

DBAP 2003: What We Have Learned About Your Business¹

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Introduction

The Dairy Business Analysis Project (**DBAP**) is an extension effort of the University of Florida and the University of Georgia designed to measure and analyze the economic performance of dairies located primarily in Florida and Georgia in a standardized way. In this paper we first give a brief overview of the procedures used in DBAP and provide some insight in which dairies DBAP represents. Secondly, we'll present the results for 2003, with attention to historic trends and variation among dairies. Finally, we briefly discuss the association between herd size, milk production, cost control and profitability.

Overview of DBAP Procedures

The basis of DBAP is the annual survey. Financial and production data from January 1 to December 31 are collected the following year by extension personnel visiting the dairies or are submitted directly by the producers using a standardized data collection spreadsheet. The DBAP data collection spreadsheet consists of 11 pages. All dairy-related cash receipts and expenses are collected, including those for young stock and cropping enterprises. In addition, we ask for feed and livestock inventories, changes in accounts payable and receivable, terms of liabilities and the market value of assets at the start and end of the year. All submitted data are carefully scrutinized and checked for completeness.

The accounting methods in DBAP follow the recommendations made by the Farm Financial Standards Council (1997). Accrual accounting is used: cash receipts and expenses are adjusted for changes in inventory, prepaid expenses, depreciation, and accounts payable and receivable. Revenues include milk sales, livestock sales, feed and crop sales, and other revenues. Costs include expenses for personnel, feed, machinery, livestock, milk marketing, depreciation, and

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other dairy expenses. Revenues and costs are not separated for different enterprises, because these allocations are typically not available.

Besides a calculation of the revenues and costs per cwt milk produced, some other results are calculated for each participating dairy, including the balance sheets on January 1 and December 31, the income statement (profit and loss statement), and the “sweet 16” financial ratios that summarize financial performance. Profitability measures include net farm income per cwt, return on assets, and return on equity. Two pages of results summarize the critical success factors for each year the dairy has participated in DBAP. After 8 years of DBAP, these trends provide a powerful picture of the direction the business has taken.

After the data collection for the year has been completed on all participating dairies, we calculate benchmarks such as the average revenues and costs and those for the top 6 most profitable dairies. These benchmarks are then combined with each dairy’s own results in a report that is returned to dairy and discussed during a visit. This report and the discussion typically point to strengths and weaknesses of the dairy and define possible actions to address the weaknesses.

Finally, the average results are published in extension documents made available to the general public and posted on the EDIS website <http://edis.ifas.ufl.edu> or the UF/IFAS dairy extension website <http://dairy.ifas.ufl.edu>.

Representation

From time to time, we get questions about what type of dairies participate in DBAP. Participation in DBAP by dairy producers is voluntary. This voluntary aspect has some limitations about the conclusions we can draw from the DBAP data. Because the dairies included in DBAP are not a random sample of all dairies located in Florida and Georgia, we cannot necessarily extend the results and make inferences about the financial performance of all dairies in Florida and Georgia. For example, the averages of the results calculated in DBAP are not necessarily the same as the averages of the entire dairy industry in Florida and Georgia. Still, many different kinds of dairies are included in DBAP; small, large, high producers, low producers, with younger owners and older owners. We believe that DBAP provides the best and most comprehensive financial picture of dairy business performance in Florida and Georgia.

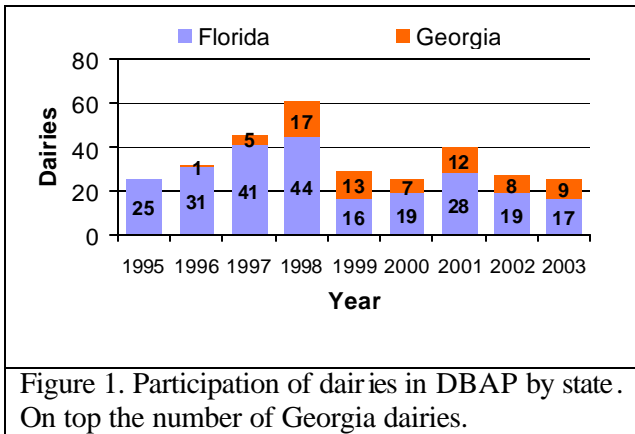


Figure 1. Participation of dairies in DBAP by state. On top the number of Georgia dairies.

Figure 1 shows the number of participating dairies from 1995 to 2003 that provided complete data (bottom = Florida, top = Georgia). In 2003, complete data was collected on 26 dairies, with 9 of those located in Georgia.

Figure 2 shows the distribution of the dairies by herdsize. The average herdsize in 2003 was 1316 cows, up 167 from 2002

and 339 from 2001. The average herdsize in 2004 in Florida is approximately 770 dairy cows (Florida Agriculture Statistical Directory, 2004) while it is smaller in Georgia. Thus DBAP dairies are on average larger than average dairies in Florida and Georgia.

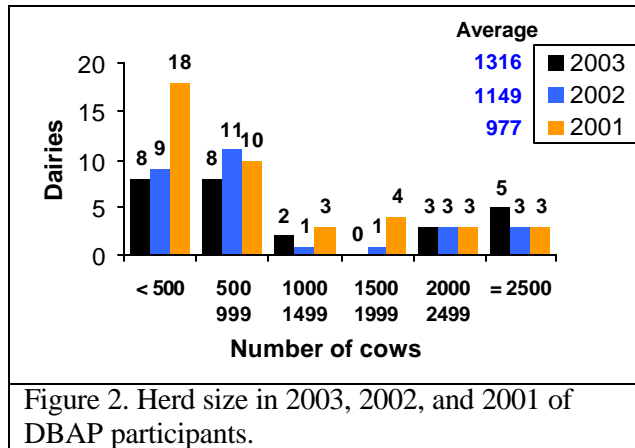


Figure 2. Herd size in 2003, 2002, and 2001 of DBAP participants.

Figure 3 shows the distribution of the percent young stock to cows on those dairies that raise their own young stock (above the 0% line) and the percentage of dairies that do not raise their own young stock (below the 0% line). From 1995 to

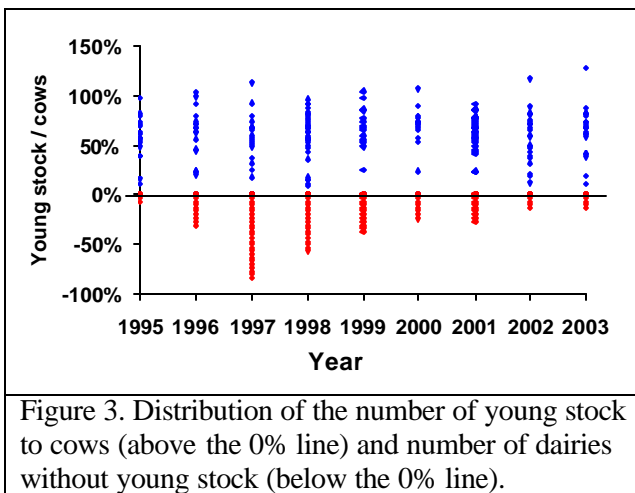


Figure 3. Distribution of the number of young stock to cows (above the 0% line) and number of dairies without young stock (below the 0% line).

2003, on average 33% of dairies reported a number of young stock that was less than 10% of the number of cows. The distribution of annual milk production per cow in DBAP dairies is shown

in **Figure 4**. The average for 2003 was 17,971 lbs / cow. This is more than the 15,218 lbs/cow reported as the Florida average in 2003 (Florida Agriculture Statistical Directory, 2004).

In summary, the dairies that participate in DBAP are on average larger and produce more milk per cow than the state averages. However, there is much variation among

dairies, as can be seen in Figures 2 through 4 and the remaining results.

2003 Results and Historic Trends

Data for the year 2003 were collected and completed for 26 dairies, of which 17 were located in Florida. **Table 1** lists average summary statistics for 1995 through 2003. When comparing the average results from year to year, keep in mind that the dairies represented in

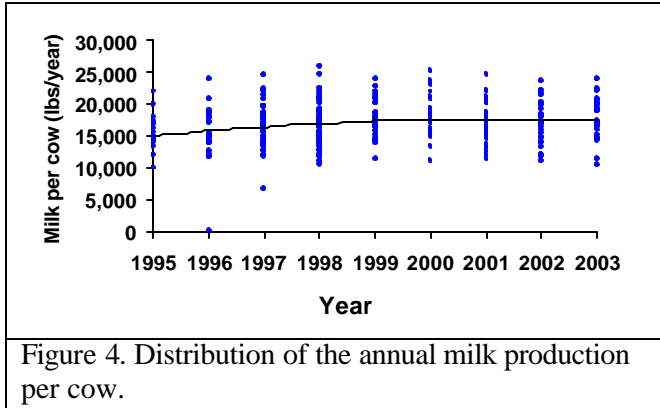


Figure 4. Distribution of the annual milk production per cow.

DBAP slightly change over time. For example, 5 dairies that submitted data in 2002 did not submit completed data in 2003. Some went out of business; others did not get around to collecting their data. On the other hand, 4 dairies submitted data in 2003 that did not have data for 2002.

Milk sales were on average \$15.89 / cwt in 2003. This is a decrease of \$0.17 compared to 2002 and \$2.35 compared to 2001 and the lowest price since 1996. Milk sales were calculated as the reported total milk revenue for the year divided by the reported volume of milk sold. The variation in milk sales / cwt among the 26 dairies is shown in **Figure 5**.

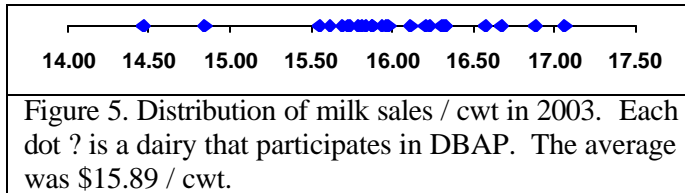


Figure 5. Distribution of milk sales / cwt in 2003. Each dot ? is a dairy that participates in DBAP. The average was \$15.89 / cwt.

Total non-milk dairy revenues were \$1.77 / cwt in 2003. These non-milk dairy revenues consist of leased and raised cow sales, gain in value of purchased livestock, heifers and calve sales, bull sales, feed sales, government receipts, custom work receipts, interest receipts, and other revenue.

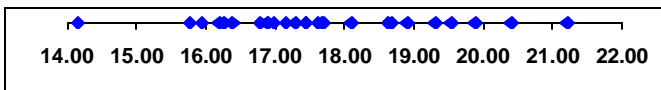
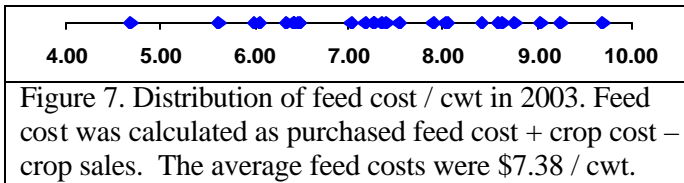


Figure 6. Distribution of total dairy revenues / cwt in 2003. The average was \$17.66 / cwt.

Milk sales and non-milk revenue added up to \$17.66 / cwt total dairy revenues. This is 1 cent higher than in 2002, but still the lowest after 1995 and 2002.

The variation in total dairy revenues was large, however, as can be seen in **Figure 6**.

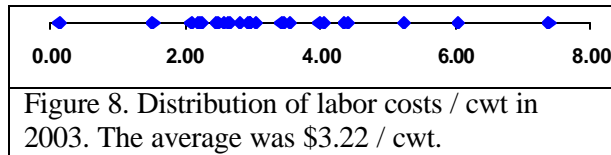
Looking at the cost side of milk production, purchased feed costs were \$7.16 / cwt while crop cost was \$0.43. Both fall within the historical averages. Total feed costs were \$7.38 / cwt. This



is calculated as purchased feed cost + crop cost – crop sales. Variation in feed costs is great, ranging from less than \$5 to almost \$10 / cwt (**Figure 7**).

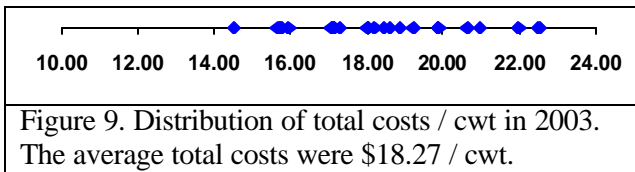
Average labor costs in 2003 were \$3.22 / cwt, the highest in the 8 years of DBAP. However, 3 dairies reported more than \$5 / cwt labor cost, with the majority in the \$2 to \$3 range (**Figure 8**).

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Machinery cost (\$0.82), livestock cost (\$1.95), milk marketing cost (\$1.11), buildings and land cost (\$0.52), depreciation of capital assets (\$1.65), and other dairy costs (\$1.43) add up to \$7.45 / cwt. The variation between dairies is significant (not shown).

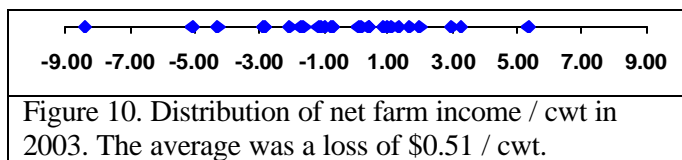


Average total costs / cwt in 2003 were \$18.27. This is the fifth year in a row with higher total costs than the previous year. The \$18.27 equals the previously

highest total cost reported for 1996. **Figure 9** shows that the range is more than \$8 / cwt.

Assets / cow in 2003 were \$6227, an all time high. This is \$909 higher than in 2002 and \$1488 higher than in 2001. Liabilities also increased to \$2017 / cow, the highest average in the 8 years of DBAP.

Profitability can be measured in different ways. DBAP calculates the net farm income from operations / cwt, calculated as the total revenue – total cost. After an adjustment for the gain in value of capital assets, this results in net farm income / cwt. Net farm income / cwt in 2003 was a loss of \$0.51 / cwt. This is the worst result since the start of DBAP with the 1996 data. The distribution is shown in **Figure 10**, which indicates that 50% of the dairies had a positive net farm income. Return on assets and return



on equity (net farm income divided by the total value of the assets or equity on January 1, 2003) was on average again negative, the second year in a row. Most dairies reported negative returns.

Associations Between Herd Size, Milk Production, Cost Control and Profitability

We frequently get questions about how herd size and milk per cow affect profitability. **Figure 11** shows the association between herd size and net farm income / cwt. The higher net farm incomes are obtained with both small and large herds, but the lower net farm incomes seem to be more prevalent in the smaller herds. **Figure 12** shows the relationship between milk per cow and net farm income / cwt. The data is scattered and no clear association is observed.

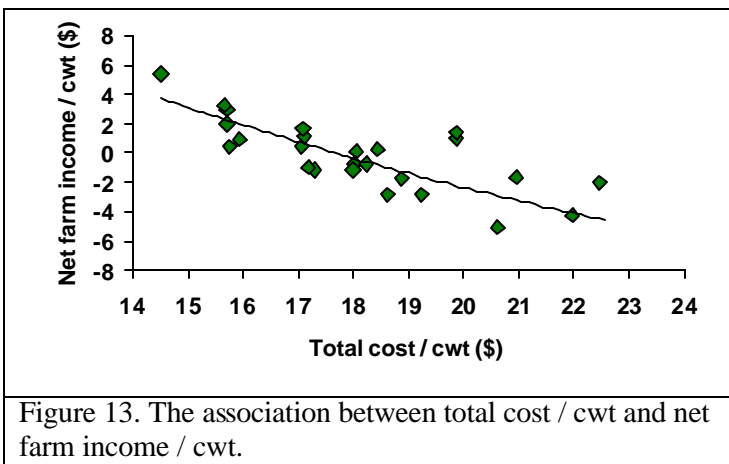
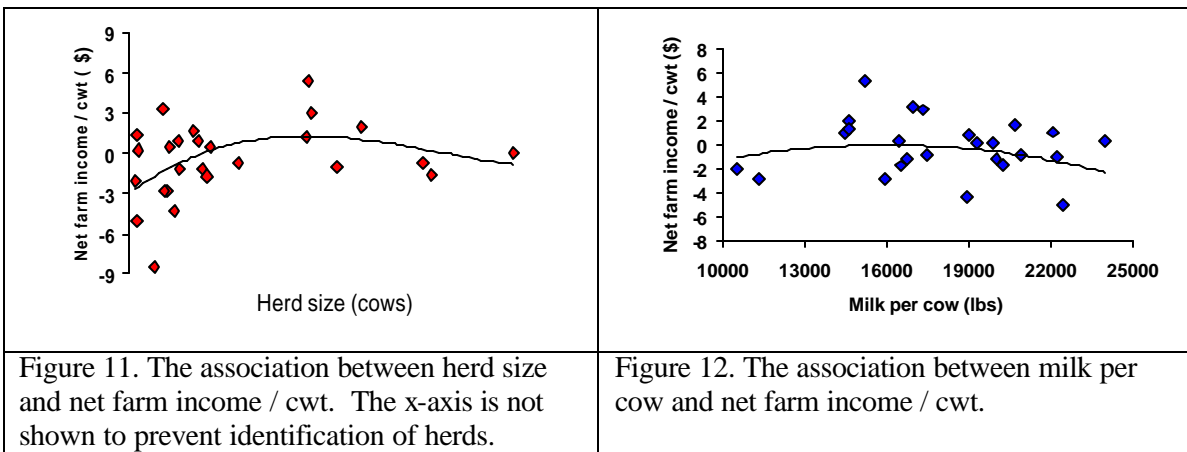


Figure 13. The association between total cost / cwt and net farm income / cwt.

On the other hand, higher net farm income / cwt is clearly associated with lower total cost / cwt (**Figure 13**). This fairly strong negative association has been shown before. Cost control appears to remain an important factor in overall farm profitability.

Summary

The year 2003 has not been a good year for many dairies located in Florida and Georgia. The dairies that participated in DBAP reported an average return / cwt of \$17.66 while total costs

were \$18.27. This resulted in a negative net farm income of $-\$0.51$ / cwt. However, the variations in revenues and costs were great. This indicates that opportunity for profitable dairying remains in the Southeast. Larger herd size and more milk per cow do not necessarily lead to greater profitability. Cost control, on the other hand, remains important.

Table 1. Average summary statistics Dairy Business Analysis Project 1995-2003.

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003
Dairies	19	26	44	52	25	22	39	28	26
Number of cows	1577	1385	1280	758	1083	1280	977	1149	1316
Milk sales / cwt	15.29	18.27	16.68	18.37	17.79	16.55	18.24	16.06	15.89
Leased, raised cow sales / cwt	0.89	1.09	0.66	0.49	0.52	0.59	0.56	0.64	0.36
Gain in value of purch. livest./cwt	0.00	-0.08	0.10	-0.15	-0.19	0.10	-0.08	-0.31	0.19
Heifers, calves sales / cwt	0.17	0.26	0.19	0.14	0.20	0.44	0.29	0.12	0.25
Bull sales / cwt	0.08	0.12	0.05	0.11	0.04	0.14	0.10	0.06	0.08
Feed sales / cwt	0.19	0.22	0.16	0.11	0.39	0.13	0.36	0.18	0.21
Government receipts / cwt	0.02	0.03	0.02	0.03	0.10	0.04	0.26	0.50	0.40
Custom work receipts / cwt	0.00	0.05	0.03	0.02	0.01	0.01	0.02	0.16	0.01
Interest receipts / cwt	0.00	0.01	0.01	0.01	0.02	0.02	0.02	0.04	0.01
Other revenue / cwt	0.29	0.18	0.13	0.30	0.15	0.26	0.21	0.19	0.25
Total revenue / cwt	16.94	20.14	18.03	19.43	19.02	18.28	20.00	17.65	17.66
Personnel cost / cwt	2.77	2.52	2.40	2.19	2.35	2.62	2.69	2.86	3.22
Purchased feed cost / cwt	7.51	8.75	8.41	7.68	7.15	6.83	7.32	6.98	7.16
Crops cost / cwt	0.25	0.33	0.28	0.33	0.28	0.26	0.48	0.34	0.43
Machinery cost / cwt	0.78	0.88	0.82	0.85	0.84	0.82	1.01	0.82	0.82
Livestock cost / cwt	2.03	2.18	2.31	1.52	1.55	1.61	1.64	1.86	1.95
Milk marketing cost / cwt	1.22	0.97	1.06	1.09	1.02	1.16	1.05	1.08	1.11
Buildings, land cost / cwt	0.48	0.48	0.53	0.65	0.63	0.65	0.64	0.67	0.52
Other cost / cwt	1.57	1.43	1.45	1.56	1.29	1.35	1.52	1.35	1.43
Depreciation / cwt	1.04	0.72	0.58	1.56	1.20	1.45	1.41	1.86	1.62
Total cost / cwt	17.64	18.27	17.83	17.44	16.31	16.76	17.75	17.81	18.27
Net farm income from oper. / cwt	-0.70	1.87	0.20	1.99	2.72	1.53	2.25	-0.16	-0.61
Gain in sale of capital assets / cwt	0.89	0.22	1.07	0.10	0.14	-0.05	0.15	0.11	0.09
Net farm income / cwt	0.19	2.09	1.27	2.09	2.86	1.47	2.39	-0.05	-0.51
Return on assets (Dec 31)	-3.4%	19.8%	3.0%	9.8%	22.6%	9.6%	9.9%	-1.4%	-0.4%
Return on equity (Dec 31)	-7.7%	6.0%	10.2%	14.7%	-692.4%	12.0%	14.3%	-6.7%	-12.3%
Assets / cow	3290	3906	3909	4160	3985	3842	4739	5318	6227
Liabilities / cow	984	1484	1576	1522	1436	1417	1330	1806	2017

