

**2015 DAIRY FARM BUSINESS SUMMARY**  
**New York Dairy Farms, 300 Cows or Fewer**  
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**2015 DAIRY FARM BUSINESS SUMMARY  
NEW YORK DAIRY FARMS, 300 COWS OR FEWER\***

**INTRODUCTION**

Dairy farm managers throughout New York State have been participating in Cornell Cooperative Extension's farm business summary and analysis program since the early 1950's. Managers of each participating farm business receive a comprehensive summary and analysis of their farm business. The information in this report represents averages of the data submitted from dairy farms in New York for 2015 with herds of 300 Cows or Fewer.

Smaller farms are facing increasing management challenges in their efforts to control costs and remain profitable. This publication reports the average performance and characteristics of farms with herd sized below 300 cows and the average of the top third of those farms with the highest rate of return on assets without appreciation. Thus, not only can the average performance of this group of farms be used as a benchmark, but the performance of the most profitable farms as well. Identifying strengths and areas for improvement by comparing your business to that of similar farms is an important first step in focusing attention on ways to improve the business.

**Program Objective**

The primary objective of the dairy farm business summary, DFBS, is to help farm managers improve the business and financial management of their business through appropriate use of historical data and the application of modern farm business analysis techniques. This information can also be used to establish goals that enable the business to better fulfill its mission. In short, DFBS provides business and financial information needed in identifying and evaluating strengths and weaknesses of the farm business.

**Format Features**

This report follows the same general format as the 2015 DFBS individual farm report received by participating dairy farmers. The analysis tables have a column that compares the average to the top third of the farms by rate of return on all capital without appreciation. This report may be used by any dairy farm manager who wants to compare his or her business with the average data of farms with less than 300 cows. The individual farm data, the averages and other data can then be used to establish goals for the business. Non-DFBS participants can register and download a DFBS Data Check-in Form at <http://dfbs.cornell.edu>. After collecting the data on the form, it can be entered in the U. S. Top Dairies business summary program at the same web site to obtain a summary of their business. More information about the Dairy Farm Business Summary and Analysis Project may be found at <http://dfbs.dyson.cornell.edu/>.

This report features:

- (1) an income statement including accrual adjustments for farm business expenses and receipts, as well as measures of profitability with and without appreciation,
- (2) a complete balance sheet with analytical ratios;
- (3) a statement of owner equity which shows the sources of the change in owner equity during the year;
- (4) a cash flow statement and debt repayment ability analysis;
- (5) an analysis of crop acreage, yields, and expenses;
- (6) an analysis of dairy livestock numbers, production, and expenses;
- (7) a capital and labor efficiency analysis; and
- (8) progress of the farm business over the past two years.

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\*Many counties had farms that met this criteria in 2015. This report was written by Wayne A. Knoblauch, Professor, Farm Management and Jason Karszes, Senior Extension Associate, Pro-Dairy. Cathryn Dymond was in charge of data and publication preparation.

## PROGRESS OF THE FARM BUSINESS

The 2015 business year for the New York State dairy industry was quite different than 2014, continuing the trend of large variations in earnings from one year to the next. A large decrease in milk prices led to a significant drop in revenues. Costs also reversed trends from 2014 and decreased. A combination of moderate increases in herd size and a small increase in milk produced per cow led to increase milk marketed off the farm. With the combination of changes during the year, a significant decrease in profits occurred, resulting in little change in the financial position of the average farm less than 300 cows in New York.

For both 2014 and 2015, 49 farms that averaged less than 300 cows in New York participated in the Dairy Farm Business Summary and Analysis Program (DFBS), administered by Cornell Cooperative Extension and Cornell University. The table on the following page shows selected factors from the same 49 farms that participated in the DFBS project each of the last two years.

Herd size for these farms grew 5.9% to 126 cows. This increase in herd size, coupled with a 1.6% increase in milk sold per cow, led to an increase of 7.8% in milk pounds shipped per farm. While herd size increased, average number of worker equivalents decreased from 3.7 to 3.6. This led to an increase of 9.4% in cows per worker and a 9.9% increase in milk sold per worker, averaging 739,394 pounds per worker. While hired labor costs per worker equivalent increased 4.2%, with the increase in labor efficiency, the hired labor costs per cwt of milk sold decreased slightly to \$2.32 per cwt.

Grain and concentrate purchased continues to be the single largest expense and showed the largest decrease, falling 10.2%, or \$0.75 per cwt, averaging \$6.24 per cwt. Dairy feed and crop expense/cwt decreased 10.8%, reflecting the large decrease in purchased grain along with small changes in crop input costs. The breakdown of receipts and expenses per cow and per cwt on page 24 shows that fuel, oil, and grease expense fell \$0.39 per cwt. and machinery repair expense fell \$0.25 per cwt, representing the other expenses categories that fell significantly. The combination of decreases in key operating costs along with increase in milk shipped off the farm led to total farm operating expenses per hundredweight decreasing 9.4% to 19.26 per cwt. from \$21.25 per cwt. The operating cost of producing milk per hundredweight fell 10.5%, from \$17.30 to \$15.48.

Farm capital per cow increased 1.1 percent to \$14,164 and machinery and equipment per cow was up 4.3% with new investments for replacement of equipment leading to higher investment in equipment even though average herd size grew during the year. With the average investment increasing and the large decrease in milk price, asset turnover fell 21.3% to 0.37.

Gross sales per hundredweight collapsed from \$25.69 to \$18.23 per hundredweight, or a decrease of 29.0%. Gross milk sales per cow fell 27.9% from \$5,391 per cow to \$3,866 due to lower milk prices and a small increase in milk sold per cow. At the same time, beef prices remained strong for most of the year, leading to a small increase in dairy cattle sales per cow to \$419. Calf sales per cow increased 25% from \$84 to \$105. An increase in government receipts from \$0.04 per hundredweight to \$0.26 per hundredweight provided some offset to the decrease in milk prices.

Net farm income without appreciation decreased from \$156,660 to \$24,927, an 84.1% decrease. Net farm income with appreciation decreased 57.7% to \$82,259, reflecting increased in land values. Labor and management income per operator fell \$93,509, resulting in a negative return of \$34,450 per owner operator. With the appreciation associated with owned assets included in earnings, the rate of return on equity with appreciation averaged 1.1%, falling from 10.2% in 2014. The rate of return on all capital with appreciation was 1.7%. Farm net worth continued to rise (3.9%) due mostly to appreciation of owned assets. Farm debt per cow was essentially unchanged, averaging \$3,623 per cow, a decrease of 0.1%.

2015 was a challenging year after the prosperous 2014 year. Decreases in key operating costs, increases in herd size and milk production per cow, and small increase in cattle, calf, and government receipts weren't not able to offset the significant drop in milk prices, leading to low net farm earnings and a negative return to labor and management.

The importance of trend analysis is to identify what areas changed, ask why they changed, and look at what you can do differently in the future to influence that change. Comparing your business' performance with average data from these DFBS dairy farms can help you establish goals for your business. It is equally important to determine the progress your business has made over the past two or three years, to compare this progress to your goals, and to set goals for the future.

**PROGRESS OF THE FARM BUSINESS**  
Same 49 Dairy Farms with 300 Cows or Fewer, 2014 & 2015

Selected Factors	Average of 49 Farms		Percent Change
	2014	2015	
<u>Size of Business</u>			
Average number of cows	119	126	5.9
Average number of heifers	101	108	6.9
Milk sold, pounds	2,496,837	2,691,394	7.8
Worker equivalent	3.7	3.6	-2.7
Total tillable acres	358	366	2.2
<u>Rates of Production</u>			
Milk sold per cow, pounds	20,985	21,322	1.6
Hay DM per acre, tons	2.6	2.5	-3.9
Corn silage per acre, tons	17.9	17.1	-4.5
<u>Labor Efficiency &amp; Costs</u>			
Cows per worker	32	35	9.4
Milk sold per worker, pounds	673,002	739,394	9.9
Hired labor cost per hundredweight	\$2.33	\$2.32	-0.4
Hired labor cost per worker	\$33,389	\$34,781	4.2
Hired labor cost as % of milk sales	9.1%	12.7%	39.6
<u>Cost Control</u>			
Grain & concentrate purchased as % of milk sales	27%	34%	25.9
Grain & concentrate per hundredweight milk	\$6.95	\$6.24	-10.2
Dairy feed & crop expense per cwt. milk	\$9.26	\$8.26	-10.8
Labor & machinery costs per cow	\$2,127	\$1,902	-10.6
Total farm operating expenses per cwt. sold	\$21.25	\$19.26	-9.4
Interest costs per hundredweight milk	\$0.62	\$0.61	-1.6
Milk marketing costs per cwt. milk sold	\$0.98	\$1.04	6.1
Operating cost of producing cwt. of milk	\$17.30	\$15.48	-10.5
<u>Capital Efficiency</u> (average for the year)			
Farm capital per cow*	\$14,005	\$14,164	1.1
Machinery & equipment per cow	\$2,779	\$2,897	4.3
Asset turnover ratio*	0.47	0.37	-21.3
<u>Income Generation</u>			
Gross milk sales per cow	\$5,391	\$3,886	-27.9
Gross milk sales per hundredweight	\$25.69	\$18.23	-29.0
Net milk sales per hundredweight	\$24.71	\$17.18	-30.5
Dairy cattle sales per cow	\$411	\$419	2.0
Dairy calf sales per cow	\$84	\$105	25.0
Government receipts per hundredweight	\$0.04	\$0.26	550.0
<u>Profitability</u>			
Net farm income without appreciation	\$156,660	\$24,927	-84.1
Net farm income with appreciation	\$194,460	\$82,259	-57.7
Labor & management income per oper./manager	\$59,059	\$-34,450	-158.3
Rate of return on equity capital with appreciation	10.2%	1.1%	-89.2
Rate of return on all capital with appreciation	8.5%	1.7%	-80.0
<u>Financial Summary</u>			
Farm net worth, end year	\$1,300,040	\$1,350,242	3.9
Debt to asset ratio	0.26	0.26	0.0
Farm debt per cow	\$3,628	\$3,623	-0.1

\*Rented farms are excluded from these factors.

## SUMMARY AND ANALYSIS OF THE FARM BUSINESS

### Business Characteristics

Planning optimal management strategies is a crucial component of operating a successful farm. Various combinations of farm resources, enterprises, business arrangements, and management techniques are used by the dairy farmers. The following table shows important farm business characteristics and the number of farms with each characteristic.

**BUSINESS CHARACTERISTICS**  
57 Dairy Farms with 300 Cows or Fewer, 2015

Type of Farm	Number	Milking System	Number
Dairy	52	Bucket & carry	0
Part-time dairy	0	Dumping station	1
Dairy cash-crop	5	Pipeline	25
Certified organic milk producer	0	Herringbone parlor	12
Rotational grazing farms	8	Other parlor	18
Type of Ownership	Number	Production Records	Number
Owner	53	Testing service	45
Renter	4	On-farm system	4
		Other	1
		None	7
Type of Business	Number	Business Record System	Number
Sole Proprietorship	34	Account Book	11
Partnership	7	Accounting Service	9
LLC	16	On-farm computer	35
		Other	2
Type of Barn	Number	Breed of Herd	Percent
Stanchion or Tie-Stall	23	Holstein	89
Freestall	27	Jersey	5
Combination	7	Other	6
Milking Frequency	Number		
2 times per day	45		
3 times per day	6		
Other	6		

### Income Statement

In order for an income statement to accurately measure farm income, it must include cash transactions and accrual adjustments (changes in accounts payable, accounts receivable, inventories, and prepaid expenses).

Cash paid is the actual cash outlay during the year and does not necessarily represent the cost of goods and services actually used in 2015.

Change in inventory: Increases in inventories of supplies and other purchased inputs are subtracted in computing accrual expenses because they represent purchased inputs not actually used during the year. Decreases in purchased inventories are added to expenses because they represent inputs purchased in a prior year and used this year.

Change in prepaid expenses (noted by <<) is a net change in non-inventory expenses that have been paid in advance of their use. For example, prepaid lease expense on the beginning of year balance sheet represents last year's payment for use of the asset during this year. End of year prepaid expense represents payments made this year for next year's use of the asset. Adding payments made last year for this year's use of the asset, and subtracting payments made this year for next year's use of the asset is accomplished by subtracting the difference.

**CASH AND ACCRUAL FARM EXPENSES**

57 Dairy Farms with 300 Cows or Fewer, 2015

Expense Item	Cash Paid	Change in Inventory			Change in Accounts Payable	=	Accrual Expenses
		-	or Prepaid Ex- pense	+			
<u>Hired Labor</u>	\$ 60,664	\$	0	<<	\$ -222	\$	60,442
<u>Feed</u>							
Dairy grain & concentrate	164,300		-9,184		3,292		176,776
Dairy roughage	11,189		433		255		11,011
Nondairy	198		0		0		198
Professional nutritional services	144		0	<<	0		144
<u>Machinery</u>							
Machinery hire, rent & lease	10,397		0	<<	1,691		12,088
Machinery repairs & farm vehicle exp.	32,292		-25		236		32,552
Fuel, oil & grease	19,437		-320		102		19,859
<u>Livestock</u>							
Replacement livestock	3,423		0	<<	596		4,018
Breeding	8,136		-20		45		8,201
Veterinary & medicine	15,837		-135		16		15,987
Milk marketing	29,283		0	<<	-7		29,276
Bedding	8,923		-75		21		9,020
Milking supplies	12,609		42		157		12,724
Cattle lease & rent	0		0	<<	0		0
Custom boarding	6,222		0	<<	-88		6,133
bST	1,514		-39		0		1,553
Livestock professional fees	2,433		-82	<<	0		2,515
Other livestock expense	5,817		-2		259		6,078
<u>Crops</u>							
Fertilizer & lime	12,521		-2,211		1,045		15,778
Seeds & plants	13,542		-2,439		283		16,263
Spray, other crop expense	8,603		-1,109		391		10,103
Crop professional fees	752		-1,579	<<	0		2,331
<u>Real Estate</u>							
Land, building & fence repair	9,254		-13		-88		9,180
Taxes	14,840		0	<<	125		14,965
Rent & lease	7,767		88	<<	-28		7,651
<u>Other</u>							
Insurance	9,197		-515	<<	-6		9,706
Utilities (farm share)	14,696		62	<<	-13		14,622
Interest paid	18,384		0	<<	0		18,384
Other professional fees	2,924		0	<<	-57		2,867
Miscellaneous	3,249		48		-22		3,179
Total Operating	\$508,547		\$-17,075		\$7,982		\$533,604
Expansion livestock	5,620		0	<<	0		5,620
Extraordinary expense	925		0	<<	20		945
Machinery depreciation							35,565
Building depreciation							14,023
<b>TOTAL ACCRUAL EXPENSES</b>							<b>\$589,757</b>

Change in accounts payable: An increase in accounts payable from beginning to end of year is added when calculating accrual expenses because these expenses were incurred (resources used) in 2015 but not paid for. A decrease is subtracted because it represents payment for resources used before 2015.

Accrual expenses are an estimate of the costs of inputs, except operator/family labor and equity capital, actually used in this year's production. They are the cash paid, less changes in inventory and prepaid expenses, plus accounts payable.

**CASH AND ACCRUAL FARM RECEIPTS**  
57 Dairy Farms with 300 Cows or Fewer, 2015

Receipt Item	Cash Receipts	+	Change in Inventory	+	Change in Accounts Receivable	=	Accrual Receipts
Milk sales	\$ 514,955				\$ -3,888		\$ 511,067
Dairy cattle	41,842		\$ 12,905		-841		53,906
Dairy calves	13,479		532		7		14,018
Other livestock	889		-298		-7		584
Crops	17,379		4,865		-3,300		18,944
Government receipts	7,616		0 *		-540		7,077
Custom machine work	1,298				44		1,342
Gas tax refund	143				0		143
Other	11,723				-228		11,495
Less nonfarm noncash capital**		(-)	<u>0 **</u>			(-)	<u>0</u>
Total Receipts	\$ 609,324		\$ 18,005		\$ -8,753		\$ 618,576

\*Change in advanced government receipts.

\*\*Gifts or inheritances of cattle or crops included in inventory.

Cash receipts include the gross value of milk checks received during the year plus all other payments received from the sale of farm products, services, and government programs. Nonfarm income is not included in calculating farm profitability.

Changes in inventory of assets produced by the business are calculated by subtracting beginning of year values from end of year values excluding appreciation. Increases in livestock inventory caused by herd growth and/or quality are added, and decreases caused by herd reduction and/or quality are subtracted. Changes in inventories of crops grown are also included. An increase in advanced government receipts is subtracted from cash income because it represents income received in 2015 for the 2016 crop year in excess of funds earned for 2015. Likewise, a decrease is added to cash government receipts because it represents funds earned for 2015 but received in 2014.

Changes in accounts receivable are calculated by subtracting beginning year balances from end year balances. Payments in January 2016 for milk produced in December 2015 compared to January 2015 payments for milk produced in 2014 are included as a change in accounts receivable in determining accrual milk sales.

Accrual receipts represent the value of all farm commodities produced and services actually generated by the farm business during the year.

### **Profitability Analysis**

Farm operators\* contribute labor, management, and equity capital to their businesses and the combination of these resources, and the other resources used in the business, determines profitability. Farm profitability can be measured as the return to all family resources or as the return to one or more individual resources such as labor and management.

The return to any individual resource must be viewed as an estimate because the cost of other family resources must be approximated to calculate returns to the selected resource. For example, the costs of operator and family labor and management must be approximated to calculate the returns to equity capital.

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\* Operators are the individuals who are integrally involved in the operation and management of the farm business. They are not limited to those who are the owner of a sole proprietorship or are formally a member of the partnership or corporation.

Net farm income is the return to the farm operators and other unpaid family members for their labor, management, and equity capital. It is the farm family's net annual return from working, managing, and financing the farm business. This is not a measure of cash available from the year's business operation. Cash flow is evaluated later in this report.

Net farm income is computed both with and without appreciation. Appreciation represents the change in values caused by annual changes in prices of livestock, machinery, real estate inventory, and stocks and certificates (other than Farm Credit). Appreciation is a major factor contributing to changes in farm net worth and must be included for a complete profitability analysis.

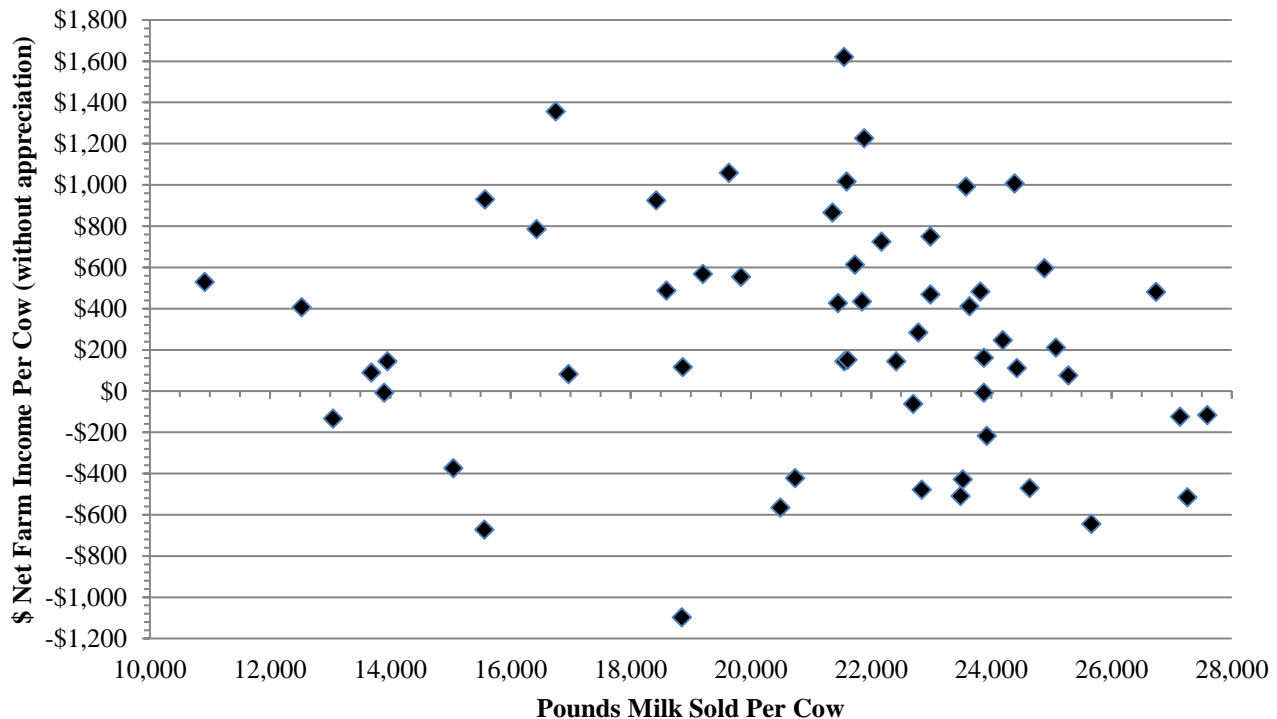
**NET FARM INCOME**  
57 Dairy Farms with 300 Cows or Fewer, 2015

Item	Average 57 Farms		Top Third Farms*	
	Total	Per Cow	Total	Per Cow
Total accrual receipts	\$ 618,576		\$ 771,365	
Appreciation: Livestock	-467		1,511	
Machinery	6,532		2,008	
Real Estate	44,388		78,914	
Other Stock & Certificates	461		1,990	
Total Including Appreciation	\$ 669,490		\$ 855,787	
Total accrual expenses	- 589,757		- 668,068	
Net Farm Income (with appreciation)	\$ 79,733	\$ 612	\$ 187,720	\$ 1,183
Net Farm Income (without appreciation)	\$ 28,819	\$ 221	\$ 103,298	\$ 651

\*Top third (33%) of farms by rate of return on all assets without appreciation.

The chart below shows the relationship between net farm income per cow (without appreciation) and pounds of milk sold per cow. Higher net farm incomes can be achieved across a range of production levels as a result of different management systems, such as grazing, being utilized by the participating dairies.

**NET FARM INCOME PER COW AND MILK PER COW**  
57 Dairy Farms with 300 Cows or Fewer, 2015





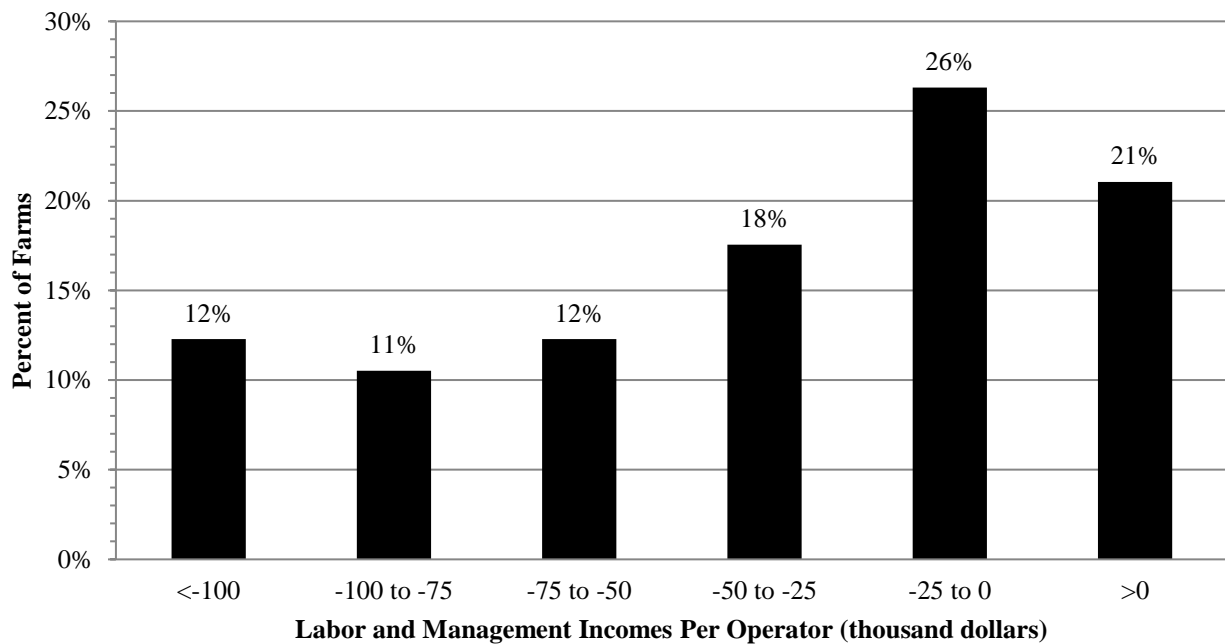
Labor and management income is the return which farm operators receive for their labor and management used in the farm business. Appreciation is not included as part of the return to labor and management because it results from ownership of assets rather than management of the farm business. Labor and management income is calculated by deducting a charge for unpaid family labor and the opportunity cost of equity capital, at a real interest rate of five percent, from net farm income excluding appreciation. The interest charge of five percent reflects the long-term average rate of return above inflation that a farmer might expect to earn in comparable risk investments.

**LABOR AND MANAGEMENT INCOME**  
57 Dairy Farms with 300 Cows or Fewer, 2015

Item	Average 57 Farms	Top Third Farms
Net farm income without appreciation	\$ 28,819	\$ 103,298
Family labor unpaid @ \$2,600 per month	- 8,680	- 9,716
Interest on \$1,391,024 average equity capital @ 5% real rate (\$1,830,270 average equity capital for Top Third Farms)	<u>- 69,551</u>	<u>- 91,514</u>
Labor & Management Income per farm (1.51 operators per farm) (1.75 operators per farm for Top Third Farms)	\$ -49,412	\$ 2,068
Labor & Management Income per Operator/Manager	\$ -32,723	\$ 1,182

Labor and management income per operator averaged \$-32,723 on these 57 farms in 2015. The range in labor and management income per operator was from less than \$-204,000 to more than \$72,000. Returns to labor and management were less than \$-75,000 on 23 percent of the farms. Labor and management incomes per operator were between \$-75,000 and \$-25,000 on 30 percent of the farms while 47 percent had labor and management incomes per operator greater than \$-25,000. This year only 21 percent of the farms in this size range had labor and management incomes per operator greater than \$0.

**DISTRIBUTION OF LABOR & MANAGEMENT INCOMES PER OPERATOR**  
57 Dairy Farms with 300 Cows or Fewer, 2015



Return on equity capital measures the net return remaining for the farmer's equity or owned capital after a charge has been made for the owner-operator's labor and management. The earnings or amount of net farm income allocated to labor and management is the opportunity cost of operators' labor and management estimated by the cooperators. Return on equity capital is calculated with and without appreciation. The rate of return on equity capital is determined by dividing the amount returned by the average farm net worth or equity capital. Rate of return on total capital is calculated by adding interest paid to the return on equity capital and then dividing by average farm assets. Net farm income from operations ratio is net farm income (without appreciation) divided by total accrual receipts.

**RETURN ON EQUITY CAPITAL AND RETURN ON TOTAL CAPITAL**  
57 Dairy Farms with 300 Cows or Fewer, 2015

Item	Average 57 Farms	Top Third Farms
Net farm income with appreciation	\$ 79,733	\$ 187,720
Family labor unpaid @ \$2,600 per month	- 8,680	- 9,716
Value of operators' labor & management	<u>- 66,126</u>	<u>- 80,416</u>
Return on equity capital with appreciation	\$ 4,926	\$ 97,588
Interest paid	<u>+ 18,384</u>	<u>+ 26,718</u>
Return on total capital with appreciation	\$ 23,310	\$ 124,306
Return on equity capital without appreciation	\$ -45,987	\$ 13,166
Return on total capital without appreciation	\$ -27,603	\$ 39,884
Rate of return on average equity capital:		
with appreciation	0.4%	5.3%
without appreciation	-3.3%	0.7%
Rate of return on average total capital:		
with appreciation	1.2%	5.0%
without appreciation	-1.5%	1.6%
Net farm income from operations ratio	0.05	0.13

**Farm and Family Financial Status**

The first step in evaluating the financial position of the farm is to construct a balance sheet which identifies and values all the assets and liabilities of the business. The second step is to evaluate the relationship between assets, liabilities, and net worth and changes that occurred during the year.

Financial lease obligations are included in the balance sheet. The present value of all future payments is listed as a liability since the farmer is committed to make the payments by signing the lease. The present value is also listed as an asset, representing the future value the item has to the business. For 2015, lease payments were discounted by 7 percent to obtain their present value.

Advanced government receipts are included as current liabilities. Government payments received in 2015 that are for participation in the 2016 program are the end year balance and payments received in 2014 for participation in the 2015 program are the beginning year balance.

Current Portion or principal due in the next year for intermediate and long term debt is included as a current liability.

**2015 FARM BUSINESS & NONFARM BALANCE SHEET**

57 Dairy Farms with 300 Cows or Fewer, 2015

Farm Assets	Jan. 1	Dec. 31	Farm Liabilities & Net Worth	Jan. 1	Dec. 31
<u>Current</u>			<u>Current</u>		
Farm cash, checking & savings	\$ 30,143	\$ 21,018	Accounts payable	\$ 8,681	\$ 16,683
Accounts receivable	57,846	49,094	Operating debt	10,686	11,250
Prepaid expenses	2,546	519	Short Term	4,122	926
Feed & supplies	169,172	158,989	Advanced govt. receipts	0	0
			Current Portion:		
			Intermediate	30,416	36,729
			Long Term	14,895	17,586
Total Current	\$ 259,707	\$ 229,620	Total Current	\$ 68,800	\$ 83,174
<u>Intermediate</u>			<u>Intermediate</u>		
Dairy cows:			Structured debt		
owned	\$ 191,488	\$ 202,916	1-10 years	\$ 153,337	\$ 134,369
leased	0	0	Financial lease		
Heifers	101,713	103,229	(cattle/machinery)	257	5,219
Bulls & other livestock	3,579	3,307	Farm Credit stock	695	676
Mach. & equip. owned	388,374	396,110	Total Intermediate	\$ 154,289	\$ 140,263
Mach. & equip. leased	257	5,219			
Farm Credit stock	695	676			
Other stock/certificate	41,706	43,031			
Total Intermediate	\$ 727,812	\$ 754,487			
<u>Long Term</u>			<u>Long Term</u>		
Land & buildings:			Structured debt		
owned	\$ 867,995	\$ 931,624	>10 years	\$ 279,690	\$ 281,736
leased	1,989	1,371	Financial lease		
Total Long Term	\$ 986,983	\$ 932,996	(structures)	1,989	1,371
			Total Long Term	\$ 281,678	\$ 283,107
Total Farm Assets	\$1,857,502	\$1,917,103	Total Farm Liabilities	\$ 504,768	\$ 506,544
			FARM NET WORTH	\$1,352,734	\$1,410,559

## Nonfarm Assets, Liabilities &amp; Net Worth (Average of 22 farms reporting)

Assets	Jan. 1	Dec. 31	Liabilities & Net Worth	Jan. 1	Dec. 31
Personal cash, checking & savings	\$ 24,691	\$ 28,512	Nonfarm Liabilities	\$ 4,139	\$ 3,366
Cash value life insurance	14,657	12,339			
Nonfarm real estate	33,545	33,545			
Auto (personal share)	12,114	10,295			
Stocks & bonds	66,955	62,015			
Household furnishings	8,727	9,182			
All other nonfarm assets	3,370	5,080			
Total Nonfarm Assets	\$164,060	\$160,968	NONFARM NET WORTH	\$159,920	\$157,602

Farm & Nonfarm Assets, Liabilities, and Net Worth*	Jan. 1	Dec. 31
Total Assets	\$ 2,021,562	\$ 2,078,071
Total Liabilities	508,907	509,910
TOTAL FARM & NONFARM NET WORTH	\$ 1,512,655	\$ 1,568,161

\*Assumes that average nonfarm assets and liabilities for the nonreporting farms were the same as for those reporting.

Balance sheet analysis involves examination of relative asset and debt levels for the business. Percent equity is calculated by dividing end of year net worth by end of year assets and multiplying by 100. The debt to asset ratio is compiled by dividing liabilities by assets. Low debt to asset ratios reflect business solvency and the potential capacity to borrow. The leverage ratio is the dollar of debt per dollar of equity, computed by dividing total farm liabilities by farm net worth. Debt levels per productive unit represent old standards that are still useful if used with measures of cash flow and repayment ability. A current ratio of less than 1.5 or that has been falling warrants additional evaluation. The amount of working capital that is adequate must be related to the size of the farm business.

### BALANCE SHEET ANALYSIS

57 Dairy Farms with 300 Cows or Fewer, 2015

Item	Average 57 Farms		Top Third Farms	
<u>Financial Ratios - Farm:</u>				
Percent equity		74%		74%
Debt/asset ratio: total		0.26		0.26
long-term		0.30		0.32
intermediate/current		0.23		0.19
Leverage ratio		0.36		0.34
Current ratio		2.76		2.82
Working capital	\$146,446	As % of total Expenses: 25%	\$204,098	31%
<u>Farm Debt Analysis:</u>				
Accounts payable as % of total debt		3%		3%
Long-term liabilities as a % of total debt		56%		61%
Current & intermediate liabilities as a % of total debt		44%		39%
Cost of term debt (weighted average)		3.9%		3.9%
<u>Farm Debt Levels:</u>				
	<u>Per Cow</u>	<u>Per Tillable Acre Owned</u>	<u>Per Cow</u>	<u>Per Tillable Acre Owned</u>
Total farm debt	\$3,770	\$2,122	\$3,978	\$2,061
Long-term debt	2,107	1,186	2,425	1,256
Intermediate & long term	3,151	1,774	3,290	1,704
Intermediate & current debt	1,663	936	1,553	804

Farm inventory balance is an accounting of the value of assets used on the balance sheet and the changes that occur from the beginning to end of year. Changes in the livestock inventory are included in the dairy analysis. Net investment indicates whether the capital stock is being expanded (positive) or depleted (negative).

### FARM INVENTORY BALANCE

57 Dairy Farms with 300 Cows or Fewer, 2015

Item	Average 57 Farms			
	Real Estate		Machinery & Equipment	
Value beginning of year		\$ 867,995		\$ 388,374
Purchases	\$ 59,475*		\$ 38,005	
Gift & inheritance	+ 0		+ 0	
Lost capital	- 23,527			
Sales	- 2,682		- 1,236	
Depreciation	- 14,023		- 35,565	
Net investment		= 19,242		= 1,204
Appreciation		+ 44,388		+ 6,532
Value end of year		\$ 931,624		\$ 396,110

\*\$9,333 land and \$50,142 buildings and/or depreciable improvements.

The Statement of Owner Equity has two purposes. It allows (1) verification that the accrual income statement and market value balance sheet are consistent (in accountants terms, they reconcile) and (2) identification of the causes of change in equity that occurred on the farm during the year. The Statement of Owner Equity allows you to determine to what degree the change in equity was caused by (1) earnings from the business, and nonfarm income, in excess of withdrawals being retained in the business (called retained earnings), (2) outside capital being invested in the business or farm capital being removed from the business (called contributed/withdrawn capital) , (3) increases or decreases in the value (price) of assets owned by the business (called change in valuation equity), and (4) the error in the business cash flow accounting.

Retained earnings is an excellent indicator of farm generated financial progress.

### STATEMENT OF OWNER EQUITY (RECONCILIATION)

57 Dairy Farms with 300 Cows or Fewer, 2015

Item	Average 57 Farms	Top Third Farms
Beginning of year farm net worth	\$1,371,488	\$ 1,774,858
Net farm income without appreciation	\$ 28,819	\$ 103,298
+Nonfarm cash income	+ 7,879	+ 1,554
-Personal withdrawals & family expenditures excluding nonfarm borrowings	<u>- 56,976</u>	<u>- 71,328</u>
RETAINED EARNINGS	+ \$ -20,278	+\$ 33,524
Nonfarm noncash transfers to farm	\$ 0	\$ 0
+Cash used in business from nonfarm capital	+ 29,474	+ 23,550
-Note or mortgage from farm real estate sold (nonfarm)	<u>- 0</u>	<u>- 0</u>
CONTRIBUTED/WITHDRAWN CAPITAL	+ \$ 29,474	+\$ 23,550
Appreciation	\$ 50,914	\$ 84,422
-Lost capital	<u>- 23,527</u>	<u>- 32,056</u>
CHANGE IN VALUATION EQUITY	+ \$ 27,386	+\$ 52,366
IMBALANCE/ERROR	<u>- \$ -2,488</u>	<u>- \$ -1,385</u>
End of year net worth*	=\$ 1,410,559	=\$ 1,885,683
<hr/>		
<u>Change in Net Worth</u>		
Without appreciation	\$-11,843	\$26,403
With appreciation	\$39,071	\$110,825

\*May not add to total due to rounding.

**Cash Flow Statement**

Completing an annual cash flow statement is an important step in understanding the sources and uses of funds for the business. Understanding last year's cash flow is the first step toward planning and managing cash flow for the current and future years.

The annual cash flow statement is structured to show net cash provided by operating activities, investing activities, financing activities and from reserves. All cash inflows and outflows, including beginning and end balances, are included. Therefore, the sum of net cash provided from all four activities should be zero. Any imbalance is the error from incorrect accounting of cash inflows/outflows.

**ANNUAL CASH FLOW STATEMENT**  
57 Dairy Farms with 300 Cows or Fewer, 2015

Item	Average 57 Farms	
<b><u>Cash Flow from Operating Activities</u></b>		
Cash farm receipts	\$ 609,324	
- Cash farm expenses	508,547	
- Extraordinary expense	<u>925</u>	
= Net cash farm income		\$ 99,852
Personal withdrawals & family expenses including nonfarm debt payments	\$ 57,173	
- Nonfarm income	<u>7,879</u>	
- Net cash withdrawals from the farm		<u>\$ 49,294</u>
= Net Provided by Operating Activities		\$ 50,558
<b><u>Cash Flow From Investing Activities</u></b>		
Sale of assets: machinery	\$ 1,236	
+ real estate	2,683	
+ other stock & cert.	<u>163</u>	
= Total asset sales		\$ 4,081
Capital purchases: expansion livestock	\$ 5,620	
+ machinery	38,005	
+ real estate	59,475	
+ other stock & cert.	<u>1,027</u>	
- Total invested in farm assets		<u>\$ 104,126</u>
= Net Provided by Investment Activities		\$ -100,045
<b><u>Cash Flow From Financing Activities</u></b>		
Money borrowed (intermediate & long term)	\$ 89,939	
+ Money borrowed (short term)	-753	
+ Increase in operating debt	564	
+ Cash from nonfarm capital used in business	29,474	
+ Money borrowed - nonfarm	<u>197</u>	
= Cash inflow from financing		\$ 119,421
Principal payments (intermediate & long term)	\$ 79,103	
+ Principal payments (short term)	2,444	
+ Decrease in operating debt	<u>0</u>	
- Cash outflow for financing		<u>\$ 81,547</u>
= Net Provided by Financing Activities		\$ 37,874
<b><u>Cash Flow From Reserves</u></b>		
Beginning farm cash, checking & savings		\$ 30,143
- Ending farm cash, checking & savings		<u>21,018</u>
= Net Provided from Reserves		\$ 9,125
Imbalance (error)		<u>\$ -2,488</u>

**ANNUAL CASH FLOW STATEMENT**  
Top Third Dairy Farms with 300 Cows or Fewer, 2015

Item	Top Third Farms		
<u>Cash Flow from Operating Activities</u>			
Cash farm receipts	\$ 742,773		
- Cash farm expenses	593,147		
- Extraordinary expense	<u>2,057</u>		
= Net cash farm income		\$ 147,570	
Personal withdrawals & family expenses including nonfarm debt payments	\$ 71,662		
- Nonfarm income	<u>1,554</u>		
- Net cash withdrawals from the farm		<u>\$ 70,108</u>	
= Net Provided by Operating Activities			\$ 77,462
<u>Cash Flow From Investing Activities</u>			
Sale of assets: machinery	\$ 685		
+ real estate	8,047		
+ other stock & cert.	<u>10</u>		
= Total asset sales		\$ 8,742	
Capital purchases: expansion livestock	\$ 1,708		
+ machinery	36,728		
+ real estate	68,247		
+ other stock & cert.	<u>610</u>		
- Total invested in farm assets		<u>\$ 107,293</u>	
= Net Provided by Investment Activities			\$ -98,550
<u>Cash Flow From Financing Activities</u>			
Money borrowed (intermediate & long term)	\$ 68,578		
+ Money borrowed (short term)	-1,540		
+ Increase in operating debt	4,210		
+ Cash from nonfarm capital used in business	23,550		
+ Money borrowed - nonfarm	<u>334</u>		
= Cash inflow from financing		\$ 95,133	
Principal payments (intermediate & long term)	\$ 76,655		
+ Principal payments (short term)	1,597		
+ Decrease in operating debt	<u>0</u>		
- Cash outflow for financing		<u>\$ 78,252</u>	
= Net Provided by Financing Activities			\$ 16,881
<u>Cash Flow From Reserves</u>			
Beginning farm cash, checking & savings		\$ 32,858	
- Ending farm cash, checking & savings		<u>30,036</u>	
= Net Provided from Reserves			\$ 2,822
Imbalance (error)			<u>\$ -1,385</u>

## Repayment Analysis

A valuable use of cash flow analysis is to compare the debt payments planned for the last year with the amount actually paid. The measures listed below provide a number of different perspectives on the repayment performance of the business. However, the critical question to many farmers and lenders is whether planned payments can be made in 2016. The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to planned 2016 debt payments shown below.

### FARM DEBT PAYMENTS PLANNED

Dairy Farms with 300 Cows or Fewer, 2014 & 2015

Debt Payments	Same 49 Dairy Farms			Same 15 Top Third Farms		
	2015 Payments		Planned 2016	2015 Payments		Planned 2016
	Planned	Made		Planned	Made	
Long-term	\$ 24,791	\$ 36,002	\$ 26,114	\$ 33,926	\$ 36,478	\$ 40,032
Intermediate-term	37,190	58,031	37,793	40,036	54,446	35,893
Short-term	1,379	2,952	680	1,779	2,300	2,147
Operating (net reduction)	131	4,999	373	361	6,760	0
Accounts payable (net reduction)	204	945	490	667	395	0
Total	\$ 63,695	\$ 102,929	\$ 65,451	\$ 76,770	\$ 100,379	\$ 78,072
Per cow	\$ 505	\$ 815		\$ 483	\$ 632	
Per cwt. 2015 milk	\$ 2.37	\$ 3.82		\$ 2.23	\$ 2.92	
Percent of total 2015 receipts	11%	17%		10%	13%	
Percent of 2015 milk receipts	13%	21%		12%	16%	

The cash flow coverage ratio and debt coverage ratio measure the ability of the farm business to meet its planned debt payments schedule. The ratios show the percentage of payments planned for 2015 (as of December 31, 2014) that could have been made with the amount available for debt service in 2015. Farmers who did not participate in DFBS in 2014 have their 2015 cash flow coverage ratio based on planned debt payments for 2016.

### COVERAGE RATIOS

Same 49 Dairy Farms with 300 Cows or Fewer, 2014 & 2015

Item	Average	Item	Average
<u>Cash Flow Coverage Ratio</u>		<u>Debt Coverage Ratio</u>	
Cash farm receipts	\$589,564	Net farm income (without appreciation)	\$24,927
- Cash farm expenses	491,410	+ Depreciation	47,911
+ Interest paid (cash)	16,490	+ Interest paid (accrual)	16,490
- Net personal withdrawals from farm*	<u>43,256</u>	- Net personal withdrawals from farm*	<u>43,256</u>
(A) = Amount Available for Debt Service	\$ 71,387	(A') = Repayment Capacity	\$46,071
(B) = Debt Payments Planned for 2015 (as of December 31, 2014)	\$ 63,695	(B) = Debt Payments Planned for 2015 (as of December 31, 2014)	\$63,695
(A/B)= Cash Flow Coverage Ratio for 2015	1.12	(A'/B)= Debt Coverage Ratio for 2015	0.72
-----			
Same 15 Top Third Dairy Farms, 2014 & 2015			
(A) = Amount Available for Debt Service	\$107,582	(A') = Repayment Capacity	\$110,636
(B) = Debt Payments Planned for 2015	\$76,770	(B) = Debt Payments Planned for 2015	\$76,770
(A/B)= Cash Flow Coverage Ratio for 2015	1.40	(A'/B)= Debt Coverage Ratio for 2015	1.44

\*Personal withdrawals and family expenditures less nonfarm income and nonfarm money borrowed. If family withdrawals are excluded, or inaccurately included, the cash flow coverage ratio will be incorrect.



**ANNUAL CASH FLOW WORKSHEET**  
57 Dairy Farms with 300 Cows or Fewer, 2015

Item	Average 57 Farms		
	Per Cow	Per Cwt.	Total
Number cows and cwt. milk	130	28,039	
<u>Accrual Operating Receipts</u>			
Milk	\$3,922	\$18.23	\$511,067
Dairy cattle	414	1.92	53,906
Dairy calves	108	0.50	14,018
Other livestock	4	0.02	584
Crops	145	0.68	18,944
Miscellaneous receipts	<u>154</u>	<u>0.72</u>	<u>20,057</u>
Total	\$4,747	\$22.06	\$618,576
<u>Accrual Operating Expenses</u>			
Hired labor	\$ 464	\$ 2.16	\$ 60,442
Dairy grain & concentrate	1,356	6.30	176,776
Dairy roughage	84	0.39	11,011
Nondairy feed	2	0.01	198
Professional nutritional services	1	0.01	144
Machinery hire/rent/lease	93	0.43	12,088
Machinery repair & farm vehicle expense	250	1.16	32,552
Fuel, oil & grease	152	0.71	19,859
Replacement livestock	31	0.14	4,018
Breeding	63	0.29	8,201
Veterinary & medicine	123	0.57	15,987
Milk marketing	225	1.04	29,276
Bedding	69	0.32	9,020
Milking supplies	98	0.45	12,724
Cattle lease	0	0.00	0
Custom boarding	47	0.22	6,133
bST expense	12	0.06	1,553
Livestock professional fees	19	0.09	2,515
Other livestock expense	47	0.22	6,078
Fertilizer & lime	121	0.56	15,778
Seeds & plants	125	0.58	16,263
Spray & other crop expenses	78	0.36	10,103
Crop professional fees	18	0.08	2,331
Land, building, fence repair	70	0.33	9,180
Taxes	115	0.53	14,965
Real estate rent/lease	59	0.27	7,651
Insurance	74	0.35	9,706
Utilities	112	0.52	14,622
Other professional fees	22	0.10	2,867
Miscellaneous	<u>24</u>	<u>0.11</u>	<u>3,179</u>
Total Less Interest Paid	\$3,954	\$18.38	\$515,220
<u>Net Accrual Operating Income (without interest paid)</u>	793	3.69	103,356
- Change in livestock/crop inventory*	138	0.64	18,005
- Change in accounts receivable	-67	-0.31	-8,753
- Change in feed/supply inventory**	-131	-0.61	-17,075
+ Change in accts. payable***	<u>61</u>	<u>0.28</u>	<u>7,982</u>
NET CASH FLOW	\$ 914	\$ 4.25	\$119,161
- Net personal withdrawals from farm (see footnote on p. 15)	<u>358</u>	<u>1.66</u>	<u>46,636</u>
Available for Farm Debt Payments & Investments	\$ 557	\$ 2.59	\$ 72,526
- Farm debt payments	<u>802</u>	<u>3.73</u>	<u>104,545</u>
Available for Farm Investment	\$ -246	\$ -1.14	\$ -32,019
- Capital purchases: cattle, machinery & improvements	<u>799</u>	<u>3.71</u>	<u>104,126</u>
Additional Capital Needed	\$1,045	\$ 4.86	\$136,146

\*Includes change in advance government receipts. \*\*Includes change in prepaid expenses.

\*\*\*Excludes change in interest account payable.

**ANNUAL CASH FLOW WORKSHEET**  
Top Third Dairy Farms with 300 Cows or Fewer, 2015

Item	Average Top Third Farms		
	Per Cow	Per Cwt.	Total
Number of cows or cwt. milk	159	34,356	
<u>Accrual Operating Receipts</u>			
Milk	\$3,978	\$18.37	\$631,025
Dairy cattle	390	1.80	61,787
Dairy calves	119	0.55	18,909
Other livestock	1	0.00	117
Crops	212	0.98	33,582
Miscellaneous receipts	<u>164</u>	<u>0.76</u>	<u>25,945</u>
Total	\$4,863	\$22.45	\$771,365
<u>Accrual Operating Expenses</u>			
Hired labor	\$ 420	\$ 1.94	\$ 66,592
Dairy grain & concentrate	\$1,287	5.94	204,113
Dairy roughage	26	0.12	4,144
Nondairy feed	0	0.00	0
Professional nutritional services	0	0.00	33
Machinery hire/rent/lease	80	0.37	12,755
Machinery repair & farm vehicle expense	234	1.08	37,155
Fuel, oil & grease	175	0.81	27,699
Replacement livestock	20	0.09	3,191
Breeding	65	0.30	10,271
Veterinary & medicine	113	0.52	17,938
Milk marketing	233	1.07	36,901
Bedding	58	0.27	9,276
Milking supplies	115	0.53	18,199
Cattle lease	0	0.00	0
Custom boarding	23	0.11	3,722
bST expense	0	0.00	0
Livestock professional fees	15	0.07	2,331
Other livestock expense	41	0.19	6,496
Fertilizer & lime	146	0.68	23,190
Seeds & plants	141	0.65	22,394
Spray & other crop expenses	86	0.40	13,597
Crop professional fees	2	0.01	290
Land, building, fence repair	59	0.27	9,298
Taxes	118	0.55	18,725
Real estate rent/lease	39	0.18	6,253
Insurance	69	0.32	10,885
Utilities	103	0.47	16,307
Other professional fees	23	0.10	3,572
Miscellaneous	<u>19</u>	<u>0.09</u>	<u>2,969</u>
Total Less Interest Paid	\$3,709	\$17.12	\$588,295
<u>Net Accrual Operating Income (without interest paid)</u>	1,154	5.33	183,070
- Change in livestock/crop inventory*	214	0.99	33,931
- Change in accounts receivable	-34	-0.16	-5,339
- Change in feed/supply inventory**	-65	-0.30	-10,382
+ Change in accounts payable***	<u>72</u>	<u>0.33</u>	<u>11,483</u>
NET CASH FLOW	\$1,112	\$ 5.13	\$176,344
- Net personal withdrawals from farm (see footnote p.15)	<u>425</u>	<u>1.96</u>	<u>67,420</u>
Available for Farm Debt Payments & Investments	\$ 687	\$ 3.17	\$108,924
- Farm debt payments	<u>689</u>	<u>3.18</u>	<u>109,361</u>
Available for Farm Investment	\$ -3	\$ -0.01	\$ -437
- Capital purchases: cattle, machinery & improvements	<u>676</u>	<u>3.12</u>	<u>107,293</u>
Additional Capital Needed	\$ 679	\$ 3.14	\$107,730

\*Includes change in advance government receipts. \*\*Includes change in prepaid expenses.

\*\*\*Excludes change in interest account payable.

## Cropping Analysis

The cropping program is an important part of the dairy farm business and often represents opportunities for improved productivity and profitability. A complete evaluation of what the available land resources are, how they are being used, the level of crop yields, and what it costs to produce crops is important in evaluating alternative cropping and feed purchasing alternatives.

### LAND RESOURCES AND CROP PRODUCTION

57 Dairy Farms with 300 Cows or Fewer, 2015

Item	Average 57 Farms			Top Third Farms		
<u>Land</u>	<u>Owned</u>	<u>Rented</u>	<u>Total</u>	<u>Owned</u>	<u>Rented</u>	<u>Total</u>
Tillable	239	138	376	314	156	471
Nontillable	33	16	50	49	20	69
Other nontillable	93	4	98	162	4	166
Total	366	158	524	526	181	706
<u>Crop Yields</u>	<u>Farms</u>	<u>Acres*</u>	<u>Production/Acre</u>	<u>Farms</u>	<u>Acres</u>	<u>Production/Acre</u>
Hay crop	54	223	2.56 tn DM	19	244	2.54 tn DM
Corn silage	50	100	17.54 tn	19	126	17.30 tn
			6.31 tn DM			6.18 tn DM
Other forage	6	43	4.34 tn DM	2	43	1.06 tn DM
Total forage	54	321	3.67 tn DM	19	375	3.75 tn DM
Corn grain	21	77	120 bu	8	91	120 bu
Oats	8	47	52 bu	5	41	63 bu
Wheat	3	32	67 bu	1	20	55 bu
Other crops	18	77		7	81	
Tillable pasture	10	74		3	84	
Idle	10	30		4	34	
Total Tillable Acres	57	379		19	471	

\*This column represents the average acreage for the farms producing that crop. Average acreages including those farms not producing were hay crop 212, corn silage 88, corn grain 28, oats 7, tillable pasture 13, and idle 5.

Average crop acres and yields are for the farms reporting each crop. Yields of forage crops have been converted to tons of dry matter using dry matter coefficients reported by the farmers. Grain production has been converted to bushels of dry grain equivalent based on dry matter information provided.

The following crop/dairy ratios indicate the relationship between forage production, forage production resources, and the dairy herd.

### CROP/DAIRY RATIOS

54 Dairy Farms with 300 Cows or Fewer, 2015\*\*

Item	Average 54 Farms	Top Third Farms
Total tillable acres per cow	2.91	2.97
Total forage acres per cow	2.38	2.36
Harvested forage dry matter, tons per cow	8.71	8.85

\*\*Excludes farms that do not harvest forages.

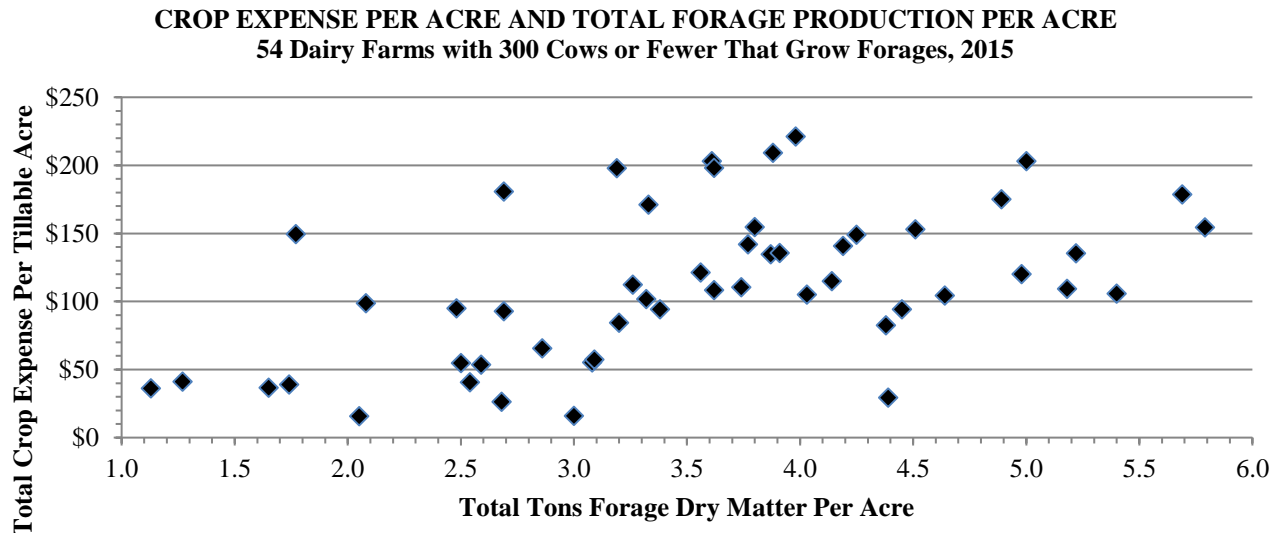
**Cropping Analysis** (continued)

Crop input costs per tillable acre are reported in the table below. The chart below shows the relationship between total forage dry matter per acre and total crop input costs. Intensive grazing was used on 8 farms, 2 of which are in the "Top Third Farms" group.

**CROP RELATED ACCRUAL EXPENSES**

Dairy Farms with 300 Cows or Fewer Reporting Forage Production, 2015

Item	Average 54 Farms		Top Third Farms	
	Total Per Tillable Acre			
Number of farms reporting	54		19	
Average number of acres	393		471	
Fertilizer & lime expenses	\$	43.74	\$	52.43
Seeds & plants		43.30		51.28
Spray & other crop expenses		25.34		28.35
<b>TOTAL</b>	\$	<b>112.38</b>	\$	<b>132.06</b>



Most machinery costs are associated with crop production and should be analyzed with the crop enterprise. Total machinery expenses include the major fixed costs (interest and depreciation), as well as the accrual operating costs. Although machinery costs have not been allocated to individual crops, they are shown below per total tillable acre.

**ACCRUAL MACHINERY EXPENSES**

54 Dairy Farms with 300 Cows or Fewer That Grow Forages, 2015

Machinery Expense	Average 54 Farms		Top Third Farms	
	Total Expenses	Per Tillable Acre	Total Expenses	Per Tillable Acre
Fuel, oil & grease	\$ 20,675	\$ 52.59	\$ 27,699	\$ 58.84
Machinery repair & vehicle expense	34,003	86.50	37,155	78.92
Machine hire, rent & lease	12,543	31.91	12,755	27.09
Interest (5%)	20,621	52.46	26,927	57.20
Depreciation	<u>37,098</u>	<u>94.37</u>	<u>39,401</u>	<u>83.69</u>
<b>Total</b>	\$ 124,941	\$ 317.83	\$ 143,937	\$ 305.74

**Dairy Analysis**

Analysis of the dairy enterprise can reveal strengths and weaknesses of the dairy farm business. Information on this page should be used in conjunction with DHI and other dairy production information. Changes in dairy herd size and market values that occur during the year are identified in the table below. The change in inventory value without appreciation is attributed to physical changes in herd size and quality. Any change in inventory is included as an accrual farm receipt when calculating all of the profitability measures on pages 8 and 9.

**DAIRY HERD INVENTORY**  
57 Dairy Farms with 300 Cows or Fewer, 2015

Item	Dairy Cows		Bred		Heifer Open		Calves	
	No.	Value	No.	Value	No.	Value	No.	Value
<u>Average 57 Farms:</u>								
Beg. year (owned)	127	\$191,488	39	\$51,672	39	\$34,071	32	\$15,970
+ Change w/o apprec.		10,858		-1,135		3,182		532
+ Appreciation		<u>570</u>		<u>-121</u>		<u>-440</u>		<u>-502</u>
End year (owned)	134	\$202,916	39	\$50,416	42	\$36,813	33	\$16,001
End including leased	134							
Average number	130		112	(all age groups)				
<u>Top Third Farms:</u>								
Beg. year (owned)	152	\$232,463	47	68,595	51	45,682	39	21,253
+ Change w/o apprec.		16,147		-1,674		4,934		1,566
+ Appreciation		<u>4,279</u>		<u>-216</u>		<u>-1,768</u>		<u>-837</u>
End year (owned)	163	\$252,889	46	\$66,705	55	\$48,847	43	\$21,982
End including leased	163							
Average number	159		140	(all age groups)				

Total milk sold and milk sold per cow are extremely valuable measures of size and productivity, respectively, on the dairy farm. These measures of milk output are based on pounds of milk marketed during the year. Farm managers on DHI should compare milk sold per cow with their rolling herd average on the test date nearest December 31 to see how close the DHI estimate of milk produced is to actual milk sales.

**MILK PRODUCTION**  
57 Dairy Farms with 300 Cows or Fewer, 2015

Item	Average 57 Farms	Top Third Farms
Total milk sold, lbs.	2,803,881	3,435,561
Milk sold per cow, lbs.	21,515	21,658
Average milk plant test, percent butterfat (average of farms reporting)	3.89	3.90

Monitoring and evaluating culling practices and experiences on an annual basis are important herd management tools. Culling rate can have an affect on both milk per cow and profitability.

**ANIMALS LEAVING THE HERD**  
57 Dairy Farms with 300 Cows or Fewer, 2015

Item	Average 57 Farms		Top Third Farms	
	Number	Percent*	Number	Percent*
Cows sold for beef	32	24.7	39	24.6
Cows sold for dairy	2	1.6	1	0.9
Cows died	5	4.0	7	4.7
Culling rate**		28.7		29.3

\*Percent of average number of cows in the herd.

\*\*Cows sold for beef plus cows died.

The cost of producing milk has been compiled using the whole farm method and is featured in the following table. Accrual receipts from milk sales can be compared with the accrual costs of producing milk per cow and per hundredweight of milk. Using the whole farm method, operating costs of producing milk are estimated by deducting nonmilk accrual receipts from total accrual operating expenses including expansion livestock purchased. Purchased inputs cost of producing milk are the operating costs plus depreciation. Total costs of producing milk include the operating costs of producing milk plus depreciation on machinery and buildings, the value of unpaid family labor, the value of operators' labor and management, and the interest charge for using equity capital.

**ACCRUAL RECEIPTS FROM DAIRY, COSTS OF PRODUCING MILK,  
AND PROFITABILITY**

57 Dairy Farms with 300 Cows or Fewer, 2015

Item	Average 57 Farms			Top Third Farms		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
<u>Accrual Cost of Producing Milk</u>						
Operating costs	\$ 431,715	\$ 3,313	\$ 15.40	\$ 476,381	\$ 3,003	\$ 13.87
Purchased inputs costs	\$ 482,248	\$ 3,700	\$ 17.20	\$ 527,728	\$ 3,327	\$ 15.36
Total costs	\$ 626,606	\$ 4,808	\$ 22.35	\$ 709,373	\$ 4,472	\$ 20.65
<u>Accrual Receipts</u>						
<u>From Milk</u>	\$ 511,067	\$ 3,922	\$ 18.23	\$ 631,025	\$ 3,978	\$ 18.37
Net Milk Receipts	\$ 481,791	\$ 3,697	\$ 17.18	\$ 594,124	\$ 3,745	\$ 17.29
Net Farm Income						
without Appreciation	\$ 28,819	\$ 221	\$ 1.03	\$ 103,298	\$ 651	\$ 3.01
Net Farm Income						
with Appreciation	\$ 79,733	\$ 612	\$ 2.84	\$ 187,720	\$ 1,183	\$ 5.46

The accrual operating expenses most commonly associated with the dairy enterprise are listed in the table below. Feed and crop expenses include total purchased dairy feed plus fertilizer, seeds, spray and other crop expenses.

**DAIRY RELATED ACCRUAL EXPENSES**

57 Dairy Farms with 300 Cows or Fewer, 2015

Item	Average 57 Farms		Top Third Farms	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Purchased dairy grain & concentrate	\$ 1,356	\$ 6.30	\$ 1,287	\$ 5.94
Purchased dairy roughage	84	0.39	26	0.12
Total Purchased Dairy Feed	\$ 1,441	\$ 6.70	\$ 1,313	\$ 6.06
Purchased grain & conc. as % of milk receipts		33%		31%
Purchased feed & crop expense	\$ 1,782	\$ 8.28	\$ 1,688	\$ 7.79
Purchased feed & crop expense as % of milk receipts		45%		41%
Breeding	\$ 63	\$ 0.29	\$ 65	\$ 0.30
Veterinary & medicine	123	0.57	113	0.52
Milk marketing	225	1.04	233	1.07
Bedding	69	0.32	58	0.27
Milking supplies	98	0.45	115	0.53
Cattle lease	0	0.00	0	0.00
Custom boarding	47	0.22	23	0.11
bST	12	0.06	0	0.00
Livestock professional fees	19	0.09	15	0.07
Other livestock expense	47	0.22	41	0.19

**Capital and Labor Efficiency Analysis**

Capital efficiency factors measure how effectively the capital is being used in the farm business. Measures of labor efficiency are key indicators of management's success in generating products per unit of labor input.

**CAPITAL EFFICIENCY**

57 Dairy Farms with 300 Cows or Fewer, 2015

Item	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
<u>Average 57 Farms:</u>				
Farm capital*	\$500,611	\$14,482	\$5,015	\$7,908
Real estate*		6,918		3,777
Machinery & equipment	104,769	3,031	1,050	
<u>Ratios</u>				
Asset turnover*	Operating Expense	Interest Expense	Depreciation Expense	
0.35	0.84	0.03	0.08	
<u>Top Third Farms:</u>				
Farm capital*	\$567,452	\$15,561	\$5,243	\$7,849
Real estate*		7,484		3,775
Machinery & equipment	123,804	3,395	1,144	
<u>Ratios</u>				
Asset turnover*	Operating Expense	Interest Expense	Depreciation Expense	
0.35	0.77	0.03	0.06	

\*Excludes rented farms.

**LABOR FORCE INVENTORY AND ANALYSIS**

57 Dairy Farms with 300 Cows or Fewer, 2015

Labor Force	Months	Age	Years of Education	Value of Labor & Management
<u>Average 57 Farms:</u>				
Operator number 1	13.5	53	13	\$ 42,074
Operator number 2	5.0	53	13	16,684
Operator number 3	2.5	42	14	7,368
Family paid	4.8			
Family unpaid	3.3			
Hired	<u>16.1</u>			
Total	45.2	/ 12 = 3.77 Worker Equivalent 1.51 Operator/Manager Equivalent		
<u>Top Third Farms: Total</u>	52.2	/ 12 = 4.35 Worker Equivalent 1.75 Operator/Manager Equivalent		

Labor Efficiency	Average 57 Farms		Top Third Farms	
	Total	Per Worker	Total	Per Worker
Cows, average number	130	35	159	36
Milk sold, pounds	2,803,881	744,723	3,435,561	790,238
Tillable acres	376	100	471	108

Labor Costs	Average 57 Farms			Top Third Farms		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
Value of operator(s)						
labor (\$2,600/month)	\$ 59,162	\$ 454	\$ 2.11	\$ 68,336	\$ 431	\$ 1.99
Family unpaid (\$2,600/month)	8,684	67	0.31	9,724	61	0.28
Hired	<u>60,442</u>	<u>464</u>	<u>2.16</u>	<u>66,592</u>	<u>420</u>	<u>1.94</u>
Total Labor	\$128,289	\$ 984	\$ 4.58	\$144,652	\$ 912	\$ 4.21
Machinery Cost	\$119,813	\$ 919	\$ 4.27	\$143,937	\$ 907	\$ 4.19
Total Labor & Machinery	\$248,102	\$1,904	\$ 8.85	\$288,589	\$1,819	\$ 8.40
Hired labor expense per hired worker equivalent		\$34,737			\$32,994	
Hired labor expense as % of milk sales		11.8%			10.6%	

## COMPARATIVE ANALYSIS OF THE FARM BUSINESS

### Comparison to Top Third

Comparing your business with average data from DFBS cooperators that participated in both of the last two years can be helpful in establishing your goals for these parameters. Both the average of the same 33 farms and the top 50% of farms based on rate of return of all assets without appreciation are presented below. It is equally important for you to determine the progress your business has made over the past two or three years, to compare this progress to your goals, and to set goals for the future.

### PROGRESS OF THE FARM BUSINESS

Same 49 Dairy Farms with 300 Cows or Fewer, 2014 & 2015

Selected Factors	Average of Same 49 Farms*		Average of Same 15 Top Third Farms*	
	2014	2015	2014	2015
<u>Size of Business</u>				
Average number of cows	119	126	147	159
Average number of heifers	101	108	128	141
Milk sold, lbs.	2,496,837	2,691,394	3,076,141	3,443,288
Worker equivalent	3.71	3.64	4.58	4.44
Total tillable acres	358	366	472	474
<u>Rates of Production</u>				
Milk sold per cow, lbs.	20,985	21,322	20,936	21,665
Hay DM per acre, tons	2.6	2.5	2.5	2.4
Corn silage per acre, tons	17.9	17.1	16.8	16.6
<u>Labor Efficiency</u>				
Cows per worker	32	35	32	36
Milk sold/worker, lbs.	673,002	739,394	671,646	775,515
<u>Cost Control</u>				
Grain & concentrate purchased as % of milk sales	27%	34%	26%	33%
Dairy feed & crop expense per cwt. milk	\$ 9.26	\$ 8.26	\$ 9.05	\$ 7.92
Labor & machinery costs/cow	\$ 2,127	\$ 1,902	\$ 2,254	\$ 1,825
Operating cost of producing cwt. of milk	\$ 17.30	\$ 15.48	\$ 17.17	\$ 13.93
<u>Capital Efficiency**</u>				
Farm capital per cow***	\$ 14,166	\$ 14,308	\$ 14,280	\$ 14,671
Machinery & equipment per cow	\$ 2,779	\$ 2,879	\$ 2,889	\$ 3,152
Asset turnover ratio***	0.46	0.36	0.47	0.38
<u>Profitability</u>				
Net farm income w/o appreciation	\$ 156,660	\$ 24,927	\$ 194,377	\$ 101,573
Net farm income with appreciation	\$ 194,460	\$ 82,259	\$ 268,384	\$ 205,143
Labor & management income per operator/manager	\$ 59,059	\$ -34,450	\$ 64,378	\$ 3,078
Rate of return on equity capital with appreciation	10.2%	1.1%	11.9%	7.0%
Rate of return on all capital with appreciation	8.5%	1.7%	9.9%	6.2%
<u>Financial Summary</u>				
Farm net worth, end year	\$1,300,040	\$1,350,242	\$1,668,118	\$1,829,720
Debt to asset ratio	0.26	0.26	0.26	0.24
Farm debt per cow	\$ 3,628	\$ 3,623	\$ 3,734	\$ 3,588

\*Farms participating both years. \*\*Average for the year. \*\*\*Excludes rented farms.



**RECEIPTS AND EXPENSES PER COW AND PER CWT.**

Same 49 Dairy Farms with 300 Cows or Fewer, 2014 &amp; 2015

Item	2014		2015	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	119		126	
Cwt. of Milk Sold		24,968		26,914
<b><u>ACCRUAL OPERATING RECEIPTS</u></b>				
Milk	\$5,391	\$25.69	\$3,886	\$18.23
Dairy cattle	411	1.96	419	1.96
Dairy calves	84	0.40	105	0.49
Other livestock	10	0.05	6	0.03
Crops	194	0.92	161	0.76
Miscellaneous receipts	<u>159</u>	<u>0.76</u>	<u>154</u>	<u>0.72</u>
Total Receipts	\$6,249	\$29.78	\$4,732	\$22.19
<b><u>ACCRUAL OPERATING EXPENSES</u></b>				
Hired labor	\$ 489	\$ 2.33	\$ 494	\$ 2.32
Dairy grain & concentrate	1,459	6.95	1,332	6.24
Dairy roughage	95	0.45	79	0.37
Nondairy feed	2	0.01	0	0.00
Professional nutritional services	0	0.00	1	0.01
Machine hire/rent/lease	107	0.51	101	0.47
Mach. repair & vehicle exp.	305	1.45	255	1.20
Fuel, oil & grease	231	1.10	152	0.71
Replacement livestock	22	0.10	34	0.16
Breeding	68	0.32	62	0.29
Veterinary & medicine	131	0.62	121	0.57
Milk marketing	206	0.98	222	1.04
Bedding	69	0.33	75	0.35
Milking supplies	99	0.47	93	0.44
Cattle lease	1	0.00	0	0.00
Custom boarding	45	0.21	42	0.19
bST expense	14	0.07	11	0.05
Livestock professional fees	23	0.11	22	0.10
Other livestock expense	47	0.22	47	0.22
Fertilizer & lime	176	0.84	126	0.59
Seeds & plants	139	0.66	124	0.58
Spray/other crop expense	67	0.32	80	0.37
Crop professional fees	6	0.03	20	0.10
Land, building, fence repair	94	0.45	73	0.34
Taxes	116	0.55	115	0.54
Real estate rent/lease	50	0.24	59	0.27
Insurance	73	0.35	75	0.35
Utilities	139	0.66	114	0.53
Interest paid	132	0.63	131	0.61
Other professional fees	25	0.12	22	0.11
Miscellaneous	<u>32</u>	<u>0.15</u>	<u>23</u>	<u>0.11</u>
Total Operating Expenses	\$4,460	\$21.25	\$4,106	\$19.26
Expansion Livestock	29	0.14	41	0.19
Extraordinary Expense	5	0.02	8	0.04
Machinery Depreciation	340	1.62	266	1.25
Real Estate Depreciation	<u>98</u>	<u>0.47</u>	<u>114</u>	<u>0.53</u>
Total Expenses	\$4,932	\$23.50	\$4,535	\$21.27
Net Farm Income Without Appreciation	\$1,317	\$ 6.27	\$ 197	\$ 0.93

**RECEIPTS AND EXPENSES PER COW AND PER CWT.**  
Same 15 Top 50% Dairy Farms with 300 Cows or Fewer, 2014 & 2015

Item	2014		2015	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	147		159	
Cwt. Of Milk Sold		30,761		34,433
<b><u>ACCRUAL OPERATING RECEIPTS</u></b>				
Milk	\$5,380	\$25.70	\$3,966	\$18.30
Dairy cattle	433	2.07	424	1.96
Dairy calves	78	0.37	113	0.52
Other livestock	11	0.05	2	0.01
Crops	183	0.87	262	1.21
Miscellaneous receipts	<u>155</u>	<u>0.74</u>	<u>163</u>	<u>0.75</u>
Total Receipts	\$6,239	\$29.80	\$4,929	\$22.75
<b><u>ACCRUAL OPERATING EXPENSES</u></b>				
Hired labor	\$529	\$2.53	\$478	\$2.21
Dairy grain & concentrate	1,392	6.65	1,292	5.96
Dairy roughage	57	0.27	33	0.15
Nondairy feed	0	0.00	0	0.00
Professional nutritional services	0	0.00	0	0.00
Machine hire/rent/lease	90	0.43	89	0.41
Mach. repair & vehicle exp.	346	1.65	243	1.12
Fuel, oil & grease	260	1.24	172	0.79
Replacement livestock	15	0.07	17	0.08
Breeding	69	0.33	65	0.30
Veterinary & medicine	137	0.66	121	0.56
Milk marketing	197	0.94	233	1.08
Bedding	69	0.33	66	0.30
Milking supplies	101	0.48	112	0.52
Cattle lease	0	0.00	0	0.00
Custom boarding	4	0.02	30	0.14
bST expense	0	0.00	0	0.00
Livestock professional fees	27	0.13	19	0.09
Other livestock expense	48	0.23	39	0.18
Fertilizer & lime	200	0.95	159	0.74
Seeds & plants	164	0.78	139	0.64
Spray/other crop expense	81	0.39	90	0.41
Crop professional fees	2	0.01	2	0.01
Land, building, fence repair	98	0.47	68	0.31
Taxes	127	0.61	115	0.53
Real estate rent/lease	50	0.24	44	0.20
Insurance	63	0.30	63	0.29
Utilities	132	0.63	97	0.45
Interest paid	134	0.64	139	0.64
Other professional fees	21	0.10	25	0.12
Miscellaneous	<u>24</u>	<u>0.12</u>	<u>17</u>	<u>0.08</u>
Total Operating Expenses	\$4,436	\$21.19	\$3,968	\$18.32
Expansion Livestock	17	0.08	14	0.06
Extraordinary Expense	8	0.04	16	0.08
Machinery Depreciation	392	1.87	232	1.07
Real Estate Depreciation	<u>63</u>	<u>0.30</u>	<u>59</u>	<u>0.27</u>
Total Expenses	\$4,916	\$23.48	\$4,289	\$19.80
Net Farm Income Without Appreciation	\$1,323	\$6.32	\$639	\$2.95

## Regional Farm Business Chart

The Farm Business Chart is a tool which can be used in analyzing your business. Compare your business by drawing a line through or near the figure in each column which represents your current level of performance. The five figures in each column represent the average of each 20 percent or quintile of farms included in the regional summary. Use this information to identify business areas where more challenging goals are needed.

### FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS

57 Dairy Farms with 300 Cows or Fewer, 2015

Size of Business			Rate of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(14)*	(12)	(12)	(12)	(11)	(11)	(14)	(14)
6.4	233	5,301,565	25,735	4.0	21	52	1,120,753
4.7	181	3,827,447	23,627	2.9	19	40	873,963
3.6	126	2,748,849	22,103	2.4	17	34	713,174
2.7	78	1,589,684	19,916	2.1	15	27	543,468
1.8	46	840,712	14,531	1.0	4	20	391,849

Cost Control						Culling Rates	
Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk	Death Rate	Sell Rate
(12)	(12)	(14)	(14)	(12)	(12)	(12)	(12)
\$664	21%	\$491	\$1,336	\$947	\$5.79	0.8%	10.9%
1,082	30	739	1,706	1,545	7.33	2.5	21.7
1,390	34	901	1,939	1,836	8.29	3.7	25.4
1,570	38	1,051	2,236	2,026	9.14	4.5	29.5
1,827	45	1,385	2,804	2,364	10.43	9.4	38.3

Value and Cost of Milk Production			Profitability			
Milk Receipts Per Cow	Operating Cost Production Per Cwt.	Total Cost Production Per Cwt.	% Rate of Return on All Capital w/o Appreciation	Net Farm Income w/o Appreciation	Labor & Mgmt. Income Per Operator	Change in Net Worth with Appreciation
(12)	(12)	(12)	(4)	(4)	(4)	(8)
\$4,633	\$11.32	\$19.36	3.6%	\$144,811	\$30,288	\$289,268
4,205	14.06	21.12	0.2	54,454	-8,013	37,829
4,002	15.12	22.88	-1.5	25,957	-25,748	1,965
3,659	16.29	24.76	-4.2	-968	-58,519	-28,935
2,656	18.88	28.70	-11.6	-68,594	-127,542	-87,120

\*Page number of the participant's DFBS where the factor is located.

## **Supplementary Information**

Each year DFBS cooperators volunteer to complete supplementary data collection forms looking at selected management aspects of the business or specific research areas being studied. This is in addition to the normal DFBS data collection form. An area that was examined this year was the source of dairy replacements. Following is a summary of this information.

### **SOURCE OF DAIRY REPLACEMENTS** 33 Dairy Farms, 2015

<u>Animals Entering Herd</u>	Average
Number calving in 2015 for first time	276
Animals purchased, % <sup>1</sup>	4.2
Animals raised by farm, % <sup>2</sup>	95.8
 <u>Current Heifer Inventory</u>	
Raised on dairy, %	87.2
Raised by a custom grower, %	12.8

<sup>1</sup> Animals purchased are animals purchased from a different farm and were not the farm's genetics.

<sup>2</sup> Animals raised by farm are animals that were born on the farm and entered the herd, which includes animals raised by the farm or custom grower.

On the average farm, 276 animals calved for the first time in 2015. The breakdown on the source of these animals was 4.2 percent purchased and 95.8 percent raised on the farm. Of the current heifer inventory, 87.2 percent were raised on the dairy and 12.8 percent were raised by a custom grower. There is increased interest in evaluating the dairy replacement enterprise.

## **Milk Income and Marketing Expense Breakdown**

Starting January 1<sup>st</sup>, 2000, the northeast switched to multiple components pricing, which changed the format of the milk check and how farmers received payment for their milk. To examine the breakdown of the gross milk income and the marketing expenses, 28 farms filled out a detailed form for all the different sources of income for milk sales and the milk marketing expenses on an accrual basis. This information is reported in the following two tables. The tables are divided into six different areas, each representing a different area of income or expenses.

The first section looks at the value of the milk components on a per cwt. basis. The second area looks at the Producer Price Differential. The third area looks at the premiums a farm receives. Any premiums not specifically noted as quality or volume-related are included in market premiums. The fourth area looks at the expenses associated with marketing milk. A line item in this section is the expense associated with utilizing forward contracting or hedging programs to market milk, such as commissions or broker fees. The fifth area is income from forward contracting or hedging programs. The sixth area is the patronage dividends or refunds from the milk cooperatives. Equity purchased in the milk cooperative utilizing a monthly deduction from the milk check or a percent of the patronage dividend is treated as a capital purchase and is not a milk marketing expense. The cumulative total for these six areas is the net price received on farms. For participating farms, the net farm price can be found on page 13 of the DFBS report.

The table on page 9 reports the averages for these different areas. The table on page 10 contains the range for each of the individual lines of the report. This table is in farm business chart format with each item sorted independently and ranked by fifths. Numbers for the different areas will not add to the totals for that quintile or to the net price received because the highest farms for each item were averaged, not the same farms throughout the six areas. This table shows the range of income and expenses received by farms for all the different areas.

For your individual farm, compare your accrual numbers following this same format to look at how you compare to other farms in your region and to identify possible areas to generate additional revenue.

**AVERAGE\* MILK INCOME AND MARKETING REPORT**  
28 Dairy Farms with 300 Cows or Fewer, 2015

	Pounds	Percent	Price/Pound	Total	\$/Cwt of Milk
<b>BASE FARM PRICE</b>					
Butterfat	133,139	3.86%	\$2.31	\$308,124	\$8.92
Protein	106,430	3.08%	\$2.22	\$236,160	\$6.84
Solids	197,877	5.73%	\$0.19	\$36,655	\$1.06
<b>Total Component Contribution</b>					<b>\$ 16.82</b>
<b>PPD</b>	3,453,019			\$19,287	<b>\$ 0.56</b>
<b>Base Farm Price</b>					<b>\$ 17.38</b>
<b>Premiums</b>					
Quality				\$9,838	\$0.28
Volume				\$4,458	\$0.13
Market Premiums				\$5,573	\$0.16
<b>Total Premiums</b>					<b>\$ 0.58</b>
<b>BASE FARM PRICE + PREMIUM</b>					<b>\$ 17.96</b>
<hr style="border-top: 1px dashed black;"/>					
<b>Deductions</b>					
Promo				\$5,224	\$0.15
Hauling & Coop Dues				\$29,049	\$0.84
<b>Total Deductions</b>					<b>\$ 0.99</b>
<b>BASE FARM PRICE + PREMIUMS - DEDUCTIONS</b>					<b>\$ 16.97</b>
<b>Marketing Programs</b>					
Futures Contracts, Forward Contracting, Etc.				\$ 1,005	\$0.03
<b>Total Marketing Income</b>					<b>\$ 0.03</b>
<b>Patronage Dividends</b>				\$ 11,921	<b>\$ 0.35</b>
<b>NET PRICE RECEIVED ON FARM, ALL SOURCES</b>					<b>\$ 17.34</b>

**Net Marketing Value, per cwt. (PPD + Total Premiums – Total Deductions)**

**\$ 0.15**

\*Each calculation of an average is independent of the others. Therefore, math operations on the detail will not result in the totals. However, detail in the "\$/Cwt of Milk" column will result in the totals. The average herd size of these 28 farms is 159 cows.

**MILK PRICE INFORMATION BY QUARTILE\***  
 (Each Category Sorted Independently)  
 28 Dairy Farms with 300 Cows or Fewer, 2015

	Lowest Quartile	←—————→	Highest Quartile
Butterfat, %	3.68	3.82	4.41
Protein, %	2.98	3.04	3.24
Other Solids, %	5.67	5.69	5.79
Butterfat, \$ per Cwt.	8.45	8.79	9.65
Protein, \$ per Cwt.	6.53	6.70	7.31
Other solids, \$ per Cwt.	0.94	1.04	1.18
<b>Total Component Value per Cwt.</b>	<b>\$ 16.21</b>	<b>\$ 16.56</b>	<b>\$ 17.89</b>
PPD, \$ per Cwt.	0.30	0.46	0.92
<b>Base Farm Price per Cwt.</b>	<b>\$ 16.71</b>	<b>\$ 17.05</b>	<b>\$ 18.55</b>
Quality, \$ per Cwt.	0.03	0.20	0.52
Volume, \$ per Cwt.	0.01	0.08	0.20
Market premium, \$ per Cwt.	0.01	0.08	0.36
<b>Total Premium, \$ per Cwt.</b>	<b>0.21</b>	<b>0.46</b>	<b>0.81</b>
<b>Base Farm Price + Premiums per Cwt.</b>	<b>\$ 17.26</b>	<b>\$ 17.51</b>	<b>\$ 19.16</b>
Promotion, \$ per Cwt.	0.15	0.15	0.15
Hauling & Coop Dues \$ per Cwt.	0.49	0.74	1.24
<b>Total Marketing Expenses per Cwt.</b>	<b>\$ 0.64</b>	<b>\$ 0.89</b>	<b>\$ 1.39</b>
<b>Base + Premiums – Deductions per Cwt.</b>	<b>\$ 16.31</b>	<b>\$ 16.57</b>	<b>\$ 18.18</b>
Futures contract, forward contracting, \$ per Cwt.	0.00	0.00	0.10
<b>Total Marketing Income, \$ per Cwt.</b>	<b>\$ 0.00</b>	<b>\$ 0.00</b>	<b>\$ 0.10</b>
<b>Patronage Dividends, \$ per Cwt.</b>	<b>\$ 0.00</b>	<b>\$ 0.01</b>	<b>\$ 1.14</b>
<b>Net Price Received From All Sources, \$ per Cwt.</b>	<b>\$ 16.44</b>	<b>\$ 16.80</b>	<b>\$ 18.56</b>
<b>Net Marketing Value, \$ per Cwt. (PPD + Total Premiums – Total Deductions)</b>	<b>-0.27</b>	<b>-0.01</b>	<b>0.49</b>

\*Each calculation of an average is independent of all others. Therefore, math operations on the detail will not result in the totals.

**CONDENSED SUMMARY & SELECTED BUSINESS FACTORS**  
**CONDENSED FARM BUSINESS SUMMARY FOR TWO HERD SIZE GROUPS**  
57 Dairy Farms with 300 Cows or Fewer, 2015

Item	37 Farms with Less Than 150 Cows		20 Farms with 150 - 300 Cows	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
<b><u>ACCRUAL EXPENSES</u></b>				
Hired labor	\$ 334	\$ 1.57	\$ 560	\$ 2.58
Dairy grain & concentrate	1,302	6.14	1,397	6.43
Dairy roughage	83	0.39	86	0.40
Nondairy feed	4	0.02	0	0.00
Professional nutritional services	0	0.00	2	0.01
Machine hire, rent & lease	92	0.43	94	0.43
Machine repairs & farm vehicle expense	274	1.29	232	1.07
Fuel, oil & grease	152	0.72	153	0.70
Replacement livestock	49	0.23	17	0.08
Breeding	69	0.33	58	0.27
Veterinary & medicine	106	0.50	135	0.62
Milk marketing	266	1.25	194	0.89
Bedding	65	0.31	72	0.33
Milking supplies	105	0.50	92	0.42
Cattle lease & rent	0	0.00	0	0.00
Custom boarding	14	0.06	72	0.33
bST expense	11	0.05	13	0.06
Livestock professional fees	25	0.12	15	0.07
Other livestock expense	51	0.24	43	0.20
Fertilizer & lime	142	0.67	105	0.49
Seeds & plants	137	0.65	116	0.53
Spray & other crop expense	79	0.37	77	0.35
Crop professional fees	5	0.02	27	0.13
Land, building & fence repair	64	0.30	76	0.35
Taxes & rent	165	0.78	180	0.83
Utilities	121	0.57	106	0.49
Interest paid	143	0.68	139	0.64
Other professional fees	24	0.11	21	0.10
Misc. (including insurance)	98	0.46	99	0.46
Total Operating Expenses	\$3,979	\$18.76	\$4,180	\$19.23
Expansion livestock	22	0.10	59	0.27
Extraordinary expense	5	0.02	9	0.04
Machinery depreciation	242	1.14	296	1.36
Building depreciation	62	0.29	141	0.65
Total Accrual Expenses	\$4,311	\$20.32	\$4,685	\$21.55
<b><u>ACCRUAL RECEIPTS</u></b>				
Milk sales	\$3,819	\$18.00	\$3,998	\$18.39
Dairy cattle	387	1.82	434	1.99
Dairy calves	110	0.52	106	0.49
Other livestock	7	0.03	3	0.01
Crops	143	0.67	147	0.68
Miscellaneous receipts	177	0.84	137	0.63
Total Accrual Receipts	\$4,642	\$21.88	\$4,824	\$22.19
<b><u>PROFITABILITY ANALYSIS (Total)</u></b>				
Net farm income (without appreciation)		\$28,301		\$29,777
Net farm income (with appreciation)		\$49,089		\$136,424
Labor & management income		-\$27,799		-\$89,398
Number of operators		1.40		1.70
Labor & management income/operator		-\$19,856		-\$52,587
Rates of return on: Equity capital w/o apprec.		-4.2%		-2.6%
Equity capital w/ apprec.		-2.0%		2.1%
All capital w/o apprec.		-2.2%		-1.0%
All capital w/ apprec.		-0.5%		2.5%

**SELECTED BUSINESS FACTORS FOR TWO HERD SIZE GROUPS**  
57 Dairy Farms with 300 Cows or Fewer, 2015

Item	37 Farms with Less Than 150 Cows	20 Farms with 150 - 300 Cows
<u>Cropping Program Analysis</u>		
Total Tillable acres	301	516
Tillable acres rented <sup>31</sup>	133	147
Hay crop acres <sup>31</sup>	193	247
Corn silage acres <sup>31</sup>	59	140
Hay crop, tons DM/acre	2.3	2.9
Corn silage, tons/acre	17.5	17.6
Forage DM per cow, tons	10.3	7.6
Tillable acres/cow	3.6	2.4
Fertilizer & lime expense/tillable acre	\$42.90	\$45.16
Machinery cost/tillable acre	\$260	\$379
<u>Dairy Analysis</u>		
Number of cows	85	213
Number of heifers	72	185
Milk sold, lbs.	1,811,632	4,639,542
Butterfat & protein, lbs./cow	1,533	1,439
Milk sold/cow, lbs.	21,211	21,741
Operating cost of prod. milk/cwt.	\$14.98	\$15.70
Total cost of prod. milk/cwt.	\$22.69	\$22.10
Price/cwt. milk sold	\$18.00	\$18.39
Purchased dairy feed/cow	\$1,384	\$1,483
Purchased dairy feed/cwt. milk	\$6.53	\$6.82
Purchased grain & concentrate as % of milk receipts	33%	34%
Purchased feed & crop expense/cwt. milk	\$8.24	\$8.32
Net milk income over purchased feed costs per cow	\$2,169	\$2,321
<u>Capital Efficiency</u>		
Farm capital/worker	\$426,518	\$574,579
Farm capital/cow	\$14,332	\$14,593
Real estate/cow	\$6,666	\$7,104
Machinery investment/cow	\$3,250	\$2,869
Asset turnover ratio	0.34	0.36
<u>Labor Efficiency</u>		
Worker equivalent	2.87	5.42
Operator/manager equivalent	1.40	1.70
Milk sold/worker, lbs.	630,864	856,399
Cows/worker	30	39
Labor cost/cow	\$1,114	\$888
<u>Financial Measures</u>		
Percent equity	75%	73%
Debt/asset ratio - long term	0.25	0.34
Debt/asset ratio - intermediate & current	0.25	0.21
Change in net worth with appreciation	\$13,187	\$86,955
Total farm debt per cow	\$3,515	\$3,959
Debt payments made per cow	\$647	\$949
Debt payments as % of milk sales	17%	24%
Amount available for debt service	\$38,513	\$139,189
Debt coverage ratio for 2015	0.68	0.76

<sup>31</sup>Average of all farms, not only those reporting data.



**INCOME AND EXPENSE PROFILES BY HERD SIZE**

Use two of the following four tables to make an income and expense profile for your dairy farm business. The first two tables represent farms with less than 150 cows. The second two tables are of farms with 150 to 300 cows. The figures in the quintile columns represent the average of the top 20 percent to the bottom 20 percent for each receipt and expenditure category. Each row is computed independently. The farms that comprise the top 20 percent in milk sales do not necessarily make up the top 20 percent of any other category. On each row circle the income and cost measures closest to the one for your farm. Then draw a vertical line connecting your circles on each table. The strongest profile will be a relatively straight line on the left side of the table.

**RECEIPTS AND EXPENSES PER COW**

37 Dairy Farms with 300 Cows or Fewer with Less Than 150 Cows, 2015

Item	QUINTILE				
	1	2	3	4	5
<b>Accrual Operating Receipts</b>					
Milk	\$4,528	\$4,106	\$3,968	\$3,493	\$2,591
Dairy cattle	705	505	388	284	126
Dairy calves	209	153	117	60	4
Other livestock	92	1	0	0	-20
Crops	464	199	82	10	-97
Miscellaneous receipts	357	236	149	91	44
Total Operating Receipts	\$5,590	\$5,039	\$4,672	\$4,228	\$3,195
<b>Accrual Operating Expenses</b>					
Hired labor	\$ 0	\$ 54	\$ 223	\$ 438	\$ 772
Dairy grain & concentrate	628	1,022	1,297	1,564	1,811
Dairy roughage	0	0	0	43	612
Nondairy feed	0	0	0	0	24
Professional nutritional services	0	0	0	0	0
Machinery hire/rent/lease	0	10	37	104	253
Mach. repair & farm vehicle exp.	101	184	264	340	431
Fuel, oil & grease	78	128	155	173	229
Replacement livestock	0	0	0	0	346
Breeding	17	51	66	89	124
Veterinary & medicine	32	66	103	141	213
Milk marketing	163	215	244	293	369
Bedding	3	38	61	81	169
Milking supplies	42	77	99	123	188
Cattle lease	0	0	0	0	0
Custom boarding	0	0	0	0	106
bST expense	0	0	0	0	47
Livestock professional fees	0	12	23	38	66
Other livestock expense	4	19	34	52	162
Fertilizer & lime	5	52	128	201	284
Seeds & plants	16	82	134	156	230
Spray/other crop expenses	6	38	61	81	168
Crop professional fees	0	0	0	0	32
Land, building, fence repair	0	12	34	62	194
Taxes	46	86	122	155	225
Real estate rent/lease	0	10	25	68	166
Insurance	30	48	70	92	136
Utilities	55	95	119	142	222
Interest	11	45	128	198	312
Other professional fees	1	8	19	31	55
Miscellaneous	1	9	16	31	64
Total Operating Expenses	\$2,618	\$3,373	\$3,942	\$4,452	\$5,039
Expansion livestock	0	0	0	0	95
Extraordinary expense	0	0	0	0	32
Machinery depreciation	110	186	230	304	451
Building depreciation	0	13	39	99	212
Net Farm Income w/o Appreciation	\$ 1,163	\$ 584	\$ 388	\$ 92	\$ -479

**RECEIPTS AND EXPENSES PER CWT. OF MILK SOLD**  
37 Dairy Farms with 300 Cows or Fewer with Less Than 150 Cows, 2015

Item	QUINTILE				
	1	2	3	4	5
<u>Accrual Operating Receipts</u>					
Milk	\$19.57	\$18.33	\$17.91	\$17.91	\$16.76
Dairy cattle	3.79	2.28	1.80	1.31	0.71
Dairy calves	1.09	0.70	0.57	0.31	0.01
Other livestock	0.58	0.01	0.00	0.00	-0.09
Crops	2.31	0.98	0.40	0.06	-0.52
Miscellaneous receipts	2.04	1.14	0.72	0.45	0.21
<b>Total Operating Receipts</b>	<b>\$26.15</b>	<b>\$22.99</b>	<b>\$21.72</b>	<b>\$20.57</b>	<b>\$19.14</b>
<u>Accrual Operating Expenses</u>					
Hired labor	\$ 0.00	\$ 0.27	\$ 1.21	\$ 2.08	\$ 3.46
Dairy grain & concentrate	3.72	5.58	6.10	6.62	7.82
Dairy roughage	0.00	0.00	0.00	0.21	2.88
Nondairy feed	0.00	0.00	0.00	0.00	0.11
Professional nutritional services	0.00	0.00	0.00	0.00	0.00
Machinery hire/rent/lease	0.00	0.05	0.18	0.53	1.18
Mach. repair & farm vehicle exp.	0.49	0.98	1.32	1.59	2.15
Fuel, oil & grease	0.39	0.59	0.72	0.84	1.36
Replacement livestock	0.00	0.00	0.00	0.00	1.91
Breeding	0.09	0.24	0.32	0.43	0.57
Veterinary & medicine	0.17	0.36	0.48	0.61	1.02
Milk marketing	0.83	1.09	1.26	1.44	1.66
Bedding	0.01	0.20	0.29	0.41	0.73
Milking supplies	0.24	0.37	0.48	0.58	0.83
Cattle lease	0.00	0.00	0.00	0.00	0.00
Custom boarding	0.00	0.00	0.00	0.00	0.47
bST expense	0.00	0.00	0.00	0.00	0.19
Livestock professional fees	0.00	0.06	0.11	0.18	0.34
Other livestock expense	0.02	0.09	0.17	0.26	0.93
Fertilizer & lime	0.03	0.26	0.60	0.97	1.37
Seeds & plants	0.09	0.46	0.62	0.72	1.03
Spray/other crop expenses	0.03	0.21	0.29	0.39	0.87
Crop professional fees	0.00	0.00	0.00	0.00	0.14
Land, building, fence repair	0.00	0.05	0.15	0.29	0.96
Taxes	0.23	0.40	0.56	0.80	1.32
Real estate rent/lease	0.00	0.04	0.12	0.31	0.90
Insurance	0.15	0.26	0.33	0.42	0.70
Utilities	0.31	0.44	0.56	0.69	1.07
Interest	0.05	0.21	0.66	1.00	1.53
Other professional fees	0.01	0.04	0.09	0.17	0.29
Miscellaneous	0.01	0.05	0.07	0.15	0.31
<b>Total Operating Expenses</b>	<b>\$15.21</b>	<b>\$17.36</b>	<b>\$18.84</b>	<b>\$20.18</b>	<b>\$22.10</b>
Expansion livestock	0.00	0.00	0.00	0.00	0.44
Extraordinary expense	0.00	0.00	0.00	0.00	0.20
Machinery depreciation	0.53	0.89	1.14	1.46	2.48
Building depreciation	0.00	0.06	0.19	0.49	1.00
<b>Net Farm Income w/o Appreciation</b>	<b>\$ 6.07</b>	<b>\$ 3.26</b>	<b>\$ 1.74</b>	<b>\$ 0.44</b>	<b>\$ -2.42</b>

**RECEIPTS AND EXPENSES PER COW**  
20 Dairy Farms with 300 Cows or Fewer with 150 - 300 Cows, 2015

Item	QUINTILE				
	1	2	3	4	5
<u>Accrual Operating Receipts</u>					
Milk	\$4,769	\$4,394	\$4,080	\$3,884	\$2,906
Dairy cattle	768	552	421	285	182
Dairy calves	180	134	113	94	16
Other livestock	23	0	0	0	-7
Crops	536	273	25	0	-104
Miscellaneous receipts	335	141	104	87	36
Total Operating Receipts	\$5,836	\$5,416	\$5,218	\$4,541	\$3,212
<u>Accrual Operating Expenses</u>					
Hired labor	\$ 258	\$ 433	\$ 529	\$ 666	\$ 943
Dairy grain & concentrate	770	1,237	1,493	1,578	1,849
Dairy roughage	0	0	26	72	336
Nondairy feed	0	0	0	0	0
Professional nutritional services	0	0	0	0	9
Machinery hire/rent/lease	0	17	67	130	256
Mach. repair & farm vehicle exp.	89	150	202	266	452
Fuel, oil & grease	94	122	143	171	239
Replacement livestock	0	0	0	0	78
Breeding	16	36	57	78	107
Veterinary & medicine	57	101	126	175	218
Milk marketing	123	161	179	229	283
Bedding	11	41	66	90	155
Milking supplies	40	66	89	123	154
Cattle lease	0	0	0	0	0
Custom boarding	0	0	0	0	342
bST expense	0	0	0	0	67
Livestock professional fees	0	0	3	19	53
Other livestock expense	5	21	36	60	97
Fertilizer & lime	20	47	76	159	244
Seeds & plants	36	102	118	146	178
Spray/other crop expenses	1	36	60	90	202
Crop professional fees	0	0	0	7	117
Land, building, fence repair	1	22	42	95	221
Taxes	43	90	117	148	168
Real estate rent/lease	6	22	48	82	195
Insurance	29	43	60	84	157
Utilities	51	74	93	138	178
Interest	32	74	127	183	274
Other professional fees	2	9	22	32	41
Miscellaneous	1	16	26	33	61
Total Operating Expenses	\$2,735	\$3,797	\$4,314	\$4,780	\$5,298
Expansion livestock	0	0	0	0	333
Extraordinary expense	0	0	0	0	37
Machinery depreciation	125	186	246	381	538
Building depreciation	13	59	107	208	313
Net Farm Income w/o Appreciation	\$ 884	\$ 500	\$ 120	\$ -199	\$ -548

**RECEIPTS AND EXPENSES PER CWT. OF MILK SOLD**  
20 Dairy Farms with 300 Cows or Fewer with 150 - 300 Cows, 2015

Item	QUINTILE				
	1	2	3	4	5
<u>Accrual Operating Receipts</u>					
Milk	\$19.99	\$18.87	\$18.46	\$17.72	\$17.21
Dairy cattle	3.39	2.29	1.89	1.38	1.01
Dairy calves	0.78	0.61	0.52	0.40	0.09
Other livestock	0.11	0.00	0.00	0.00	-0.04
Crops	2.35	1.16	0.11	0.00	-0.51
Miscellaneous receipts	1.55	0.65	0.49	0.39	0.16
<b>Total Operating Receipts</b>	<b>\$25.31</b>	<b>\$22.66</b>	<b>\$22.00</b>	<b>\$21.05</b>	<b>\$20.01</b>
<u>Accrual Operating Expenses</u>					
Hired labor	\$ 1.27	\$ 2.02	\$ 2.44	\$ 3.07	\$ 4.20
Dairy grain & concentrate	4.17	5.78	6.39	7.06	8.45
Dairy roughage	0.00	0.00	0.11	0.33	1.75
Nondairy feed	0.00	0.00	0.00	0.00	0.00
Professional nutritional services	0.00	0.00	0.00	0.00	0.03
Machinery hire/rent/lease	0.00	0.09	0.28	0.61	1.05
Mach. repair & farm vehicle exp.	0.46	0.78	0.96	1.14	1.94
Fuel, oil & grease	0.44	0.58	0.67	0.80	1.09
Replacement livestock	0.00	0.00	0.00	0.00	0.39
Breeding	0.09	0.18	0.24	0.33	0.44
Veterinary & medicine	0.33	0.45	0.60	0.72	0.93
Milk marketing	0.60	0.76	0.89	1.02	1.24
Bedding	0.05	0.22	0.31	0.40	0.64
Milking supplies	0.20	0.30	0.41	0.53	0.69
Cattle lease	0.00	0.00	0.00	0.00	0.00
Custom boarding	0.00	0.00	0.00	0.00	1.40
bST expense	0.00	0.00	0.00	0.00	0.31
Livestock professional fees	0.00	0.00	0.01	0.08	0.23
Other livestock expense	0.02	0.09	0.17	0.28	0.48
Fertilizer & lime	0.08	0.24	0.37	0.75	1.12
Seeds & plants	0.19	0.45	0.51	0.66	0.88
Spray/other crop expenses	0.00	0.17	0.31	0.41	0.97
Crop professional fees	0.00	0.00	0.00	0.04	0.44
Land, building, fence repair	0.01	0.10	0.20	0.47	0.89
Taxes	0.24	0.38	0.49	0.68	0.85
Real estate rent/lease	0.03	0.10	0.24	0.43	0.88
Insurance	0.14	0.22	0.28	0.36	0.70
Utilities	0.27	0.36	0.44	0.59	0.79
Interest	0.14	0.37	0.61	0.86	1.20
Other professional fees	0.01	0.04	0.09	0.14	0.23
Miscellaneous	0.01	0.07	0.11	0.17	0.28
<b>Total Operating Expenses</b>	<b>\$15.89</b>	<b>\$17.72</b>	<b>\$18.96</b>	<b>\$20.66</b>	<b>\$22.67</b>
Expansion livestock	0.00	0.00	0.00	0.00	1.56
Extraordinary expense	0.00	0.00	0.00	0.00	0.25
Machinery depreciation	0.72	0.88	1.17	1.52	2.29
Building depreciation	0.06	0.27	0.59	0.87	1.37
<b>Net Farm Income w/o Appreciation</b>	<b>\$ 4.10</b>	<b>\$ 2.22</b>	<b>\$ 0.63</b>	<b>\$ -0.99</b>	<b>\$ -2.38</b>

### New York State Farm Business Charts

The Farm Business Chart is a tool which can be used in analyzing a business by drawing a line through the figure in each column which represents the current level of management performance. The figure at the top of each column is the average of the top 10 percent of the 173 farms for that factor. The other figures in each column are the average for the second 10 percent, third 10 percent, etc. Each column of the chart is independent of the others. The farms which are in the top 10 percent for one factor would not necessarily be the same farms which make up the top 10 percent for any other factor.

The cost control factors are ranked from low to high, but the lowest cost is not necessarily the most profitable. In some cases, the "best" management position is somewhere near the middle or average. Many things affect the level of costs, and must be taken into account when analyzing the factors.

#### **FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS**

173 New York Dairy Farms, 2014

Size of Business			Rates of Production			Labor Efficiency	
Worker Equiv- alent (14)*	No. of Cows (12)	Pounds Milk Sold (12)	Pounds Milk Sold Per Cow (12)	Tons Hay Crop DM/Acre (11)	Tons Corn Silage Per Acre (11)	Cows Per Worker (14)	Pounds Milk Sold Per Worker (14)
43.1	2,080	54,313,076	28,559	5.3	25	65	1,586,137
28.4	1,270	33,539,575	27,250	4.5	22	53	1,336,051
22.7	1,035	27,003,740	26,643	4.0	21	49	1,208,128
18.9	824	21,327,246	25,968	3.6	20	45	1,132,035
15.2	661	16,453,059	25,432	3.4	19	42	1,054,347
11.6	511	12,332,005	24,759	3.1	18	40	999,368
7.6	334	7,801,745	23,569	2.9	17	38	892,185
5.0	179	3,701,754	22,370	2.5	16	34	757,815
3.5	103	2,128,586	19,365	2.0	14	29	582,032
2.0	53	861,203	13,124	0.9	3	22	369,343

#### Cost Control

Grain Bought Per Cow (12)	% Grain is of Milk Receipts (12)	Machinery Costs Per Cow (14)	Labor & Machinery Costs Per Cow (14)	Feed & Crop Expenses Per Cow (12)	Feed & Crop Expenses Per Cwt. Milk (12)
\$739	18%	\$537	\$1,233	\$1,030	\$6.37
1,239	23	770	1,564	1,630	7.91
1,520	26	859	1,701	1,967	8.37
1,681	27	917	1,807	2,118	8.70
1,775	28	983	1,906	2,233	9.02
1,878	29	1,047	1,970	2,350	9.25
1,939	30	1,118	2,043	2,436	9.67
2,024	31	1,202	2,166	2,519	10.08
2,110	32	1,295	2,367	2,656	10.59
2,344	37	1,572	2,812	2,915	12.10

\*Page number of the participant's DFBS report where the factor is located.

**FARM BUSINESS CHART FOR  
FARM MANAGEMENT COOPERATORS**  
173 New York Dairy Farms, 2014

Milk Receipts Per Cow	Milk Receipts Per Cwt.	Operating Cost Milk Production Per Cow	Operating Cost Milk Production Per Cwt.	Total Cost Milk Production Per Cow	Total Cost Milk Production Per Cwt.
(12)	(12)	(12)	(12)	(12)	(12)
\$7,384	\$27.84	\$2,230	\$13.12	\$3,739	\$18.40
7,023	26.66	3,213	15.37	4,660	19.90
6,768	26.19	3,686	16.04	4,920	20.68
6,583	25.86	3,937	16.51	5,132	21.44
6,406	25.58	4,142	17.02	5,290	22.01
-----					
6,249	25.41	4,301	17.65	5,486	22.49
6,019	25.20	4,534	18.57	5,632	23.38
5,705	25.04	4,736	19.09	5,893	24.18
5,072	24.64	4,999	19.73	6,186	26.34
3,354	23.66	5,448	21.72	6,652	33.68

Profitability						
Net Farm Income Without Appreciation			Net Farm Income With Appreciation		Labor & Management Income	
Total	Per Cow	Operations Ratio	Total	Per Cow	Per Farm	Per Operator
(4)	(12)	(4)	(4)	(12)	(4)	(4)
\$4,016,078	\$2,583	0.35	\$4,686,493	\$3,222	\$3,227,880	\$1,612,645
2,336,674	2,102	0.29	2,855,399	2,588	1,811,699	926,424
1,669,865	1,910	0.27	2,076,389	2,268	1,273,005	637,057
1,320,389	1,757	0.25	1,546,866	2,063	1,004,947	455,781
970,351	1,652	0.24	1,152,837	1,944	731,383	309,980
-----						
697,780	1,526	0.22	889,287	1,778	461,038	229,958
426,295	1,377	0.20	555,913	1,623	291,520	156,637
225,621	1,199	0.17	273,539	1,385	138,710	94,825
125,798	893	0.14	148,273	1,062	56,543	40,728
34,576	328	0.06	36,597	453	-60,251	-39,398

Farm Business Charts for farms with freestall barns and 200 cows or less, 200 to 500 cows, and more than 500 cows, and farms with conventional barns with less than 60 cows and equal to or more than 60 cows are shown on pages 41-45.

**Financial Analysis Chart**

The farm financial analysis chart on page 38 is designed just like the Farm Business Chart and may be used to assess the financial health of the farm business. Most of the financial measures used in the chart are defined on pages 8, 11, 15 and 22 of this publication. References to DFBS output page numbers for participating dairy farmers are provided in the table headings.

**FINANCIAL ANALYSIS CHART**  
173 New York Dairy Farms, 2014

Liquidity (repayment)							
Planned Debt Payments Per Cow	Available for Debt Service Per Cow	Cash Flow Coverage Ratio	Debt Coverage Ratio	Debt Payments as Percent of Milk Sales	Debt Per Cow	Working Capital as % of Total Expenses	Current Ratio
(10)*	(16)	(10)	(10)	(10)	(7)	(7)	(7)
\$ 51	\$1,950	28.46	48.05	0%	\$ 209	70%	63.81
264	1,559	4.75	7.40	3	1,179	49	8.70
426	1,416	3.31	5.19	5	2,163	40	5.63
541	1,283	2.76	4.19	6	2,560	34	4.17
621	1,182	2.35	3.40	7	3,067	29	3.21
713	1,102	1.95	2.94	9	3,629	25	2.74
856	938	1.65	2.50	10	4,039	21	2.33
991	819	1.41	2.05	11	4,630	17	1.87
1,172	581	1.11	1.42	14	5,379	10	1.40
1,570	216	0.43	0.37	20	7,241	-1	0.75
Solvency				Operational Ratios			
Leverage Ratio**	Percent Equity	Debt/Asset Ratio		Operating Expense Ratio	Interest Expense Ratio	Depreciation Expense Ratio	
		Current & Intermediate	Long Term				
(7)	(7)	(7)	(7)	(14)	(14)	(14)	
0.01	99%	0.01	0.00	0.58	0.00	0.02	
0.11	91	0.08	0.00	0.64	0.00	0.04	
0.20	84	0.15	0.05	0.66	0.01	0.04	
0.27	79	0.21	0.13	0.67	0.01	0.05	
0.35	75	0.25	0.23	0.69	0.01	0.05	
0.46	70	0.29	0.31	0.70	0.02	0.06	
0.56	65	0.32	0.39	0.72	0.02	0.07	
0.63	62	0.37	0.46	0.75	0.03	0.07	
0.78	57	0.44	0.55	0.78	0.03	0.09	
1.35	45	0.59	0.81	0.85	0.05	0.13	
Efficiency (Capital)					Profitability		
Asset Turnover (ratio)	Real Estate Investment Per Cow	Machinery Investment Per Cow	Total Farm Assets Per Cow	Change in Net Worth With Appreciation	Percent Rate of Return with Appreciation on:		
					Equity	Investment***	
(14)	(14)	(14)	(14)	(8)	(4)	(4)	
0.98	\$12,306	\$ 760	\$ 7,448	\$3,814,371	41%	27%	
0.80	3,167	1,228	9,156	2,290,942	31	22	
0.74	3,703	1,510	10,063	1,642,462	27	19	
0.69	4,192	1,748	10,681	1,234,750	23	17	
0.65	4,647	1,964	11,315	848,733	20	15	
0.60	5,131	2,219	12,335	584,698	17	13	
0.56	5,676	2,436	13,077	348,105	15	12	
0.52	6,330	2,708	13,895	170,637	12	9	
0.45	7,435	3,212	15,217	90,292	6	6	
0.30	11,101	4,932	19,902	-19,302	-5	-2	

\*Page number of the participant's DFBS report where the factor is located.

\*\*Dollars of debt per dollar of equity, computed by dividing total liabilities by total equity.

\*\*\*Return on all farm capital (no deduction for interest paid) divided by total farm assets

### **Comparison by Type of Barn and Herd Size**

When analyzing a dairy farm business by comparing it to a group of farms, it is important that the group of farms have used as many of the same physical characteristics as possible as the farm being analyzed. To assist in this endeavor, dairy farms in the summary have been divided into those with freestall and those with conventional housing. Conventional housing includes stanchion and tiestall barns. Within each group, is a further classification by size of the dairy herd.

The table on page 40 includes the average values for the resulting five groups of dairy farms. The average size of farms in the five groups ranges from 37 cows on the small conventional farms to 2,462 cows on the largest freestall farms.

The largest freestall farms averaged the highest milk output per cow and per worker, the lowest total cost of production; and, in 2014, they had the highest returns to labor, management and capital.

Farm business charts have been computed for each of the five housing and herd size categories and are on pages 41-45. By comparing the farm's performance on the most appropriate business chart, a farm manager will be better able to evaluate his or her business performance.

### **Herd Size Comparisons**

A detailed comparison of profitability, financial situation and business analysis factors across herd sizes is contained on pages 48-60 of the 2014 State Summary\*. In most years, as herd size increases, the net farm income increases (page 48)\*; and that was the case for 2014. Net farm income without appreciation averaged \$52,279 per farm for the less than 60 cow farms and \$2,479,788 per farm for those with more than 900 cows. Return to all capital without appreciation generally increased as herd size increased. With herd sizes less than 200 cows, many farms find it difficult to find a low cost combination of technology and labor to produce milk. Thus profits are lower for these herds than other herd sizes.

Assets, liabilities and financial measures are presented on pages 55-58\*. All herd size categories saw an increase in net worth during 2014. The largest herd size category experienced an increase in net worth of \$2,306,383. However, percent equity varied as herd size increased. The 600 to 899 herd size category had the lowest percent equity at 70 percent; while the 400 to 599 herd size category averaged the highest percent equity at 79 percent.

Crop yields showed little relationship to herd size, but fertilizer and lime expenses, and machinery cost per tillable acre generally increased as herd size increased (pages 59-60)\*. The farms with more than 900 cows averaged more milk sold per cow than any other size category (page 60). With 26,139 pounds of milk sold per cow, farms in the largest herd size group averaged 7.6 percent more milk output per cow than the average of all herds in the summary with less than 900 cows. Farm capital per cow generally decreased as herd size increased. Milk sold per worker increased dramatically as herd size increased. The farms with 100 cows or more averaged over 1,148,000 pounds of milk sold per worker while the farms with less than 100 cows averaged less than 442,000 pounds per worker.

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\*Wayne A. Knoblauch, Cathryn Dymond, Jason Karszes, and Richard Kimmich, Dairy Farm Management Business Summary, New York State, 2014, Charles H. Dyson School of Applied Economics and Management, Cornell University, R.B. 2015-01, September 2015.



**SELECTED BUSINESS FACTORS BY TYPE OF BARN AND HERD SIZE**

173 New York Dairy Farms, 2014

Item	Farms with:	Tiestall/Stanchion		Freestall		
		<= 60 Cows	>60 Cows	<=200 Cows	201-500 Cows	≥500 Cows
Number of farms		11	13	20	26	91
<b><u>Cropping Program Analysis</u></b>						
Total Tillable acres		222	337	323	703	2,142
Tillable acres rented*		100	200	155	299	1,006
Hay crop acres*		150	225	183	356	873
Corn silage acres*		25	68	96	267	899
Hay crop, tons DM/acre		1.7	2.4	2.6	3.6	3.5
Corn silage, tons/acre		15.4	17.0	18.2	19.8	19.1
Oats, bushels/acre		0	46	0	65	49
Forage DM per cow, tons		9.5	10.9	10.0	9.2	8.3
Tillable acres/cow		4.9	3.9	2.9	2.1	2.0
Fertilizer & lime expense/tillable acre		\$32.82	\$50.27	\$67.76	\$67.47	\$73.69
Total machinery costs		\$55,139	\$97,993	\$130,669	\$386,120	\$1,099,217
Machinery cost/tillable acre		\$247	\$291	\$374	\$549	\$502
<b><u>Dairy Analysis</u></b>						
Number of cows		45	87	119	341	1,123
Number of heifers		38	70	104	285	959
Milk sold, lbs.		795,461	1,708,858	2,599,172	8,635,907	29,164,728
Milk sold/cow, lbs.		17,502	19,572	21,833	25,294	25,965
Operating cost of producing milk/cwt.		\$16.76	\$18.43	\$17.91	\$17.32	\$17.24
Total cost of producing milk/cwt.		\$31.20	\$26.39	\$24.34	\$22.10	\$21.08
Price/cwt. milk sold		\$25.15	\$25.68	\$25.95	\$25.70	\$25.41
Purchased dairy feed/cow		\$1,189	\$1,398	\$1,753	\$1,975	\$2,021
Purchased dairy feed/cwt. milk		\$6.79	\$7.14	\$8.03	\$7.81	\$7.78
Purchased grain & concentrate as % of milk receipts		24%	25%	28%	29%	29%
Purchased feed & crop expense/cwt milk		\$8.00	\$9.14	\$9.67	\$9.15	\$9.10
<b><u>Capital Efficiency</u></b>						
Farm capital/worker		\$362,724	\$410,022	\$370,250	\$472,045	\$522,752
Farm capital/cow		\$17,159	\$14,652	\$12,254	\$11,946	\$11,430
Farm capital/tillable acre owned		\$6,397	\$9,317	\$8,699	\$10,105	\$11,299
Real estate/cow		\$9,507	\$6,741	\$5,146	\$4,904	\$4,634
Machinery investment/cow		\$3,499	\$3,511	\$2,406	\$2,349	\$1,893
Asset turnover ratio		0.31	0.40	0.53	0.64	0.68
<b><u>Labor Efficiency</u></b>						
Worker equivalent		2.15	3.12	3.95	8.64	24.56
Operator/manager equivalent		1.25	1.42	1.34	1.84	2.44
Milk sold/worker, lbs.		369,552	547,418	658,852	999,141	1,187,489
Cows/worker		21	28	30	40	46
Labor cost/cow		\$1,364	\$1,078	\$1,040	\$905	\$847
Labor cost/tillable acre		\$279	\$279	\$383	\$439	\$444
<b><u>Profitability &amp; Balance Sheet Analysis</u></b>						
Net farm income (without appreciation)		\$46,268	\$96,700	\$167,144	\$567,183	\$1,907,986
Labor & management income/operator		\$1,626	\$28,068	\$73,718	\$224,607	\$598,499
Rate return on all capital with appreciation		-0.5%	4.8%	7.8%	15.0%	17.4%
Farm debt/cow		\$3,660	\$3,636	\$2,810	\$3,135	\$3,507
Percent equity		79%	75%	77%	75%	71%

\*Average of all farms, not only those reporting data.

**FARM BUSINESS CHART FOR SMALL TIESTALL/STANCHION DAIRY FARMS**  
11 Tiestall/Stanchion Dairy Farms with 60 or Less Cows, New York, 2014

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(14)*	(12)	(12)	(12)	(11)	(11)	(14)	(14)
3.29	53	1,089,634	24,055	2.3	20	32	640,358
2.26	50	980,545	20,896	2.0	18	25	459,022
2.04	47	899,062	17,728	1.8	16	23	362,842
2.00	45	661,668	15,472	1.6	13	22	309,925
1.50	37	496,086	11,602	0.8	7	16	251,394

Cost Control						
Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk	
(12)	(12)	(14)	(14)	(12)	(12)	
\$579	15%	\$582	\$1,762	\$868	\$5.52	
1,021	22	1,001	2,377	1,202	7.72	
1,100	26	1,271	2,543	1,243	8.10	
1,261	29	1,423	2,697	1,675	9.09	
1,440	36	1,701	3,497	2,210	10.21	

Value and Cost of Production			Profitability			
Milk Receipts Per Cow	Operating Cost Producing Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation
(12)	(12)	(12)	Total	Per Cow	(4)	(8)
\$5,971	\$12.65	\$25.49	\$96,732	\$1,823	\$39,378	\$112,385
5,525	16.02	28.04	75,087	1,631	17,983	73,514
4,398	17.70	33.22	53,080	1,112	8,569	34,862
3,900	19.06	37.20	23,701	613	-18,402	25,318
2,813	20.85	42.98	3,917	109	-32,524	6,925

\*Page number of the participant's DFBS report where the factor is located.

**FARM BUSINESS CHART FOR LARGE TIESTALL/STANCHION DAIRY FARMS**  
13 Tiestall/Stanchion Dairy Farms with 60 or More Cows, New York, 2014

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(14)*	(12)	(12)	(12)	(11)	(11)	(14)	(14)
4.42	131	3,180,856	26,787	5.2	22	45	941,743
4.04	108	2,173,379	23,550	3.3	20	35	744,544
3.28	86	1,755,770	20,925	2.7	18	32	532,783
2.75	69	1,204,158	16,846	1.9	13	24	492,792
1.86	65	875,631	11,441	1.2	3	20	293,084

Cost Control						
Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk	
(12)	(12)	(14)	(14)	(12)	(12)	
\$521	16%	\$678	\$1,590	\$787	\$6.44	
1,030	23	885	1,979	1,489	8.40	
1,443	26	1,088	2,324	1,955	9.22	
1,730	30	1,358	2,427	2,309	9.86	
2,023	34	1,636	2,914	2,677	11.56	

Value and Cost of Production			Profitability			
Milk Receipts Per Cow	Operating Cost Producing Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation
(12)	(12)	(12)	Total (4)	Per Cow (12)	(4)	(8)
\$6,957	\$16.80	\$23.43	\$201,097	\$1,716	\$99,412	\$175,695
5,988	17.53	24.90	136,130	1,542	63,430	126,788
5,414	18.41	26.50	114,572	1,403	38,541	91,564
4,366	19.46	31.19	68,708	888	12,228	40,080
2,845	22.94	39.08	10,937	156	-63,562	5,668

\*Page number of the participant's DFBS report where the factor is located.

**FARM BUSINESS CHART FOR SMALL FREESTALL DAIRY FARMS**

20 Freestall Barn Dairy Farms with 200 Cows or less, New York, 2014

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(14)*	(12)	(12)	(12)	(11)	(11)	(14)	(14)
7.71	178	4,664,492	27,142	4.6	23	47	1,140,257
5.40	153	3,366,879	25,460	3.3	21	39	868,195
4.42	140	3,145,965	23,470	3.1	20	37	744,071
4.10	134	2,888,870	22,617	2.9	20	32	706,312
3.74	120	2,724,527	22,169	2.6	19	31	663,148
3.63	117	2,593,920	21,243	2.5	18	30	626,924
3.39	113	2,279,830	20,193	2.3	15	29	568,428
2.63	107	2,146,995	18,881	1.7	10	27	536,357
2.35	73	1,183,296	16,400	1.3	0	26	465,118
2.09	58	996,943	14,939	0.0	0	21	424,798

**Cost Control**

Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
(12)	(12)	(14)	(14)	(12)	(12)
\$764	19%	\$503	\$1,606	\$1,074	\$6.48
1,102	23	730	1,634	1,394	7.33
1,381	26	839	1,678	1,774	8.12
1,497	27	885	1,738	1,979	8.58
1,529	29	940	1,853	2,094	9.61
1,642	29	1,016	1,961	2,227	10.19
1,763	30	1,037	2,012	2,359	10.62
1,937	32	1,120	2,315	2,511	11.18
2,047	34	1,353	2,642	2,599	11.75
2,106	36	1,637	2,873	2,847	14.75

**Value and Cost of Production****Profitability**

Milk Receipts Per Cow	Operating Cost Producing Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation
			Total	Per Cow		
(12)	(12)	(12)	(4)	(12)	(4)	(8)
\$6,943	\$13.69	\$21.24	\$301,499	\$2,232	\$167,393	\$241,808
6,458	15.00	22.31	242,982	1,738	136,539	201,615
6,295	16.09	22.73	209,101	1,655	102,474	153,895
6,021	16.64	23.10	195,417	1,618	98,186	131,023
5,883	17.14	23.36	183,166	1,546	89,966	117,768
5,532	18.42	23.70	160,851	1,401	85,001	108,905
5,307	19.00	24.39	135,858	1,328	70,324	81,042
4,806	19.87	26.08	119,871	1,260	46,307	63,317
4,271	20.31	28.60	88,397	805	22,662	25,127
3,677	21.91	30.70	34,299	371	-11,318	-100,609

\*Page number of the participant's DFBS report where the factor is located.

**FARM BUSINESS CHART FOR MEDIUM FREESTALL DAIRY FARMS**  
26 Freestall Barn Dairy Farms with 201-500 Cows, New York, 2014

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(14)*	(12)	(12)	(12)	(11)	(11)	(14)	(14)
14.51	490	12,811,128	28,034	5.4	25	62	1,601,543
13.05	449	11,838,170	27,305	5.0	24	54	1,280,734
11.39	420	10,923,200	26,851	4.6	23	47	1,173,592
9.63	406	10,634,193	26,596	4.4	22	45	1,137,750
9.32	389	10,074,994	26,072	4.0	20	43	1,073,824
8.30	365	8,978,834	25,587	3.6	20	40	1,029,781
7.45	312	8,039,669	25,162	3.3	19	39	957,395
6.67	271	7,005,816	24,038	3.1	18	35	858,115
6.13	236	5,427,747	23,500	2.9	16	33	783,788
4.65	210	4,513,011	20,021	2.1	9	29	732,535

Cost Control					
Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
(12)	(12)	(14)	(14)	(12)	(12)
\$1,332	21%	\$611	\$1,228	\$1,711	\$6.88
1,588	25	870	1,668	2,008	8.10
1,678	27	958	1,874	2,090	8.40
1,797	27	1,063	1,991	2,220	8.63
1,882	29	1,123	2,050	2,275	9.13
1,946	30	1,203	2,130	2,370	9.49
2,001	31	1,292	2,238	2,484	10.13
2,031	31	1,459	2,344	2,684	10.53
2,219	32	1,507	2,471	2,821	10.92
2,365	40	1,822	2,970	2,938	12.68

Value and Cost of Production			Profitability			
Milk Receipts Per Cow	Operating Cost Producing Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation
(12)	(12)	(12)	Total	Per Cow	(4)	(8)
\$7,269	\$13.46	\$19.18	\$1,077,418	\$2,565	\$598,994	\$965,452
7,157	15.45	19.94	938,643	2,094	478,568	862,851
7,086	16.01	20.86	856,043	2,029	372,365	785,545
6,792	16.64	21.66	725,223	1,824	342,849	754,253
6,614	17.06	22.23	679,147	1,739	274,744	675,510
6,446	17.64	23.09	515,178	1,687	233,561	494,109
6,261	18.44	23.60	464,731	1,598	183,246	380,108
6,140	19.51	24.19	376,632	1,493	142,118	326,630
5,915	20.71	26.06	337,898	1,270	106,123	243,292
5,420	22.51	26.64	143,779	524	-13,229	94,594

\*Page number of the participant's DFBS report where the factor is located.

**FARM BUSINESS CHART FOR LARGE FREESTALL DAIRY FARMS**  
91 Freestall Barn Dairy Farms with 500 or More Cows, New York, 2014

Size of Business			Rates of Production			Labor Efficiency	
Worker Equiv- Alent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(14)*	(12)	(12)	(12)	(11)	(11)	(14)	(14)
50.89	2,462	65,820,428	29,086	5.4	26	62	1,650,512
33.93	1,632	41,034,758	27,726	4.5	22	54	1,415,049
29.32	1,327	34,971,517	27,207	4.1	21	51	1,330,582
26.42	1,151	30,715,941	26,697	3.8	20	48	1,251,025
23.33	1,053	27,271,097	26,331	3.6	20	47	1,190,232
20.68	945	24,804,103	25,732	3.4	19	45	1,130,465
18.95	813	21,046,630	25,337	3.2	18	42	1,067,506
16.84	710	18,165,643	24,882	2.9	17	39	1,024,330
14.85	647	15,948,215	23,751	2.6	16	38	971,155
11.81	556	13,598,524	22,040	1.6	12	34	845,970
Cost Control							
Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk		
(12)	(12)	(14)	(14)	(12)	(12)		
\$1,340	22%	\$659	\$1,332	\$1,719	\$7.23		
1,668	25	827	1,551	2,075	8.17		
1,744	27	865	1,681	2,174	8.57		
1,834	28	924	1,790	2,282	8.84		
1,901	29	979	1,849	2,372	9.07		
1,957	29	1,031	1,913	2,430	9.26		
2,022	30	1,092	1,960	2,479	9.54		
2,088	31	1,158	2,031	2,558	9.88		
2,145	33	1,211	2,129	2,676	10.22		
2,435	36	1,316	2,328	2,982	11.02		
Value and Cost of Production				Profitability			
Milk Receipts Per Cow	Operating Cost Producing Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation	
(12)	(12)	(12)	Total	Per Cow	(4)	(12)	(8)
\$7,530	\$13.85	\$18.27	\$4,958,267	\$2,717	\$1,858,419	\$4,575,100	
7,153	15.47	19.49	2,880,097	2,205	1,171,285	2,915,088	
6,937	16.00	20.16	2,391,634	2,026	962,426	2,388,399	
6,763	16.35	20.54	2,085,785	1,913	791,334	1,997,375	
6,663	16.84	21.05	1,676,095	1,794	622,406	1,664,669	
6,503	17.62	21.60	1,463,044	1,623	509,779	1,405,039	
6,399	18.46	21.98	1,313,281	1,426	403,618	1,208,979	
6,238	19.04	22.29	1,055,258	1,274	286,779	913,830	
6,023	19.47	23.24	860,217	1,093	237,762	656,784	
5,627	20.97	25.21	547,366	721	109,379	279,930	

\*Page number of the participant's DFBS report where the factor is located.



Worksheet for Setting Goals (Continued)

II. Goals What	How	When	Who is Responsible
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Summarize Your Business Performance

The Farm Business and Financial Analysis Charts on pages 26 and 30-32 can be used to help identify strengths and weaknesses of your farm business. Identify three major strengths and three areas of your farm business that need improvement.

Strengths: \_\_\_\_\_  
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Needs improvement: \_\_\_\_\_  
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## GLOSSARY AND LOCATION OF COMMON TERMS

**Accounts Payable** - Open accounts or bills owed to feed and supply firms, cattle dealers, veterinarians and other providers of farm services and supplies.

**Accounts Receivable** - Outstanding receipts from items sold or sales proceeds not yet received, such as the payment for December milk sales received in January.

**Accrual Expenses** - (defined on page 5)

**Accrual Receipts** - (defined on page 6)

**Annual Cash Flow Statement** - (defined on page 13)

**Appreciation** - (defined on page 7)

**Asset Turnover Ratio** - The ratio of total farm income to total farm assets, calculated by dividing total accrual operating receipts plus appreciation by average total farm assets.

**Balance Sheet** - A "snapshot" of the business financial position at a given point in time, usually December 31. The balance sheet equates the value of assets to liabilities plus net worth.

**Capital Efficiency** - The amount of capital invested per production unit. Relatively high investments per worker with low to moderate investments per cow imply efficient use of capital.

**Cash From Nonfarm Capital Used in the Business** - Transfers of money from nonfarm savings or investments to the farm business where it is used to pay operating expenses, make debt payments and/or capital purchases.

**Cash Flow Coverage Ratio** - (defined on page 15)

**Cash Paid** - (defined on page 4)

**Cash Receipts** - (defined on page 6)

**Change in Accounts Payable** - (defined on page 5)

**Change in Accounts Receivable** - (defined on page 6)

**Change in Inventory** - (defined on page 4)

**Culling Rate** - Culling rate is calculated by dividing the number of animals that left the herd for culling purposes and that died, by the average number of milking and dry cows for the year.

**Current Portion** - (defined on page 9)

**Current Ratio** - Measures the extent to which current farm assets, if liquidated, would cover current farm liabilities. Calculated as current farm assets at end year divided by current farm liabilities at end year.

**Dairy (farm)** - A farm business where dairy farming is the primary enterprise, operating and managing this farm is a full-time occupation for one or more people and cropland is owned.

**Dairy Cash-Crop (farm)** - Operating and managing this farm is the full-time occupation of one or more people, cropland is owned but crop sales exceed 10 percent of accrual milk receipts.

**Death Rate** - The number of animals that died divided by the average number of milking and dry cows for the year.

**Debt Coverage Ratio** - (defined on page 15)

**Debt Per Cow** - Total end-of-year debt divided by end-of-year number of cows.

**Debt to Asset Ratios** - (defined on page 11)

**Depreciation Expense Ratio** – Machinery and building depreciation divided by total accrual receipts.

**Dry Matter** - The amount or proportion of dry material that remains after all water is removed. Commonly used to measure dry matter percent and tons of dry matter in feed.

**Equity Capital** - The farm operator/manager's owned capital or farm net worth.

**Expansion Livestock** - Purchased dairy cattle and other livestock that cause an increase in herd size from the beginning to the end of the year.

**Farm Debt Payments as Percent of Milk Sales** - Amount of milk income committed to debt repayment, calculated by dividing planned debt payments by total milk receipts. A reliable measure of repayment ability, see page 15.

**Farm Debt Payments Per Cow** - Planned or scheduled debt payments per cow represent the repayment plan scheduled at the beginning of the year divided by the average number of cows for the year. This measure of repayment ability is used in the Financial Analysis Chart.

**Financial Lease** - A long-term non-cancellable contract giving the lessee use of an asset in exchange for a series of lease payments. The term of a financial lease usually covers a major portion of the economic life of the asset. The lease is a substitute for purchase. The lessor retains ownership of the asset.

**Hired Labor Expense as % of Milk Sales** - The percentage of the gross milk receipts that is used for labor expense. Divide accrual hired labor expense by accrual milk sales.

**Hired Labor Expense per Hired Worker Equivalent** - The total cost to the farm per hired worker equivalent. Divide accrual hired labor expense by number of hired plus family paid worker equivalents.

**Income Statement** - A complete and accurate account of farm business receipts and expenses used to measure profitability over a period of time such as one year or one month.

**Interest Expense Ratio** – Accrual interest expense divided by total accrual receipts.

**Labor and Management Income** - (defined on page 8)

**Labor and Management Income Per Operator** - The return to the owner/manager's labor and management per full-time operator.

**Labor Efficiency** - Production capacity and output per worker.

**Leverage Ratio** - (defined on page 11)

**Liquidity** - Ability of business to generate cash to make debt payments or to convert assets to cash.

**Net Farm Income** - (defined on page 7)

**Net Farm Income from Operations Ratio** - (defined on page 9)

**Net Milk Receipts** – Accrual milk receipts less milk marketing expense.

**Net Worth** - The value of assets less liabilities equal net worth. It is the equity the owner has in owned assets.

**Operating Costs of Producing Milk** - (defined on page 21)

**Operating Expense Ratio** – Total accrual expenses less interest and machinery and building depreciation, divided by total accrual receipts.

**Opportunity Costs** - The cost or charge made for using a resource based on its value in its most likely alternative use. The opportunity cost of a farmer's labor and management is the value he/she would receive if employed in his/her most qualified alternative position.

**Other Livestock Expenses** - All other dairy herd and livestock expenses not included in more specific categories. Other livestock expenses include; bST, DHIC, registration fees and transfers.

**Part-Time Dairy (farm)** - Dairy farming is the primary enterprise, cropland is owned but operating and managing this farm is not a full-time occupation for one or more people.

**Personal Withdrawals and Family Expenditures Including Nonfarm Debt Payments** - All the money removed from the farm business for personal or nonfarm use including family living expenses, health and life insurance, income taxes, nonfarm debt payments, and investments.

**Profitability** - The return or net income the owner/manager receives for using one or more of his or her resources in the farm business. True "economic profit" is what remains after deducting all the costs including the opportunity costs of the owner/manager's labor, management, and equity capital.

**Purchased Inputs Cost of Producing Milk** - (defined on page 21)

**Renter** - Farm business owner/operator owns no tillable land and commonly rents all other farm real estate.

**Repayment Analysis** - An evaluation of the business' ability to make planned debt payments.

**Replacement Livestock** - Dairy cattle and other livestock purchased to replace those that were culled or sold from the herd during the year.

**Return on Equity Capital** - (defined on page 9)

**Return on Total Capital** - (defined on page 9)

**Sell Rate** – The number of animals that were sold for culling purposes divided by the average number of milking and dry cows for the year.

**Solvency** - The extent or ability of assets to cover or pay liabilities. Debt/asset and leverage ratios are common measures of solvency.

**Total Costs of Producing Milk** - (defined on page 21)

**Whole Farm Method** - A procedure used to calculate costs of producing milk on dairy farms without using enterprise cost accounts. All non-milk receipts are assigned a cost equal to their sale value and deducted from total farm expenses to determine the costs of producing milk.

**Working Capital** – A theoretical measure of the amount of funds available to purchase inputs and inventory items after the sale of current farm assets and payment of all current farm liabilities. Calculated as current farm assets at end year less current farm liabilities at end year.

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