. Occasionally, data were sent in by the dairy farms. The financial data were either entered into the spreadsheet on the farm or mailed in on paper copies of the spreadsheet.

The accounting methods followed the recommendations made by the Farm Financial Standards Council.³ All revenues and expenses were accrual adjusted. Cash receipts and expenses were therefore adjusted for changes in inventory, prepaid expenses, accounts payable, and accounts receivable.

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Depreciation data were often taken from tax records. Asset valuation was based on market values if available, but the changes from January 1 to December 31 were kept small. Unpaid management was valued at \$50,000 per farm. Gain or loss on sale of purchased livestock resulted when livestock depreciation did not completely account for the gain or loss in the value of the purchased livestock during 2005. Appreciation resulted when machinery and building depreciation did not completely account for the gain or loss in the value of these capital assets during 2005. The bottom line of each dairy farm is its net farm income. Net farm income is the return to the owner and unpaid family members for their labor, management, and equity in the dairy farm. It is the total income available for owner's salary, new investments, taxes, and paying off principal.

All submitted data were carefully scrutinized and checked for completeness. The cash flow statement reconciles the net cash flow resulting from the reported operating, investing, and financing activities with the reported available cash on the January 1 and December 31 balance sheets. The equity statement reconciles the changes in equity through reported retained capital and valuation with the calculated equity on the balance sheets. The reconciliation attempts typically result in unresolved imbalances. Both cash flow imbalance and equity imbalance had to be less than 10% to be included in the summary results reported here.

All results in this publication are the simple averages of the statistics of the dairy farms with valid data. Every dairy farm has equal weight. For example, assume a 100-cow herd produced 1,700,000 lbs of milk (17,000 lbs/cow) and a 1000-cow herd produced 19,000,000 lbs of milk (19,000 lbs / cow). Average milk yield per farm is $(19,000,000 + 1,700,000) / 2 = 10,350,000$ lbs and average herd size is $(100 + 1000) / 2 = 550$ cows. The weighted average milk yield per cow is $10,350,000 / 550 = 18,818$ lbs/cow. The simple average milk yield per cow is $(17,000 + 19,000) / 2 = 18,000$ lbs/cow.

Some definitions and calculation rules are as follows:

- Asset turnover ratio = total revenues / average assets
- Assets = value of assets on the balance sheet
- Average assets = average of value of assets on January 1 and December 31
- Average equity = average of value of equity on January 1 and December 31
 - Capital replacement and term debt repayment margin = Net Farm Income from Operations (NFIFO) + depreciation + interest on term debt – net social security and income taxes – owner withdrawals – annual scheduled payments on term debt and capital leases
- Cash flow coverage ratio = (cash revenues – cash expenses) / current liabilities
- Current assets = short-term assets that can be utilized within one year
- Current liabilities = liabilities due within one year
- Current ratio = current assets / current liabilities
- Debt to asset ratio = liabilities / assets
- Debt to equity ratio = liabilities / equity
- Depreciation expense ratio = depreciation / total revenue
- Equity = assets - liabilities
- Equity to asset ratio = equity / assets
- FTE = full time equivalent worker, on average 54 hours per week
- Interest expense ratio = interest paid / total revenue
- Liabilities = value of liabilities on the balance sheet
- Net farm income = NFIFO + gain on sale of capital assets

- NFIFO = net farm income from operations
- NFIFO ratio = NFIFO / total revenue
- Operating expense ratio = (total operating expenses – depreciation) / total revenue
- Operating profit margin ratio = (NFIFO + interest paid – unpaid management) / total revenues
- Rate of return on dairy assets = (NFIFO + interest paid – unpaid management) / average assets
- Rate of return on equity = (NFIFO – unpaid management) / average equity
- Std = standard deviation
- Term debt and capital lease coverage ratio = (NFIFO + non dairy income + depreciation + interest paid on term debt – net social security and income taxes – owner withdrawals) / (annual scheduled payments on term debt and capital leases)
- Working capital = current assets - current liabilities

Results

Summary results are presented in Tables 1.1 to 4.4 and Figures 1 to 5. Revenues and expenses may not add up due to rounding. In brief, twenty-one dairy farms were included in the summary results. Of these, 15 were located in Florida and 6 in Georgia. The average herd size of the participating dairies was 1045 cows and 538 heifers with 18,322 lbs. milk sold per cow. The average culling rate was 36%. The average milk price was \$18.24. Average total revenues were \$20.73 per cwt. milk sold. Total expenses averaged \$20.20 per cwt. sold. The largest items were purchased feed, \$7.22, and personnel costs, \$3.50. Net farm income from operations averaged \$0.53 per cwt. sold. Net farm income per cwt. was \$0.07.

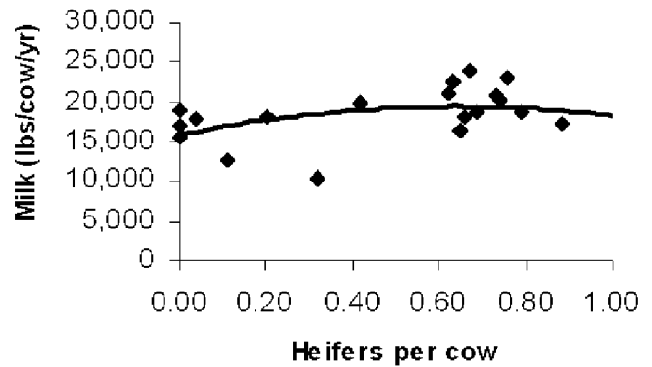


Figure 1. DBAP 2005 Summary - Milk production (lbs/cow/year) by heifers per cow.

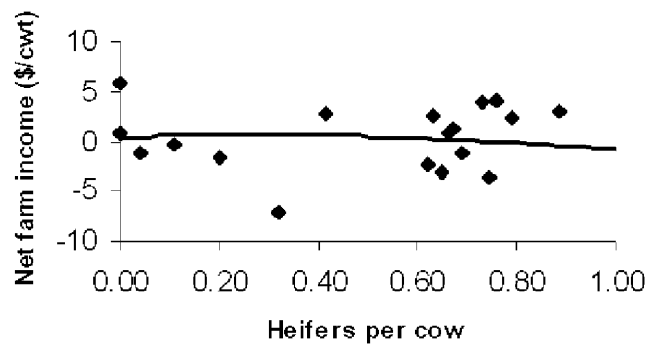


Figure 2. DBAP 2005 Summary - Net farm income (\$/cwt) by heifers per cow.

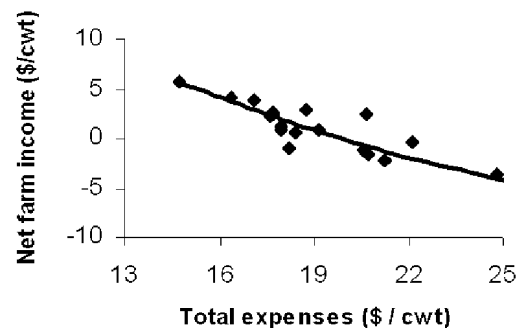


Figure 3. DBAP 2005 Summary - Net farm income (\$/cwt) by total expenses (\$/cwt).

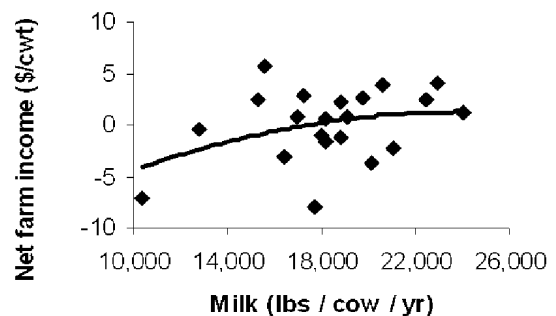


Figure 4. DBAP 2005 Summary - Net farm income (\$/cwt) by milk yield (lbs/cow/year).

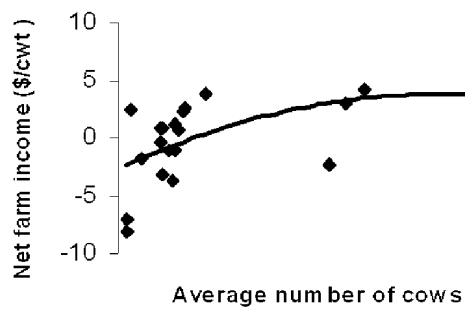


Figure 5. DBAP 2005 Summary - Net farm income per cwt (\$) by average number of cows. The x-axis is not displayed to avoid possible identification of dairy farms.

Additional Notes:

- 3. Farm Financial Standards Council. 1997. Financial Guidelines for Agricultural Producers.

Table 1.1. DBAP 2005 Summary - Business size and production efficiency by state and overall average, median, and standard deviation.

Category	Overall			State Averages	
	Average	Median	Std ¹	Florida	Georgia
Number of farms	21	21	21	15	6
Business Size:					
• Average number of cows	1,045	575	1,157	1,155	770
• Average number of heifers	538	290	720	543	527
• Milk sold (million lbs)	20.21	10.99	22.96	21.53	16.94
• FTE ² workers	19	12	17	20	16
• Acres of pasture + cultivated land	569	320	732	633	410
Production Efficiency:					
• Milk sold (lbs / cow / year)	18,322	18,168	3,237	17,659	19,979
• Cows / FTE worker	51	52	25	55	40
• Milk sold / FTE worker (million lbs)	0.93	0.94	0.44	0.97	0.82
• Cull rate	36%	32%	21%	31%	47%

¹Standard deviation.²Full-time equivalent.**Table 1.2.** DBAP 2005 Summary - Revenues and expenses by state and overall average, median, and standard deviation (\$/cwt).

Category	Overall			State Averages	
	Average	Median	Std ¹	Florida	Georgia
Number of farms	21	21	21	15	6
Revenues:					
Milk sold	18.24	18.28	0.62	18.38	17.89
Raised, leased cow sales	0.89	0.33	1.41	0.60	1.62
Heifer sales	0.45	0.36	0.44	0.50	0.33
Gain on purchased livestock sales	(0.13)	(0.06)	0.83	(0.37)	0.48
Other revenues	1.28	0.78	1.45	1.30	1.23
Total revenues	20.73	20.24	2.21	20.41	21.55
Expenses:					
• Personnel	3.50	3.08	1.42	3.43	3.69
• Purchased feed	7.22	6.81	2.33	7.96	5.36
• Crops	0.41	0.13	0.59	0.34	0.58
• Machinery	1.11	1.00	0.75	1.18	0.94
• Livestock	2.01	1.92	0.90	1.99	2.06
• Milk marketing	1.22	1.30	0.24	1.19	1.32
• Buildings and land	0.74	0.44	1.01	0.52	1.30
• Interest	0.67	0.56	0.61	0.69	0.61
Depreciation:					
• Livestock	1.11	0.97	1.07	1.11	1.12
• Machinery	0.81	0.40	0.85	0.76	0.95
• Buildings	0.39	0.25	0.42	0.37	0.44
Other expenses	1.01	1.03	0.38	1.06	0.89

Table 1.2. DBAP 2005 Summary - Revenues and expenses by state and overall average, median, and standard deviation (\$/cwt).

Total expenses	20.20	18.73	3.80	20.59	19.25
Net farm income from operations	0.53	0.84	3.20	(0.18)	2.30
Gain on sale of capital assets	(0.46)	0.00	1.37	(0.03)	(1.56)
Net farm income	0.07	0.84	3.54	(0.20)	0.74

¹ Standard deviation**Table 1.3.**

Category	Overall			State Averages	
	Average	Median	Std ¹	Florida	Georgia
Number of farms	21	21	21	15	6
Liquidity:					
• Current ratio	5.78	0.61	17.47	1.53	16.42
• Working capital (\$)	123,069	21,375	673,678	(23,839)	490,338
Solvency:					
• Debt to asset ratio	0.39	0.34	0.26	0.40	0.38
• Equity to asset ratio	0.61	0.66	0.26	0.60	0.62
• Debt to equity ratio ²	2.47	0.52	5.88	1.75	4.26
Profitability:					
• Rate of return on assets	0.04	0.04	0.10	0.03	0.09
• Rate of return on equity	0.02	0.02	0.35	(0.06)	0.24
• Operating profit margin ratio	0.02	0.03	0.17	(0.01)	0.08
Financial efficiency:					
• Asset turnover rate	0.78	0.81	0.37	0.80	0.71
• Operating expense ratio	0.83	0.84	0.15	0.86	0.75
• Depreciation expense ratio	0.11	0.10	0.06	0.11	0.11
• Interest expense ratio	0.03	0.03	0.03	0.03	0.03
• FIFO ratio ³	0.03	0.04	0.15	(0.01)	0.10
Repayment capacity:					
• Cash flow coverage ratio	5.96	0.58	19.28	0.71	19.08
• Term debt coverage ratio ⁴	2.90	0.42	7.30	3.77	0.72
• Capital replacement margin ⁵ (\$)	321,516	69,895	971,525	193,709	641,032

¹ Standard deviation.² One dairy farm had negative equity.³ Net farm income from operations ratio.⁴ Term debt and capital lease coverage ratio.⁵ Capital replacement and term debt repayment margin.

Table 1.4. DBAP 2005 Summary - Balance sheet by state and overall average, median, and standard deviation (\$/cow).

Category	Overall			State Averages	
	Average	Median	Std ¹	Florida	Georgia
Number of farms	21	21	21	15	6
Balance sheet (January 1):					
• Current assets	428	306	268	316	709
• Total assets	6,800	4,176	5,763	5,502	10,044
• Current liabilities	507	408	379	581	324
• Total liabilities	1,810	1,825	1,163	1,668	2,164
• Equity	4,990	2,415	6,108	3,834	7,880
Balance sheet (December 31):					
• Current assets	487	368	317	425	641
• Total assets	6,668	4,733	5,315	5,365	9,925
• Current liabilities	386	344	414	521	49
• Total liabilities	1,896	1,914	1,159	1,854	2,001
• Equity	4,772	2,657	5,724	3,511	7,924

¹ Standard deviation**Table 2.1.** DBAP 2005 Summary - Business size and production efficiency by average number of cows and milk per cow.

Category	Average number of cows			Milk yield (lbs / cow / year)		
	< 446	446-670	> 670	< 17,300	17,300-19,500	> 19,500
Number of farms	7	7	7	7	7	7
Business Size:						
• Average number of cows	261	562	2,312	1,117	447	1,571
• Average number of heifers	50	348	1,218	363	215	1,038
• Milk sold (million lbs)	4.24	10.86	45.54	17.84	8.29	34.51
• FTE workers	7	14	36	15	9	33
• Acres of pasture + cultivated land	142	397	1,169	613	298	798
Production Efficiency:						
• Milk sold (lbs / cow / year)	15,777	19,225	19,963	14,950	18,420	21,594
• Cows / FTE worker	37	49	66	58	47	47
• Milk sold / FTE worker (million lbs)	0.59	0.93	1.26	0.89	0.88	1.02
• Cull rate	42%	34%	31%	44%	34%	29%

Table 2.2. DBAP 2005 Summary - Revenues and expenses by average number of cows and milk per cow (\$/cwt).

Category	Average number of cows			Milk yield (lbs / cow / year)		
	< 446	446-670	> 670	< 17,300	17,300-19,500	> 19,500
Number of farms	7	7	7	7	7	7
Revenues:						
• Milk sold	17.95	18.14	18.63	18.32	18.08	18.32
• Raised, leased cow sales	1.08	0.96	0.63	1.47	0.37	0.84

Table 2.2. DBAP 2005 Summary - Revenues and expenses by average number of cows and milk per cow (\$/cwt).

• Heifer sales	0.38	0.34	0.64	0.37	0.36	0.63
• Gain on purchased livestock sales	0.14	(0.46)	(0.07)	0.07	(0.43)	(0.03)
• Other revenues	2.01	1.22	0.61	2.23	1.08	0.52
• Total revenues	21.57	20.20	20.44	22.46	19.46	20.29
Expenses:						
• Personnel	4.04	3.63	2.85	3.31	3.96	3.24
• Purchased feed	7.31	7.36	6.99	7.92	7.28	6.46
• Crops	0.29	0.72	0.22	0.37	0.32	0.54
• Machinery	0.95	1.53	0.85	0.93	1.04	1.35
• Livestock	2.16	1.92	1.96	2.23	1.91	1.89
• Milk marketing	1.34	1.06	1.27	1.29	1.17	1.22
• Buildings and land	1.37	0.57	0.29	1.00	0.96	0.27
• Interest	0.93	0.52	0.55	0.93	0.45	0.61
Depreciation:						
• Livestock	1.67	0.67	0.99	1.70	0.92	0.71
• Machinery	0.88	1.14	0.42	0.63	0.75	1.05
• Buildings	0.23	0.53	0.41	0.41	0.09	0.66
• Other expenses	1.05	1.12	0.86	1.05	1.00	0.98
• Total expenses	22.22	20.75	17.65	21.78	19.86	18.98
• Net farm income from operations	(0.65)	(0.55)	2.79	0.68	(0.40)	1.31
• Gain on sale of capital assets	(1.23)	(0.17)	0.00	(0.50)	(0.77)	(0.12)
• Net farm income	(1.88)	(0.72)	2.79	0.18	(1.17)	1.19

Table 2.3. DBAP 2005 Summary - Financial performance by average number of cows and milk per cow.

Category	Average number of cows			Milk yield (lbs / cow / year)		
	< 446	446-670	> 670	< 17,300	17,300-19,500	> 19,500
Number of farms	7	7	7	7	7	7
Liquidity:						
• Current ratio	0.46	12.66	4.22	1.77	0.41	15.16
• Working capital (\$)	24,649	7,679	336,879	207,250	(32,694)	194,650
Solvency:						
• Debt to asset ratio	0.48	0.30	0.40	0.38	0.43	0.36
• Equity to asset ratio	0.52	0.70	0.60	0.62	0.57	0.64
• Debt to equity ratio ¹	5.99	0.65	0.77	0.79	5.92	0.70
Profitability:						
• Rate of return on assets	(0.01)	(0.01)	0.15	0.04	(0.00)	0.09
• Rate of return on equity	(0.08)	(0.05)	0.20	0.02	(0.07)	0.12
• Operating profit margin ratio	(0.08)	(0.02)	0.15	0.01	(0.04)	0.08
Financial efficiency:						
• Asset turnover rate	0.74	0.67	0.93	0.77	0.83	0.73
• Operating expense ratio	0.86	0.89	0.75	0.81	0.90	0.79
• Depreciation expense ratio	0.13	0.11	0.09	0.12	0.09	0.12
• Interest expense ratio	0.04	0.03	0.03	0.04	0.02	0.03
• FIFO ratio ²	(0.03)	(0.02)	0.13	0.03	(0.02)	0.06

Table 2.3. DBAP 2005 Summary - Financial performance by average number of cows and milk per cow.

Repayment capacity:						
• Cash flow coverage ratio	0.15	13.03	4.68	0.57	0.74	16.56
• Term debt coverage ratio ³	0.53	1.49	6.67	5.11	1.30	2.28
• Capital replacement margin ⁴ (\$)	(1,170)	69,793	895,924	342,885	35,085	586,576

¹One dairy farm had negative equity.

²Net farm income from operations ratio.

³Term debt and capital lease coverage ratio.

⁴Capital replacement and term debt repayment margin.

Table 2.4. DBAP 2005 Summary - Balance sheet by average number of cows and milk per cow (\$/cow).

Category	Average number of cows			Milk yield (lbs / cow / year)		
	< 446	446-670	> 670	< 17,300	17,300-19,500	> 19,500
Number of farms	7	7	7	7	7	7
Balance sheet (January 1):						
• Current assets	336	350	599	334	291	660
• Total assets	8,343	7,651	4,405	5,512	6,846	8,042
• Current liabilities	471	453	599	491	547	484
• Total liabilities	1,877	1,604	1,949	1,858	1,374	2,197
• Equity	6,466	6,047	2,457	3,654	5,471	5,844
Balance sheet (December 31):						
• Current assets	374	311	775	541	242	676
• Total assets	8,526	6,726	4,751	5,715	7,017	7,271
• Current liabilities	223	304	631	410	259	490
• Total liabilities	2,061	1,623	2,004	2,015	1,504	2,169
• Equity	6,465	5,102	2,747	3,700	5,513	5,102

Table 3.1. DBAP 2005 Summary - Business size and production efficiency by net farm income per cwt and rate of return on assets.

Category	Net farm income (\$ / cwt)			Rate of return on assets (%)		
	< \$(1.13)	\$(1.13) - \$2.30	> \$2.30	(3)%	(3)% - 9.5%	>9.5%
Number of farms	7	7	7	8	6	7
Business Size:						
• Average number of cows	591	523	2,022	580	435	2,100
• Average number of heifers	373	198	1,044	329	161	1,101
• Milk sold (million lbs)	11.63	9.70	39.32	11.31	8.02	40.85
• FTE workers	15	10	32	14	9	33
• Acres of pasture + cultivated land	653	273	782	572	304	795
Production Efficiency:						
• Milk sold (lbs / cow / year)	17,549	18,283	19,133	17,603	17,734	19,646
• Cows / FTE worker	37	55	61	39	47	67
• Milk sold / FTE worker (million lbs)	0.65	1.00	1.13	0.70	0.83	1.27
• Cull rate	33%	32%	43%	34%	45%	31%

Table 3.2. DBAP 2005 Summary - Revenues and expenses by net farm income per cwt and rate of return on assets (\$/cwt).

Category	Net farm income (\$ / cwt)			Rate of return on assets (%)		
	< \$(1.13)	\$(1.13) - \$2.30	> \$2.30	< (3)%	(3)% - 9.5%	>9.5%
Number of farms	7	7	7	8	6	7
Revenues:						
Milk sold	18.14	18.17	18.42	18.08	17.97	18.66
Raised, leased cow sales	0.95	0.25	1.47	0.83	1.13	0.76
Heifer sales	0.44	0.33	0.58	0.48	0.26	0.58
Gain on purchased livestock sales	(0.48)	(0.22)	0.30	(0.62)	0.46	(0.07)
Other revenues	2.27	0.84	0.72	2.03	1.00	0.66
Total revenues	21.33	19.38	21.49	20.80	20.81	20.59
Expenses:						
• Personnel	4.60	3.11	2.80	4.48	3.13	2.70
• Purchased feed	8.38	7.24	6.04	8.29	6.25	6.83
• Crops	0.51	0.27	0.45	0.44	0.51	0.28
• Machinery	1.56	0.84	0.94	1.43	0.95	0.88
• Livestock	1.97	2.02	2.05	1.96	2.01	2.07
• Milk marketing	1.27	1.11	1.30	1.19	1.26	1.23
• Buildings and land	1.14	0.67	0.42	1.00	0.93	0.29
• Interest	0.91	0.60	0.49	0.89	0.67	0.40
Depreciation:						
• Livestock	1.05	0.90	1.39	1.11	1.40	0.87
• Machinery	1.15	0.78	0.52	1.03	1.04	0.37
• Buildings	0.54	0.21	0.42	0.47	0.34	0.33
Other expenses	1.22	1.04	0.77	1.22	0.87	0.89
Total expenses	24.27	18.77	17.57	23.51	19.37	17.14
Net farm income from operations	(2.94)	0.60	3.92	(2.71)	1.44	3.45
Gain on sale of capital assets	(0.94)	0.00	(0.46)	(0.82)	(0.53)	0.00
Net farm income	(3.87)	0.61	3.47	(3.53)	0.91	3.45

Table 3.3. DBAP 2005 Summary - Financial performance by net farm income per cwt and rate of return on assets.

Category	Net farm income (\$ / cwt)			Rate of return on assets (%)		
	< \$(1.13)	\$(1.13) - \$2.30	> \$2.30	< (3)%	(3)% - 9.5%	>9.5%
Number of farms	7	7	7	8	6	7
Liquidity:						
• Current ratio	1.02	12.16	4.17	0.99	13.96	4.25
• Working capital (\$)	(307,705)	24,654	652,257	(275,332)	74,306	620,181
Solvency:						
• Debt to asset ratio	0.39	0.45	0.34	0.41	0.44	0.33
• Equity to asset ratio	0.61	0.55	0.66	0.59	0.56	0.67
• Debt to equity ratio ¹	2.90	3.94	0.57	2.70	4.38	0.57
Profitability:						
• Rate of return on assets	(0.06)	0.03	0.16	(0.06)	0.03	0.17
• Rate of return on equity	(0.27)	0.10	0.24	(0.25)	0.13	0.25

Table 3.3. DBAP 2005 Summary - Financial performance by net farm income per cwt and rate of return on assets.

• Operating profit margin ratio	(0.17)	0.03	0.18	(0.15)	0.05	0.18
Financial efficiency:						
• Asset turnover rate	0.55	0.90	0.89	0.57	0.82	0.98
• Operating expense ratio	0.97	0.84	0.69	0.96	0.78	0.74
• Depreciation expense ratio	0.13	0.10	0.10	0.13	0.13	0.08
• Interest expense ratio	0.04	0.03	0.02	0.04	0.03	0.02
• FIFO ratio ²	(0.14)	0.03	0.18	(0.13)	0.06	0.17
Repayment capacity:						
• Cash flow coverage ratio	0.08	13.12	4.67	0.23	14.84	4.89
• Term debt coverage ratio ³	1.26	0.82	6.61	1.21	0.48	6.90
• Capital replacement margin ⁴ (\$)	(324,083)	60,030	1,228,600	(291,751)	74,639	1,234,001

¹One dairy farm had negative equity.

²Net farm income from operations ratio.

³Term debt and capital lease coverage ratio.

⁴Capital replacement and term debt repayment margin.

Table 3.4. DBAP 2005 Summary - Balance sheet by net farm income per cwt and rate of return on assets (\$/cow).

Category	Net farm income (\$/cwt)			Rate of return on assets (%)		
	< \$(1.13)	\$(1.13) - 2.30	> \$2.30	< (3)%	(3)% - 9.5%	> 9.5%
Number of farms	7	7	7	8	6	7
Balance sheet (January 1):						
• Current assets	337	302	646	330	428	541
• Total assets	10,601	4,794	5,004	9,766	6,119	3,993
• Current liabilities	570	506	446	535	543	446
• Total liabilities	1,930	1,828	1,671	1,950	1,982	1,502
• Equity	8,672	2,966	3,332	7,816	4,137	2,491
Balance sheet (December 31):						
• Current assets	288	340	831	288	486	714
• Total assets	9,884	4,634	5,486	9,153	5,952	4,441
• Current liabilities	468	294	397	457	222	446
• Total liabilities	2,078	1,791	1,819	2,106	2,017	1,553
• Equity	7,806	2,843	3,666	7,048	3,935	2,888

Table 4.1. DBAP 2005 Summary - Business size and production efficiency by assets per cow and liabilities per cow.

Category	Assets (\$ / cow)			Liabilities (\$ / cow)		
	< \$4,000	\$4,000 - \$5,600	> \$5,600	< \$1,340	\$1,340 - \$2,500	> \$2,500
Number of farms	7	7	7	7	7	7
Business Size:						
• Average number of cows	1,167	1,331	638	1,212	1,049	874
• Average number of heifers	710	471	434	886	142	588
• Milk sold (million lbs)	22.87	24.49	13.28	24.24	17.69	18.71

Table 4.1. DBAP 2005 Summary - Business size and production efficiency by assets per cow and liabilities per cow.

• FTE workers	22	18	17	27	14	17
• Acres of pasture + cultivated land	426	558	725	608	424	677
Production Efficiency:						
• Milk sold (lbs/cow/year)	17,947	18,535	18,483	19,077	17,549	18,339
• Cows / FTE worker	52	66	34	45	65	43
• Milk sold / FTE worker (million lbs)	0.93	1.20	0.65	0.85	1.10	0.82
• Cull rate	30%	33%	45%	35%	29%	43%

Table 4.2. DBAP 2005 Summary - Revenues and expenses by assets per cow and liabilities per cow (\$/cwt).

Category	Assets (\$ / cow)			Liabilities (\$ / cow)		
	< \$4,000	\$4,000 -\$5,600	> \$5,600	< \$1,340	\$1,340 -\$2,500	> \$2,500
Number of farms	7	7	7	7	7	7
Revenues:						
• Milk sold	18.53	18.31	17.88	18.26	18.55	17.92
• Raised, leased cow sales	0.51	0.78	1.39	0.79	0.05	1.84
• Heifer sales	0.35	0.55	0.45	0.49	0.58	0.29
• Gain on purchased livestock sales	(0.01)	(0.58)	0.20	0.04	(0.40)	(0.04)
• Other revenues	0.80	1.30	1.73	1.03	1.02	1.78
• Total revenues	20.18	20.37	21.65	20.61	19.80	21.79
Expenses:						
• Personnel	2.86	3.14	4.51	4.31	2.85	3.35
• Purchased feed	7.64	7.88	6.14	6.95	6.90	7.81
• Crops	0.15	0.35	0.73	0.58	0.25	0.40
• Machinery	0.88	0.99	1.46	1.38	0.78	1.17
• Livestock	2.30	1.37	2.37	2.60	1.67	1.76
• Milk marketing	1.23	1.21	1.24	1.09	1.28	1.30
• Buildings and land	0.73	0.48	1.01	0.88	0.56	0.79
• Interest	0.51	0.59	0.90	0.13	0.62	1.24
Depreciation						
• Livestock	1.03	1.36	0.94	0.20	1.36	1.77
• Machinery	0.60	0.54	1.30	0.97	0.66	0.81
• Buildings	0.21	0.33	0.62	0.31	0.25	0.61
Other expenses	1.01	0.84	1.18	1.09	0.94	1.00
Total expenses	19.14	19.08	22.39	20.48	18.13	22.00
Net farm income from operations	1.04	1.29	(0.73)	0.13	1.67	(0.21)
Gain on sale of capital assets	(0.01)	(0.15)	(1.22)	(0.78)	0.13	(0.74)
Net farm income	1.03	1.13	(1.96)	(0.65)	1.80	(0.94)

Table 4.3. DBAP 2005 Summary - Financial performance by assets per cow and liabilities per cow.

Category	Assets (\$ / cow)			Liabilities (\$ / cow)		
	< \$4,000	\$4,000 -\$5,600	> \$5,600	< \$1,340	\$1,340 -\$2,500	> \$2,500
Number of farms	7	7	7	7	7	7
Liquidity:						
• Current ratio	1.82	2.58	12.94	2.27	1.37	13.70
• Working capital (\$)	234,881	240,634	(106,309)	224,631	172,138	(27,563)
Solvency:						
• Debt to asset ratio	0.50	0.43	0.25	0.14	0.53	0.51
• Equity to asset ratio	0.50	0.57	0.75	0.86	0.47	0.49
• Debt to equity ratio ¹	6.02	0.92	0.47	0.19	4.11	3.11
Profitability:						
• Rate of return on assets	0.06	0.06	0.00	0.04	0.08	0.01
• Rate of return on equity	0.02	0.08	(0.03)	0.05	0.18	(0.16)
• Operating profit margin ratio	0.05	0.07	(0.07)	(0.02)	0.09	(0.02)
Financial efficiency:						
• Asset turnover rate	1.13	0.81	0.39	0.77	0.96	0.61
• Operating expense ratio	0.83	0.80	0.87	0.91	0.77	0.81
• Depreciation expense ratio	0.09	0.11	0.13	0.07	0.12	0.14
• Interest expense ratio	0.03	0.03	0.04	0.01	0.03	0.06
• NFIFO ratio ²	0.05	0.06	(0.04)	0.01	0.08	(0.01)
Repayment capacity:						
• Cash flow coverage ratio	1.10	3.89	12.88	0.92	1.11	15.83
• Term debt coverage ratio ³	1.57	6.04	1.08	1.80	6.08	0.81
• Capital replacement margin ⁴ (\$)	458,418	684,602	(178,473)	499,638	349,460	115,449

¹One dairy farm had negative equity.

²Net farm income from operations ratio.

³Term debt and capital lease coverage ratio.

⁴Capital replacement and term debt repayment margin.

Table 4.4. DBAP 2005 Summary - Balance sheet by assets per cow and liabilities per cow (\$/cow).

Category	Assets (\$/cow)			Liabilities (\$/cow)		
	< \$4,000	\$4,000 -\$5,600	> \$5,600	< \$1,340	\$1,340 -\$2,500	> \$2,500
Number of farms	7	7	7	7	7	7
Balance sheet (January 1):						
• Current assets	264	392	629	377	407	501
• Total assets	3,194	4,380	12,825	9,048	3,622	7,730
• Current liabilities	539	629	354	350	505	667
• Total liabilities	1,442	1,830	2,157	571	1,783	3,075
• Equity	1,752	2,550	10,668	8,477	1,838	4,655
Balance sheet (December 31):						
• Current assets	349	544	566	338	643	478
• Total assets	3,397	4,636	11,970	8,657	3,986	7,360
• Current liabilities	275	541	342	249	509	400

Table 4.4. DBAP 2005 Summary - Balance sheet by assets per cow and liabilities per cow (\$/cow).

• Total liabilities	1,614	1,972	2,103	621	1,921	3,147
• Equity	1,784	2,665	9,867	8,037	2,065	4,213
