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DAIRY FARM BUSINESS SUMMARY

NEW YORK SMALL HERD FARMS, 140 COWS OR FEWER, 2014



*You can't manage what you can't measure.
But if you measure it, you can improve it!*

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2014 DAIRY FARM BUSINESS SUMMARY
Small Herd Dairy Farms
140 Cows or Fewer
Table of Contents

	<u>Page</u>
INTRODUCTION	1
Program Objectives	1
Format Features	1
PROGRESS OF THE FARM BUSINESS	2
SUMMARY AND ANALYSIS OF THE FARM BUSINESS	4
Business Characteristics	4
Income Statement	4
Profitability Analysis	6
Farm and Family Financial Status	9
Statement of Owner Equity	12
Cash Flow Statement	13
Repayment Analysis	15
Cropping Analysis	18
Dairy Analysis	20
Capital and Labor Efficiency Analysis	22
COMPARATIVE ANALYSIS OF THE FARM BUSINESS	23
Progress of the Farm Business	23
Regional Farm Business Chart	26
Supplementary Information	27
New York State Farm Business Chart	30
Financial Analysis Chart	32
Comparisons by Type of Barn and Herd Size	33
Herd Size Comparisons	33
IDENTIFY AND SET GOALS	40
GLOSSARY AND LOCATION OF COMMON TERMS	42
INDEX	45

2014 DAIRY FARM BUSINESS SUMMARY SMALL HERD DAIRY FARMS*

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 2014 with herds of 140 Cows or Fewer.

Small farms are facing increasing management challenges in their efforts to control costs and remain profitable. This publication reports the average performance and characteristics of small farms and the average of the Top 50 Percent of those small farms with the highest rate of return on assets without appreciation. Thus, not only can the average performance of small farms be used as a benchmark, but the performance of the most profitable small 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 2014 DFBS individual farm report received by participating dairy farmers. The analysis tables have a column that compares the average to the top 50% 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 small farms. 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.

*The small herd summary is comprised of farms with 140 or fewer cows. Many counties had farms that met this criteria in 2014. This report was written by Wayne A. Knoblauch, Professor, Farm Management; Richard Kimmich, Extension Support Specialist, Dairy Farm Business Summary and Analysis Program; and Jason Karszes, Senior Extension Associate, Pro-Dairy. Cathryn Dymond was in charge of data and publication preparation.

PROGRESS OF THE FARM BUSINESS

2014 continued the trend of improving dairy profitability with the historically high milk prices more than offsetting the continued increase in input costs, making for larger margins.

The same 33 farms participated in both 2013 and 2014 for this report. Average farm size stayed at 77 cows with a heifer inventory increase of 6.5% or 4 animals. Tillable acres rose 2.9% or 8 acres. Hay DM ton/acres rose 4.8% reflecting favorable weather conditions; corn silage/acre also saw an increase at 12.4% to 18.1 tons/acres in 2014. Milk sold per cow decreased -0.4% going from 19,982 to 19,909.

Worker equivalents rose 3.7%, which caused cows per worker to drop to 28 from 29 the previous year. Milk sold/worker dropped by 2.3% to 560,302 lbs. Hired labor cost per hundredweight rose 8.6% percent from \$1.52 to \$1.65 along with hired labor cost/worker rising 7.3% to \$27,025. Even with these increases, hired labor as a percent of milk sales dropped 9.7%, reflecting the high milk prices realized in 2014.

Grain and concentrate purchased as a percent of milk sales decreased 13.3% from 30% to 26%. Grain and concentrate per hundredweight of milk increased from \$6.32 per hundredweight to \$6.69 per hundredweight or 5.9%. Dairy feed and crop expense/cwt increased 6.5% in response to increased purchased feed expenses along with increase cost of crop inputs. Total farm operating expenses per hundredweight increased 6.0% from \$19.22 to \$20.38. Interest costs dropped by 1.9%. Milk marketing costs increased by 1.8% a portion of which can be attributed to a full year of CWT Program being at 4 cents a cwt.. The operating cost of producing milk per hundredweight rose 8.1% from \$15.72 to \$17.00 as costs of feed, supplies, machinery repairs, breeding and vet expenses, bedding and other livestock expenses continue to go up.

Farm capital per cow increased 6.1 percent to \$14,531 and machinery and equipment per cow was up 5.9% with new investments for replacement of equipment, small increases in land values and cattle values, and retained earnings. While the average investment per cow did increase, the large increase in revenue from higher milk and beef prices resulted in an increase of 8.1% in the asset turnover ratio.

Gross sales per hundredweight rose from \$21.27 to \$25.45 per hundredweight, or 19.6%. Gross milk sales per cow rose 19.2% from \$4,251 per cow to \$5,066 due to higher milk prices and fairly stable milk per cow. At the same time, beef prices rose continually and that helped generate more cash flow. Dairy cattle sales per cow went from \$323 to \$341, an increase of 5.6%. Calf sales per cow increased a whopping 256% from \$25 to \$89. A decrease in government receipts from \$0.60 per hundredweight to \$0.03 per hundredweight did not have much affect on income due to those large increases in cow and calf prices.

Net farm income without appreciation rose from \$59,875 to \$101,464, a 69.5% increase. Net farm income with appreciation also saw a large rise of 57.5% to \$110,284. Labor and management income per operator jumped from \$10,439 to \$37,056 or 255%. Another year with a positive rate of return on equity of 5.8% (2.0% in 2013) marks the fourth year of positive returns (although it is noted that 2012, while positive, was a very low return rate). The rate of return on all capital with appreciation was 5.3%. Farm net worth continues to rise (8.9%) due to an increase in large part due to retained earnings, with contribution from increases in land values, livestock value and other farm investments. Farm debt per cow saw a small drop of 0.1% from \$2,995 to \$2,992 as farmers were able to make capital investments out of cash flow and avoid borrowing for all of their capital needs.

2014 was a prosperous year after the recovery year in 2013. Positive returns have been the trend in recent years with the last year of negative returns on small herd farms in 2010. Higher milk prices and decent feed prices made for profitable margins, despite the increased cost of inputs as well as labor.

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 33 Small Herd Dairy Farms, 2013 & 2014

Selected Factors	Average of 33 Farms		Percent Change
	2013	2014	
<u>Size of Business</u>			
Average number of cows	77	77	0.0
Average number of heifers	62	66	6.5
Milk sold, pounds	1,542,253	1,540,830	-0.1
Worker equivalent	2.7	2.8	3.7
Total tillable acres	273	281	2.9
<u>Rates of Production</u>			
Milk sold per cow, pounds	19,982	19,909	-0.4
Hay DM per acre, tons	2.1	2.2	4.8
Corn silage per acre, tons	16.1	18.1	12.4
<u>Labor Efficiency & Costs</u>			
Cows per worker	29	28	-3.5
Milk sold per worker, pounds	573,328	560,302	-2.3
Hired labor cost per hundredweight	\$1.52	\$1.65	8.6
Hired labor cost per worker	\$25,180	\$27,025	7.3
Hired labor cost as % of milk sales	7.2%	6.5%	-9.7
<u>Cost Control</u>			
Grain & concentrate purchased as % of milk sales	30%	26%	-13.3
Grain & concentrate per hundredweight milk	\$6.32	\$6.69	5.9
Dairy feed & crop expense per cwt. milk	\$8.27	\$8.81	6.5
Labor & machinery costs per cow	\$1,943	\$2,158	11.1
Total farm operating expenses per cwt. sold	\$19.22	\$20.38	6.0
Interest costs per hundredweight milk	\$0.52	\$0.51	-1.9
Milk marketing costs per cwt. milk sold	\$1.10	\$1.12	1.8
Operating cost of producing cwt. of milk	\$15.72	\$17.00	8.1
<u>Capital Efficiency</u> (average for the year)			
Farm capital per cow*	\$13,694	\$14,531	6.1
Machinery & equipment per cow	\$2,948	\$3,123	5.9
Asset turnover ratio*	0.37	0.40	8.1
<u>Income Generation</u>			
Gross milk sales per cow	\$4,251	\$5,066	19.2
Gross milk sales per hundredweight	\$21.27	\$25.45	19.6
Net milk sales per hundredweight	\$20.17	\$24.32	20.6
Dairy cattle sales per cow	\$323	\$341	5.6
Dairy calf sales per cow	\$25	\$89	256.0
Government receipts per hundredweight	\$0.60	\$0.03	-95.0
<u>Profitability</u>			
Net farm income without appreciation	\$59,875	\$101,464	69.5
Net farm income with appreciation	\$70,045	\$110,284	57.5
Labor & management income per oper./manager	\$10,439	\$37,056	255.0
Rate of return on equity capital with appreciation	2.0%	5.8%	190.0
Rate of return on all capital with appreciation	2.4%	5.3%	120.8
<u>Financial Summary</u>			
Farm net worth, end year	\$817,408	\$890,483	8.9
Debt to asset ratio	0.22	0.21	-4.6
Farm debt per cow	\$2,995	\$2,992	-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

44 Small Herd Dairy Farms, 2014

Type of Farm	Number	Milking System	Number
Dairy	44	Bucket & carry	0
Part-time dairy	0	Dumping station	0
Dairy cash-crop	0	Pipeline	30
Certified organic milk producer	0	Herringbone parlor	7
Rotational grazing farms	5	Other parlor	7
Type of Ownership	Number	Production Records	Number
Owner	38	Testing service	33
Renter	6	On-farm system	3
		Other	0
		None	8
Type of Business	Number	Business Record System	Number
Sole Proprietorship	35	Account Book	14
Partnership	5	Accounting Service	6
LLC	4	On-farm computer	23
		Other	1
Type of Barn	Number	Breed of Herd	Percent
Stanchion or Tie-Stall	29	Holstein	87
Freestall	14	Jersey	6
Combination	1	Other	7
Milking Frequency	Number		
2 times per day	40		
3 times per day	3		
Other	1		

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 2014.

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

44 Small Herd Dairy Farms, 2014

Expense Item	Cash Paid	-	Change in Inventory or Prepaid Expense	+	Change in Accounts Payable	=	Accrual Expenses
<u>Hired Labor</u>	\$ 27,046		\$ 0	<<	\$ 87		\$ 27,133
<u>Feed</u>							
Dairy grain & concentrate	117,673		4,396		-1,853		111,424
Dairy roughage	10,717		703		-64		9,949
Nondairy	166		0		0		166
Professional nutritional services	1		0	<<	0		1
<u>Machinery</u>							
Machinery hire, rent & lease	7,887		0	<<	-699		7,188
Machinery repairs & farm vehicle exp.	26,432		213		-329		25,890
Fuel, oil & grease	19,320		98		-29		19,194
<u>Livestock</u>							
Replacement livestock	2,898		0	<<	-45		2,852
Breeding	5,679		339		85		5,426
Veterinary & medicine	9,050		402		-8		8,640
Milk marketing	18,552		0	<<	-85		18,467
Bedding	4,936		29		0		4,907
Milking supplies	9,796		77		60		9,779
Cattle lease & rent	110		0	<<	0		110
Custom boarding	550		0	<<	0		550
bST	984		41		24		967
Livestock professional fees	2,029		197	<<	0		1,832
Other livestock expense	5,355		77		-195		5,083
<u>Crops</u>							
Fertilizer & lime	14,973		1,075		-335		13,563
Seeds & plants	11,506		2,695		-174		8,637
Spray, other crop expense	5,449		407		0		5,042
Crop professional fees	109		0	<<	0		109
<u>Real Estate</u>							
Land, building & fence repair	6,380		33		286		6,634
Taxes	8,569		0	<<	-352		8,217
Rent & lease	4,480		0	<<	91		4,571
<u>Other</u>							
Insurance	6,969		325	<<	0		6,644
Utilities (farm share)	11,690		0	<<	-9		11,681
Interest paid	8,391		0	<<	62		8,454
Other professional fees	1,663		0	<<	58		1,721
Miscellaneous	2,044		-18		0		2,062
Total Operating	\$351,407		\$11,088		-\$3,426		\$336,893
Expansion livestock	4,458		0	<<	0		4,458
Extraordinary expense	724		0	<<	0		724
Machinery depreciation							22,826
Building depreciation							3,616
TOTAL ACCRUAL EXPENSES							\$368,517

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 2014 but not paid for. A decrease is subtracted because it represents payment for resources used before 2014.

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

44 Small Herd Dairy Farms, 2014

Receipt Item	Cash Receipts	+	Change in Inventory	+	Change in Accounts Receivable	=	Accrual Receipts
Milk sales	\$ 143,150				\$ 1,532		\$ 414,682
Dairy cattle	21,639		\$ 11,438		\$ 114		33,190
Dairy calves	4,735		1,403		0		6,138
Other livestock	483		116		9		608
Crops	4,762		5,995		400		11,158
Government receipts	1,314		0 *		-801		513
Custom machine work	1,534				216		1,750
Gas tax refund	52				0		52
Other	<u>7,658</u>				<u>-5</u>		7,653
Less nonfarm noncash capital**		(-)	<u>0 **</u>			(-)	<u>0</u>
Total Receipts	\$ 455,327		\$ 18,952		\$ 1,465		\$ 475,745

*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 2014 for the 2015 crop year in excess of funds earned for 2014. Likewise, a decrease is added to cash government receipts because it represents funds earned for 2014 but received in 2013.

Changes in accounts receivable are calculated by subtracting beginning year balances from end year balances. Payments in January 2015 for milk produced in December 2014 compared to January 2014 payments for milk produced in 2013 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.

* 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.

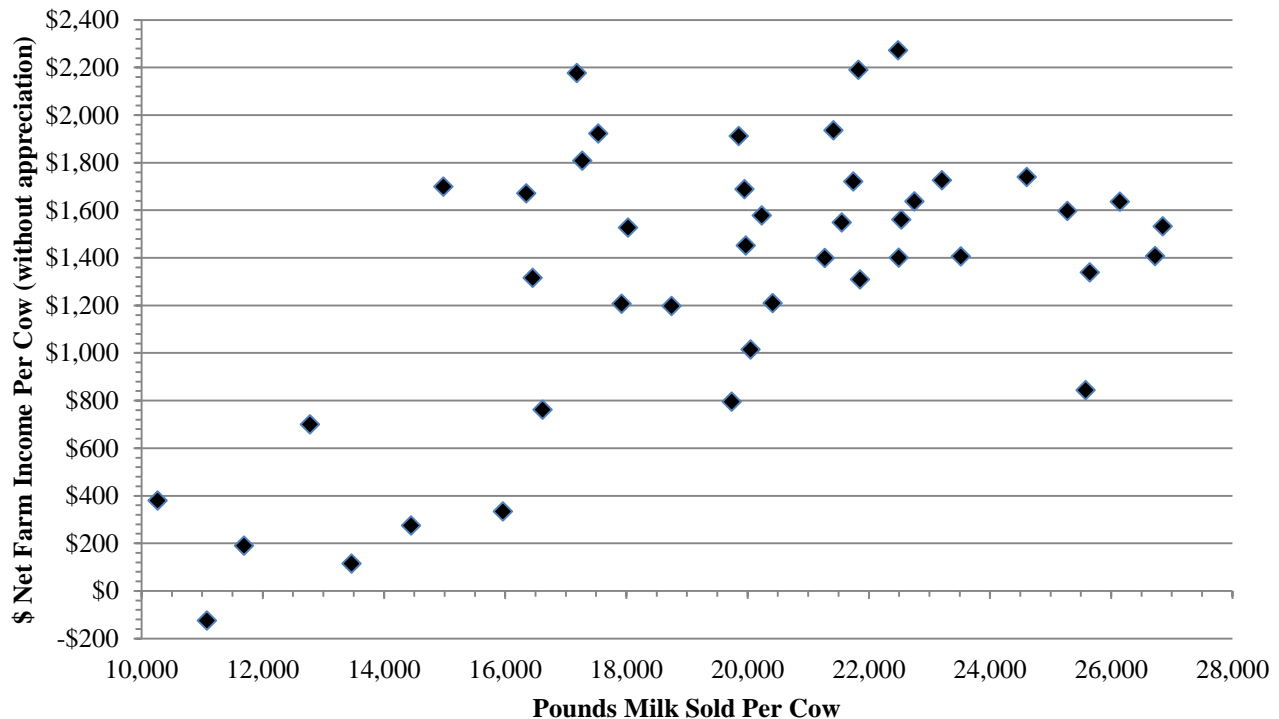
NET FARM INCOME
44 Small Herd Dairy Farms, 2014

Item	Average 44 Farms		Top 50% Farms*	
	Total	Per Cow	Total	Per Cow
Total accrual receipts	\$ 475,745		\$ 590,305	
Appreciation: Livestock	1,940		914	
Machinery	6,679		8,909	
Real Estate	-133		-4,354	
Other Stock & Certificates	668		-137	
Total Including Appreciation	\$ 484,899		\$ 595,636	
Total accrual expenses	- 368,517		- 441,919	
Net Farm Income (with appreciation)	\$ 116,382	\$ 1,445	\$ 153,718	\$1,674
Net Farm Income (without appreciation)	\$ 107,227	\$ 1,331	\$ 148,386	\$1,616

*Top 50% of small herd 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
44 Small Herd Dairy Farms, 2014



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.

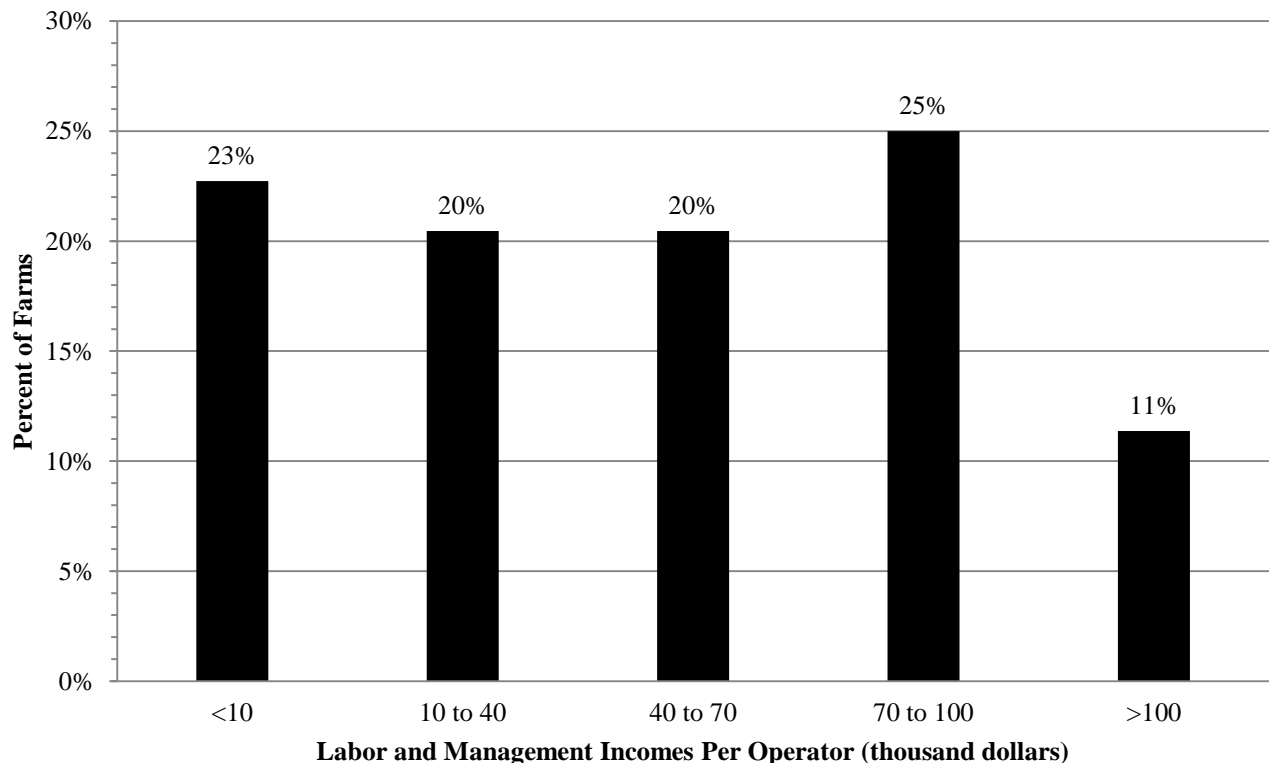
LABOR AND MANAGEMENT INCOME

44 Small Herd Dairy Farms, 2014

Item	Average 44 Farms	Top 50% Farms
Net farm income without appreciation	\$ 107,227	\$ 148,386
Family labor unpaid @ \$2,600 per month	- 11,960	- 10,885
Interest on \$830,676 average equity capital @ 5% real rate ((\$823,276 average equity capital for top 50% farms)	- <u>41,534</u>	- <u>41,164</u>
Labor & Management Income per farm (1.27 operators per farm) (1.15 operators per farm for top 50% farms)	\$ 53,734	\$ 96,338
Labor & Management Income per Operator/Manager	\$ 42,310	\$ 83,772

Labor and management income per operator averaged \$42,310 on these 44 farms in 2014. The range in labor and management income per operator was from less than \$-98,000 to more than \$188,000. Returns to labor and management were less than \$40,000 on 43 percent of the farms. Labor and management incomes per operator were between \$40,000 and \$100,000 on 45 percent of the farms while 11 percent had labor and management incomes per operator greater than \$100,000.

DISTRIBUTION OF LABOR & MANAGEMENT INCOMES PER OPERATOR 44 Small Herd Dairy Farms, 2014



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
44 Small Herd Dairy Farms, 2014

Item	Average 44 Farms	Top 50% Farms
Net farm income with appreciation	\$ 116,382	\$ 153,718
Family labor unpaid @ \$2,600 per month	- 11,960	- 10,885
Value of operators' labor & management	<u>- 50,821</u>	<u>- 46,136</u>
Return on equity capital with appreciation	\$ 53,601	\$ 96,697
Interest paid	<u>+ 8,454</u>	<u>+ 8,696</u>
Return on total capital with appreciation	\$ 62,055	\$ 105,392
Return on equity capital without appreciation	\$ 44,447	\$ 91,365
Return on total capital without appreciation	\$ 52,900	\$ 100,061
Rate of return on average equity capital:		
with appreciation	6.5%	11.8%
without appreciation	5.4%	11.1%
Rate of return on average total capital:		
with appreciation	5.8%	9.8%
without appreciation	4.9%	9.3%
Net farm income from operations ratio	0.23	0.25

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 2014, lease payments were discounted by 7 percent to obtain their present value.

Advanced government receipts are included as current liabilities. Government payments received in 2014 that are for participation in the 2015 program are the end year balance and payments received in 2013 for participation in the 2014 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.

2014 FARM BUSINESS & NONFARM BALANCE SHEET

44 Small Herd Dairy Farms, 2014

Farm Assets			Farm Liabilities & Net Worth		
	Jan. 1	Dec. 31		Jan. 1	Dec. 31
<u>Current</u>			<u>Current</u>		
Farm cash, checking & savings	\$ 11,952	\$ 13,595	Accounts payable	\$ 12,567	\$ 9,141
Accounts receivable	29,311	30,777	Operating debt	7,796	9,712
Prepaid expenses	43	564	Short Term	2,448	5,306
Feed & supplies	90,838	107,400	Advanced govt. receipts	0	0
			Current Portion:		
			Intermediate	20,168	23,569
			Long Term	<u>4,513</u>	<u>6,737</u>
Total Current	\$ 132,144	\$ 152,336	Total Current	\$ 47,492	\$ 54,466
<u>Intermediate</u>			<u>Intermediate</u>		
Dairy cows:			Structured debt		
owned	\$ 115,632	\$ 124,453	1-10 years	\$ 117,402	\$ 84,296
leased	0	0	Financial lease		
Heifers	62,044	67,992	(cattle/machinery)	0	0
Bulls & other livestock	3,670	3,797	Farm Credit stock	<u>398</u>	<u>420</u>
Mach. & equip. owned	223,117	262,480	Total Intermediate	\$ 117,800	\$ 84,717
Mach. & equip. leased	0	0			
Farm Credit stock	398	420			
Other stock/certificate	<u>19,822</u>	<u>21,048</u>			
Total Intermediate	\$ 424,683	\$ 480,191			
<u>Long Term</u>			<u>Long Term</u>		
Land & buildings:			Structured debt		
owned	\$ 461,472	\$ 499,733	>10 years	\$ 90,740	\$ 122,904
leased	<u>0</u>	<u>0</u>	Financial lease		
Total Long Term	\$ 461,472	\$ 499,733	(structures)	<u>0</u>	<u>0</u>
			Total Long Term	\$ 90,740	\$ 122,904
Total Farm Assets	\$1,018,299	\$1,132,260	Total Farm Liabilities	\$ 256,032	\$ 262,087
			FARM NET WORTH	\$ 762,267	\$ 870,172

Nonfarm Assets, Liabilities & Net Worth (Average of 19 farms reporting)

Assets			Liabilities & Net Worth		
	Jan. 1	Dec. 31		Jan. 1	Dec. 31
Personal cash, checking & savings	\$ 12,848	\$ 28,632	Nonfarm Liabilities	\$ 4,858	\$ 2,796
Cash value life insurance	15,310	15,791			
Nonfarm real estate	10,053	6,632			
Auto (personal share)	7,932	9,184			
Stocks & bonds	56,074	59,369			
Household furnishings	7,558	7,558			
All other nonfarm assets	<u>1,895</u>	<u>1,895</u>			
Total Nonfarm Assets	\$111,669	\$129,061	NONFARM NET WORTH	\$106,810	\$126,265

Farm & Nonfarm Assets, Liabilities, and Net Worth*			Jan. 1	Dec. 31
Total Assets			\$ 1,129,968	\$ 1,261,321
Total Liabilities			<u>260,890</u>	<u>264,883</u>
TOTAL FARM & NONFARM NET WORTH			\$ 869,078	\$ 996,438

*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
44 Small Herd Dairy Farms, 2014

Item	Average 44 Farms		Top 50% Farm	
<u>Financial Ratios - Farm:</u>				
Percent equity		77%		76%
Debt/asset ratio: total		0.23		0.24
long-term		0.25		0.28
intermediate/current		0.22		0.21
Leverage ratio		0.30		0.31
Current ratio		2.80		2.79
Working capital	\$97,869	As % of total Expenses: 27%	\$116,077	26%
<u>Farm Debt Analysis:</u>				
Accounts payable as % of total debt		3%		2%
Long-term liabilities as a % of total debt		47%		45%
Current & intermediate liabilities as a % of total debt		53%		55%
Cost of term debt (weighted average)		3.2%		3.3%
<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	\$3,105	\$1,983	\$2,895	\$2,198
Long-term debt	1,456	930	1,312	996
Intermediate & long term	2,460	1,571	2,206	1,675
Intermediate & current debt	1,649	1,053	1,583	1,202

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
44 Small Herd Dairy Farms, 2014

Item	Average 44 Farms			
	Real Estate		Machinery & Equipment	
Value beginning of year	\$	461,472	\$	223,117
Purchases	\$	42,563*	\$	57,788
Gift & inheritance	+	5,682	+	9
Lost capital	-	6,236	-	2,287
Sales	-	0	-	22,826
Depreciation	-	3,616	-	22,826
Net investment	=	38,393	=	32,684
Appreciation	+	-133	+	6,679
Value end of year	\$	499,733	\$	262,480

*\$15,941 land and \$26,622 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)

44 Small Herd Dairy Farms, 2014

Item	Average 44 Farms	Top 50% Farms
Beginning of year farm net worth	\$791,179	\$769,451
Net farm income without appreciation	\$ 107,227	\$ 148,386
+Nonfarm cash income	+ 8,698	+ 10,311
-Personal withdrawals & family expenditures excluding nonfarm borrowings	<u>- 50,163</u>	<u>- 48,898</u>
RETAINED EARNINGS	+ \$ 65,763	+ \$ 109,799
Nonfarm noncash transfers to farm	\$ 5,691	\$ 18
+Cash used in business from nonfarm capital	+ 4,348	+ 4,313
-Note or mortgage from farm real estate sold (nonfarm)	<u>- 0</u>	<u>- 0</u>
CONTRIBUTED/WITHDRAWN CAPITAL	+ \$ 10,038	+ \$ 4,331
Appreciation	\$ 9,154	\$ 5,331
-Lost capital	<u>- 6,236</u>	<u>- 10,472</u>
CHANGE IN VALUATION EQUITY	+ \$ 2,918	+\$ -5,141
IMBALANCE/ERROR	<u>- \$ -274</u>	<u>- \$ 1,338</u>
End of year net worth*	= \$ 870,172	= \$ 877,102
<hr/>		
<u>Change in Net Worth</u>		
Without appreciation	\$69,839	\$102,320
With appreciation	\$78,994	\$107,651

*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
44 Small Herd Dairy Farms, 2014

Item	Average 44 Farms	
<u>Cash Flow from Operating Activities</u>		
Cash farm receipts	\$ 455,327	
- Cash farm expenses	351,407	
- Extraordinary expense	<u>724</u>	
= Net cash farm income		\$ 103,196
Personal withdrawals & family expenses including nonfarm debt payments	\$ 49,441	
- Nonfarm income	<u>8,698</u>	
- Net cash withdrawals from the farm		<u>\$ 40,742</u>
= Net Provided by Operating Activities		\$ 62,453
<u>Cash Flow From Investing Activities</u>		
Sale of assets: machinery	\$ 2,287	
+ real estate	0	
+ other stock & cert.	<u>202</u>	
= Total asset sales		\$ 2,490
Capital purchases: expansion livestock	\$ 4,458	
+ machinery	57,788	
+ real estate	42,563	
+ other stock & cert.	<u>760</u>	
- Total invested in farm assets		<u>\$ 105,569</u>
= Net Provided by Investment Activities		\$ -103,079
<u>Cash Flow From Financing Activities</u>		
Money borrowed (intermediate & long term)	\$ 68,903	
+ Money borrowed (short term)	3,167	
+ Increase in operating debt	1,916	
+ Cash from nonfarm capital used in business	4,348	
+ Money borrowed - nonfarm	<u>-722</u>	
= Cash inflow from financing		\$ 77,611
Principal payments (intermediate & long term)	\$ 35,307	
+ Principal payments (short term)	309	
+ Decrease in operating debt	<u>0</u>	
- Cash outflow for financing		<u>\$ 35,616</u>
= Net Provided by Financing Activities		\$ 41,995
<u>Cash Flow From Reserves</u>		
Beginning farm cash, checking & savings		\$ 11,952
- Ending farm cash, checking & savings		<u>13,595</u>
= Net Provided from Reserves		\$ -1,643
Imbalance (error)		<u>\$ -274</u>

ANNUAL CASH FLOW STATEMENT
Top 50% Small Herd Dairy Farms, 2014

Item	Top 50% Farms	
<u>Cash Flow from Operating Activities</u>		
Cash farm receipts	\$ 561,313	
- Cash farm expenses	431,610	
- Extraordinary expense	<u>800</u>	
= Net cash farm income		\$ 128,903
Personal withdrawals & family expenses including nonfarm debt payments	\$ 48,942	
- Nonfarm income	<u>10,311</u>	
- Net cash withdrawals from the farm		<u>\$ 38,631</u>
= Net Provided by Operating Activities		\$ 90,272
<u>Cash Flow From Investing Activities</u>		
Sale of assets: machinery	\$ 1,732	
+ real estate	0	
+ other stock & cert.	<u>403</u>	
= Total asset sales		\$ 2,135
Capital purchases: expansion livestock	\$ 817	
+ machinery	87,352	
+ real estate	42,814	
+ other stock & cert.	<u>1,287</u>	
- Total invested in farm assets		<u>\$ 132,270</u>
= Net Provided by Investment Activities		\$ -130,135
<u>Cash Flow From Financing Activities</u>		
Money borrowed (intermediate & long term)	\$ 78,239	
+ Money borrowed (short term)	7,682	
+ Increase in operating debt	3,694	
+ Cash from nonfarm capital used in business	4,313	
+ Money borrowed - nonfarm	<u>44</u>	
= Cash inflow from financing		\$ 93,972
Principal payments (intermediate & long term)	\$ 48,380	
+ Principal payments (short term)	617	
+ Decrease in operating debt	<u>0</u>	
- Cash outflow for financing		<u>\$ 48,998</u>
= Net Provided by Financing Activities		\$ 44,975
<u>Cash Flow From Reserves</u>		
Beginning farm cash, checking & savings		\$ 14,031
- Ending farm cash, checking & savings		<u>17,805</u>
= Net Provided from Reserves		\$ -3,773
<u>Imbalance (error)</u>		
		\$ 1,338

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 2015. The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to planned 2015 debt payments shown below.

FARM DEBT PAYMENTS PLANNED

Small Herd Dairy Farms, 2013 & 2014

Debt Payments	Same 33 Dairy Farms			Same 15 Top 50% Farms		
	2014 Payments		Planned 2015	2014 Payments		Planned 2015
	Planned	Made		Planned	Made	
Long-term	\$ 8,130	\$ 9,907	\$ 10,164	\$ 9,369	\$ 11,660	\$ 12,596
Intermediate-term	24,354	28,005	23,522	29,922	38,064	30,168
Short-term	1,591	100	2,003	300	219	4,406
Operating (net reduction)	11	1,118	30	0	1,876	0
Accounts payable (net reduction)	0	3,672	0	0	4,110	0
Total	\$ 34,086	\$ 42,801	\$ 35,719	\$ 39,591	\$ 55,929	\$ 47,170
Per cow	\$ 440	\$ 553		\$ 420	\$ 594	
Per cwt. 2014 milk	\$ 2.21	\$ 2.78		\$ 1.89	\$ 2.67	
Percent of total 2014 receipts	8%	10%		7%	9%	
Percent of 2014 milk receipts	9%	11%		7%	10%	

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 2014 (as of December 31, 2013) that could have been made with the amount available for debt service in 2014. Farmers who did not participate in DFBS in 2013 have their 2014 cash flow coverage ratio based on planned debt payments for 2015.

COVERAGE RATIOS

Same 33 Small Herd Dairy Farms, 2013 & 2014

Item	Average	Item	Average
<u>Cash Flow Coverage Ratio</u>		<u>Debt Coverage Ratio</u>	
Cash farm receipts	\$434,721	Net farm income (without appreciation)	\$101,464
- Cash farm expenses	326,690	+ Depreciation	28,089
+ Interest paid (cash)	7,885	+ Interest paid (accrual)	7,885
- Net personal withdrawals from farm*	42,259	- Net personal withdrawals from farm*	42,259
(A) = Amount Available for Debt Service	\$ 73,657	(A') = Repayment Capacity	\$95,179
(B) = Debt Payments Planned for 2014 (as of December 31, 2013)	\$ 34,086	(B) = Debt Payments Planned for 2014 (as of December 31, 2013)	\$34,086
(A/B)= Cash Flow Coverage Ratio for 2014	2.16	(A'/B)= Debt Coverage Ratio for 2014	2.79

Same 15 Top 50% Dairy Farms, 2013 & 2014			
(A) = Amount Available for Debt Service	\$109,270	(A') = Repayment Capacity	\$150,539
(B) = Debt Payments Planned for 2014	\$39,591	(B) = Debt Payments Planned for 2014	\$39,591
(A/B)= Cash Flow Coverage Ratio for 2014	2.76	(A'/B)= Debt Coverage Ratio for 2014	3.80

*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

44 Small Herd Dairy Farms, 2014

Item	Average 44 Farms		
	Per Cow	Per Cwt.	Total
Number cows and cwt. milk	81	16,208	
<u>Accrual Operating Receipts</u>			
Milk	\$5,148	\$25.59	\$414,682
Dairy cattle	412	2.05	33,190
Dairy calves	76	0.38	6,138
Other livestock	8	0.04	608
Crops	139	0.69	11,158
Miscellaneous receipts	<u>124</u>	<u>0.62</u>	<u>9,968</u>
Total	\$5,906	\$29.35	\$475,745
<u>Accrual Operating Expenses</u>			
Hired labor	\$ 337	\$ 1.67	\$ 27,133
Dairy grain & concentrate	1,383	6.87	111,424
Dairy roughage	124	0.61	9,949
Nondairy feed	2	0.01	166
Professional nutritional services	0	0.00	1
Machinery hire/rent/lease	89	0.44	7,188
Machinery repair & farm vehicle expense	321	1.60	25,890
Fuel, oil & grease	238	1.18	19,194
Replacement livestock	35	0.18	2,852
Breeding	67	0.33	5,426
Veterinary & medicine	107	0.53	8,640
Milk marketing	229	1.14	18,467
Bedding	61	0.30	4,907
Milking supplies	121	0.60	9,779
Cattle lease	1	0.01	110
Custom boarding	7	0.03	550
bST expense	12	0.06	967
Livestock professional fees	23	0.11	1,832
Other livestock expense	63	0.31	5,083
Fertilizer & lime	168	0.84	13,563
Seeds & plants	107	0.53	8,637
Spray & other crop expenses	63	0.31	5,042
Crop professional fees	1	0.01	109
Land, building, fence repair	82	0.41	6,634
Taxes	102	0.51	8,217
Real estate rent/lease	57	0.28	4,571
Insurance	82	0.41	6,644
Utilities	145	0.72	11,681
Other professional fees	21	0.11	1,721
Miscellaneous	<u>26</u>	<u>0.13</u>	<u>2,062</u>
Total Less Interest Paid	\$4,077	\$20.26	\$328,440
<u>Net Accrual Operating Income (without interest paid)</u>	1,829	9.09	147,305
- Change in livestock/crop inventory*	235	1.17	18,952
- Change in accounts receivable	18	0.09	1,465
- Change in feed/supply inventory**	138	0.68	11,088
+ Change in accts. payable***	<u>-43</u>	<u>-0.22</u>	<u>-3,488</u>
NET CASH FLOW	<u>\$1,394</u>	<u>\$ 6.93</u>	<u>\$112,311</u>
- Net personal withdrawals from farm (see footnote on p. 15)	<u>501</u>	<u>2.49</u>	<u>40,378</u>
Available for Farm Debt Payments & Investments	\$ 893	\$ 4.44	\$ 71,933
- Farm debt payments	<u>637</u>	<u>3.16</u>	<u>51,291</u>
Available for Farm Investment	\$ 256	\$ 1.27	\$ 20,642
- Capital purchases: cattle, machinery & improvements	<u>1,311</u>	<u>6.51</u>	<u>105,569</u>
Additional Capital Needed	\$1,054	\$ 5.24	\$ 84,927

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

***Excludes change in interest account payable.

ANNUAL CASH FLOW WORKSHEET

Top 50% Small Herd Dairy Farms, 2014

Item	Average Top 50% Farms		
	Per Cow	Per Cwt.	Total
Number of cows or cwt. milk	92 20,035	
<u>Accrual Operating Receipts</u>			
Milk	\$5,628	\$25.80	\$516,803
Dairy cattle	379	1.74	34,833
Dairy calves	84	0.39	7,736
Other livestock	5	0.02	445
Crops	180	0.83	16,572
Miscellaneous receipts	<u>152</u>	<u>0.69</u>	<u>13,916</u>
Total	\$6,429	\$29.46	\$590,305
<u>Accrual Operating Expenses</u>			
Hired labor	\$ 389	\$ 1.78	\$ 35,741
Dairy grain & concentrate	1,542	7.07	141,612
Dairy roughage	134	0.62	12,330
Nondairy feed	0	0.00	0
Professional nutritional services	0	0.00	2
Machinery hire/rent/lease	105	0.48	9,649
Machinery repair & farm vehicle expense	343	1.57	31,473
Fuel, oil & grease	239	1.09	21,922
Replacement livestock	32	0.15	2,930
Breeding	68	0.31	6,225
Veterinary & medicine	107	0.49	9,811
Milk marketing	266	1.22	24,422
Bedding	60	0.28	5,518
Milking supplies	133	0.61	12,187
Cattle lease	1	0.01	127
Custom boarding	12	0.05	1,101
bST expense	8	0.04	749
Livestock professional fees	27	0.12	2,494
Other livestock expense	67	0.31	6,136
Fertilizer & lime	176	0.81	16,171
Seeds & plants	119	0.55	10,957
Spray & other crop expenses	68	0.31	6,281
Crop professional fees	1	0.01	110
Land, building, fence repair	72	0.33	6,629
Taxes	96	0.44	8,840
Real estate rent/lease	65	0.30	5,968
Insurance	78	0.36	7,197
Utilities	132	0.61	12,129
Other professional fees	21	0.09	1,900
Miscellaneous	<u>28</u>	<u>0.13</u>	<u>2,603</u>
Total Less Interest Paid	\$4,391	\$20.13	\$403,211
<u>Net Accrual Operating Income (without interest paid)</u>	2,038	9.34	187,094
- Change in livestock/crop inventory*	264	1.21	24,212
- Change in accounts receivable	52	0.24	4,780
- Change in feed/supply inventory**	193	0.88	17,680
+ Change in accounts payable***	<u>-22</u>	<u>-0.10</u>	<u>-2,023</u>
NET CASH FLOW	\$1,507	\$ 6.91	\$138,399
- Net personal withdrawals from farm (see footnote p.15)	<u>420</u>	<u>1.92</u>	<u>38,566</u>
Available for Farm Debt Payments & Investments	\$1,087	\$ 4.98	\$ 99,834
- Farm debt payments	<u>675</u>	<u>3.09</u>	<u>61,972</u>
Available for Farm Investment	\$ 412	\$ 1.89	\$ 37,861
- Capital purchases: cattle, machinery & improvements	<u>1,441</u>	<u>6.60</u>	<u>132,270</u>
Additional Capital Needed	\$1,028	\$ 4.71	\$ 94,408

*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

44 Small Herd Dairy Farms, 2014

Item	Average 44 Farms			Top 50% Farm		
Land	<u>Owned</u>	<u>Rented</u>	<u>Total</u>	<u>Owned</u>	<u>Rented</u>	<u>Total</u>
Tillable	132	145	278	124	145	269
Nontillable	24	19	43	14	22	36
Other nontillable	<u>63</u>	<u>10</u>	<u>73</u>	<u>51</u>	<u>17</u>	<u>68</u>
Total	219	174	393	189	184	373
Crop Yields	<u>Farms</u>	<u>Acres*</u>	<u>Production/Acre</u>	<u>Farms</u>	<u>Acres</u>	<u>Production/Acre</u>
Hay crop	39	202	2.26 tn DM	19	197	2.55 tn DM
Corn silage	37	71	17.30 tn	17	89	18.50 tn
			5.93 tn DM			6.24 tn DM
Other forage	4	40	2.48 tn DM	2	53	2.88 tn DM
Total forage	39	274	3.17 tn DM	19	282	3.60 tn DM
Corn grain	11	41	148 bu	5	40	164 bu
Oats	1	27	46 bu	0	0	0 bu
Wheat	1	20	45 bu	1	20	45 bu
Other crops	8	71		5	40	
Tillable pasture	9	43		3	41	
Idle	6	24		3	8	
Total Tillable Acres	44	278		22	269	

*This column represents the average acreage for the farms producing that crop. Average acreages including those farms not producing were hay crop 179, corn silage 60, corn grain 10, oats 1, tillable pasture 9, and idle 3.

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

39 Small Herd Dairy Farms, 2014**

Item	Average 39 Farms	Top 50% Farm
Total tillable acres per cow	3.65	3.13
Total forage acres per cow	3.29	2.84
Harvested forage dry matter, tons per cow	10.45	10.21

**Excludes farms that do not harvest forages.

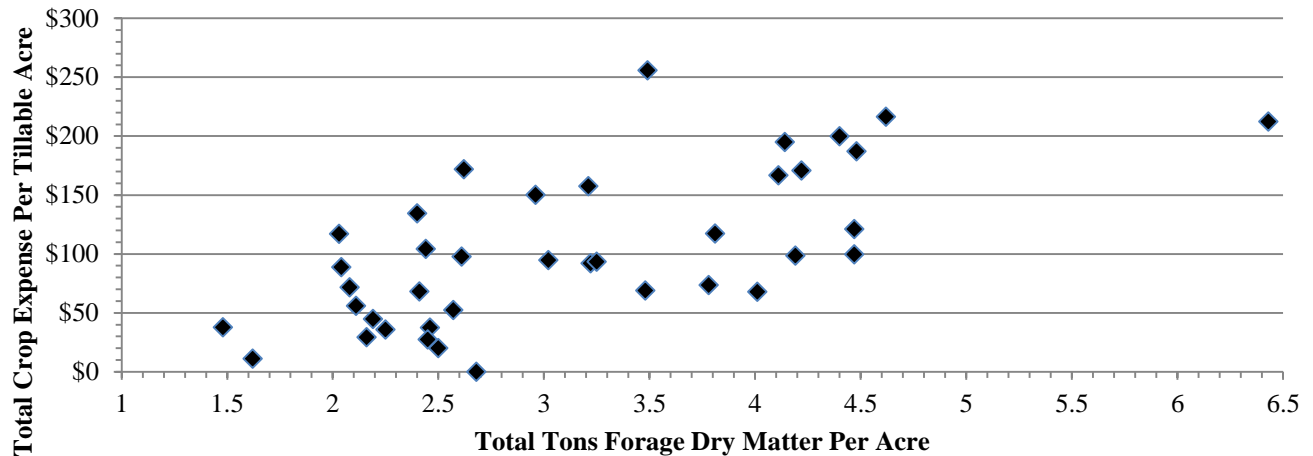
Cropping Analysis (continued)

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 12 farms, 7 of which are in the "top 50% farms" group.

CROP RELATED ACCRUAL EXPENSES
Small Herd Dairy Farms Reporting Forage Production, 2014

Item	Average 39 farms		Top 50% Farms	
	Total Per Tillable Acre			
Number of farms reporting	39		19	
Average number of acres	303		311	
Fertilizer & lime expenses	\$	52.46	\$	63.93
Seeds & plants		30.74		39.20
Spray & other crop expenses		20.50		24.96
TOTAL	\$	103.70	\$	128.09

CROP EXPENSE PER ACRE AND TOTAL FORAGE PRODUCTION PER ACRE
39 Small Herd Farms That Grow Forages, 2014



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
39 Small Herd Dairy Farms That Grow Forages, 2014

Machinery Expense	Average 39 farms		Top 50% Farms	
	Total Expenses	Per Tillable Acre	Total Expenses	Per Tillable Acre
Fuel, oil & grease	\$ 20,744	\$ 68.37	\$ 24,741	\$ 79.55
Machinery repair & vehicle expense	28,264	93.15	35,711	114.83
Machine hire, rent & lease	6,876	22.66	10,263	33.00
Interest (5%)	13,348	43.99	13,792	44.35
Depreciation	<u>24,902</u>	<u>82.07</u>	<u>28,574</u>	<u>91.88</u>
Total	\$ 94,133	\$ 310.24	\$ 113,081	\$ 363.61

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
44 Small Herd Dairy Farms, 2014

Item	Dairy Cows		Bred		Heifer Open		Calves	
	No.	Value	No.	Value	No.	Value	No.	Value
<u>Average 44 Farms:</u>								
Beg. year (owned)	78	\$115,632	23	\$31,045	24	\$21,303	19	\$9,695
+ Change w/o apprec.		7,601		1,925		1,911		1,403
+ Appreciation		<u>1,220</u>		<u>341</u>		<u>164</u>		<u>203</u>
End year (owned)	83	\$124,453	25	\$33,311	27	\$23,378	22	\$11,302
End including leased	84							
Average number	81		68	(all age groups)				
<u>Top 50% Farms:</u>								
Beg. year (owned)	89	\$135,539	26	\$36,018	26	\$23,039	22	\$11,984
+ Change w/o apprec.		5,618		591		4,900		2,014
+ Appreciation		<u>295</u>		<u>159</u>		<u>191</u>		<u>200</u>
End year (owned)	93	\$141,452	27	\$36,768	32	\$28,130	26	\$14,198
End including leased	94							
Average number	92		80	(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
44 Small Herd Dairy Farms, 2014

Item	Average 44 Farms	Top 50% Farms
Total milk sold, lbs.	1,620,763	2,003,485
Milk sold per cow, lbs.	20,121	21,820
Average milk plant test, percent butterfat (average of farms reporting)	3.99	4.04

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
44 Small Herd Dairy Farms, 2014

Item	Average 44 Farms		Top 50% Farms	
	Number	Percent*	Number	Percent*
Cows sold for beef	18	22.4	21	23.2
Cows sold for dairy	1	0.8	0	0.5
Cows died	4	4.7	4	4.8
Culling rate**		27.1		28.0

*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**
44 Small Herd Dairy Farms, 2014

Item	Average 44 Farms			Top 50% Farms		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
<u>Accrual Cost of Producing Milk</u>						
Operating costs	\$ 280,289	\$ 3,480	\$ 17.29	\$ 339,222	\$ 3,694	\$ 16.93
Purchased inputs costs	\$ 307,454	\$ 3,817	\$ 18.97	\$ 368,417	\$ 4,012	\$ 18.39
Total costs	\$ 411,769	\$ 5,112	\$ 25.41	\$ 466,601	\$ 5,082	\$ 23.29
<u>Accrual Receipts</u>						
<u>From Milk</u>	\$ 414,682	\$ 5,148	\$ 25.59	\$ 516,803	\$ 5,628	\$ 25.80
Net Milk Receipts	\$ 396,215	\$ 4,919	\$ 24.45	\$ 492,381	\$ 5,362	\$ 24.58
Net Farm Income						
without Appreciation	\$ 107,227	\$ 1,331	\$ 6.62	\$ 148,386	\$ 1,616	\$ 7.41
Net Farm Income						
with Appreciation	\$ 116,382	\$ 1,445	\$ 7.18	\$ 153,718	\$ 1,674	\$ 7.67

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
44 Small Herd Dairy Farms, 2014

Item	Average 44 Farms		Top 50% Farms	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Purchased dairy grain & concentrate	\$ 1,383	\$ 6.87	\$ 1,542	\$ 7.07
Purchased dairy roughage	124	0.61	134	0.62
Total Purchased Dairy Feed	\$ 1,507	\$ 7.49	\$ 1,677	\$ 7.68
Purchased grain & conc. as % of milk receipts		26%		27%
Purchased feed & crop expense	\$ 1,846	\$ 9.18	\$ 2,042	\$ 9.36
Purchased feed & crop expense as % of milk receipts		35%		36%
Breeding	\$ 67	\$ 0.33	\$ 68	\$ 0.31
Veterinary & medicine	107	0.53	107	0.49
Milk marketing	229	1.14	266	1.22
Bedding	61	0.30	66	0.28
Milking supplies	121	0.60	133	0.61
Cattle lease	1	0.01	1	0.01
Custom boarding	7	0.03	12	0.05
bST	12	0.06	8	0.04
Livestock professional fees	23	0.11	27	0.12
Other livestock expense	63	0.31	67	0.31

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

44 Small Herd Dairy Farms, 2014

Item	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
<u>Average 44 Farms:</u>				
Farm capital*	\$398,461	\$14,009	\$3,917	\$7,758
Real estate*		6,510		3,605
Machinery & equipment	85,794	3,014	875	
<u>Ratios</u>				
Asset turnover*	Operating Expense	Interest Expense	Depreciation Expense	
0.43	0.70	0.02	0.06	
<u>Top 50% Farms:</u>				
Farm capital*	\$408,123	\$ 13,032	\$4,056	\$7,952
Real estate*		5,645		3,444
Machinery & equipment	88,112	2,687	917	
<u>Ratios</u>				
Asset turnover*	Operating Expense	Interest Expense	Depreciation Expense	
0.51	0.69	0.01	0.05	

*Excludes rented farms.

LABOR FORCE INVENTORY AND ANALYSIS

44 Small Herd Dairy Farms, 2014

Labor Force	Months	Age	Years of Education	Value of Labor & Management
<u>Average 44 Farms:</u>				
Operator number 1	14.1	49	14	\$ 38,809
Operator number 2	3.1	53	15	9,534
Operator number 3	0.8	25	16	1,477
Family paid	3.5			
Family unpaid	4.6			
Hired	8.0			
Total	34.0	/ 12 = 2.83 Worker Equivalent 1.27 Operator/Manager Equivalent		
<u>Top 50% Farms:</u> Total	33.58	/ 12 = 2.80 Worker Equivalent 1.15 Operator/Manager Equivalent		
Operator's				

Labor Efficiency	Average 44 Farms		Top 50% Farms	
	Total	Per Worker	Total	Per Worker
Cows, average number	81	28	92	33
Milk sold, pounds	1,620,763	572,034	2,003,485	715,956
Tillable acres	278	98	269	96

Labor Costs	Average 44 Farms			Top 50% Farms		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
Value of operator(s)						
labor (\$2,600/month)	\$46,696	\$ 580	\$ 2.88	\$42,510	\$ 463	\$ 2.12
Family unpaid (\$2,600/month)	11,960	148	0.74	10,894	119	0.54
Hired	27,133	337	1.67	35,741	389	1.78
Total Labor	\$85,789	\$ 1,065	\$ 5.29	\$89,145	\$ 971	\$ 4.45
Machinery Cost	\$87,237	\$ 1,083	\$ 5.38	\$101,015	\$ 1,100	\$ 5.04
Total Labor & Machinery	\$173,026	\$ 2,148	\$ 10.68	\$190,160	\$ 2,071	\$ 9.49
Hired labor expense per hired worker equivalent		\$28,461			\$32,890	
Hired labor expense as % of milk sales		6.5%			6.9%	

COMPARATIVE ANALYSIS OF THE FARM BUSINESS

Comparison to Top 50 Percent

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 33 Small Herd Dairy Farms, 2013 & 2014

Selected Factors	Average of Same 33 Farms*		Average of Same 15 Top 50% Farms*	
	2013	2014	2013	2014
<u>Size of Business</u>				
Average number of cows	77	77	92	94
Average number of heifers	62	66	78	81
Milk sold, lbs.	1,542,253	1,540,830	2,064,523	2,096,444
Worker equivalent	2.69	2.75	2.73	2.82
Total tillable acres	273	281	275	277
<u>Rates of Production</u>				
Milk sold per cow, lbs.	19,983	19,910	22,538	22,255
Hay DM per acre, tons	2.1	2.2	2.3	2.6
Corn silage per acre, tons	16.1	18.1	16.8	19.7
<u>Labor Efficiency</u>				
Cows per worker	29	28	34	33
Milk sold/worker, lbs.	574,218	559,963	757,160	742,981
<u>Cost Control</u>				
Grain & concentrate purchased as % of milk sales	29%	25%	32%	27%
Dairy feed & crop expense per cwt. milk	\$ 8.27	\$ 8.81	\$ 8.88	\$ 9.28
Labor & machinery costs/cow	\$ 1,968	\$ 2,158	\$ 1,861	\$ 2,009
Operating cost of producing cwt. of milk	\$ 15.72	\$ 17.00	\$ 15.29	\$ 16.83
<u>Capital Efficiency**</u>				
Farm capital per cow***	\$ 13,694	\$ 14,531	\$ 12,166	\$ 12,932
Machinery & equipment per cow	\$ 6,003	\$ 6,403	\$ 4,446	\$ 4,784
Asset turnover ratio***	0.37	0.40	0.48	0.52
<u>Profitability</u>				
Net farm income w/o appreciation	\$ 59,875	\$ 101,464	\$ 92,771	\$ 155,450
Net farm income with appreciation	\$ 70,045	\$ 110,284	\$ 104,245	\$ 163,822
Labor & management income per operator/manager	\$ 10,439	\$ 37,056	\$ 39,998	\$ 86,893
Rate of return on equity capital with appreciation	2.0%	5.8%	6.6%	12.5%
Rate of return on all capital with appreciation	2.4%	5.3%	5.9%	10.2%
<u>Financial Summary</u>				
Farm net worth, end year	\$ 817,408	\$ 890,483	\$ 783,634	\$ 895,877
Debt to asset ratio	0.22	0.21	0.25	0.24
Farm debt per cow	\$ 2,995	\$ 2,992	\$ 2,849	\$ 2,967

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

RECEIPTS AND EXPENSES PER COW AND PER CWT.

Same 33 Small Herd Dairy Farms, 2013 & 2014

Item	2013		2014	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	77		77	
Cwt. of Milk Sold		15,423		15,408
<u>ACCRUAL OPERATING RECEIPTS</u>				
Milk	\$4,251	\$21.27	\$5,066	\$25.45
Dairy cattle	323	1.61	341	1.71
Dairy calves	25	0.13	89	0.44
Other livestock	7	0.04	11	0.06
Crops	136	0.68	110	0.55
Miscellaneous receipts	<u>209</u>	<u>1.04</u>	<u>125</u>	<u>0.63</u>
Total Receipts	\$4,951	\$24.78	\$5,742	\$28.84
<u>ACCRUAL OPERATING EXPENSES</u>				
Hired labor	\$ 304	\$ 1.52	\$ 328	\$ 1.65
Dairy grain & concentrate	1,262	6.32	1,332	6.69
Dairy roughage	77	0.39	110	0.55
Nondairy feed	0	0.00	3	0.01
Professional nutritional services	0	0.00	0	0.00
Machine hire/rent/lease	119	0.59	105	0.53
Mach. repair & vehicle exp.	264	1.32	305	1.53
Fuel, oil & grease	221	1.11	223	1.12
Replacement livestock	49	0.25	35	0.18
Breeding	65	0.32	65	0.33
Veterinary & medicine	95	0.48	98	0.49
Milk marketing	219	1.10	223	1.12
Bedding	48	0.24	55	0.28
Milking supplies	109	0.55	126	0.63
Cattle lease	1	0.01	2	0.01
Custom boarding	26	0.13	9	0.04
bST expense	6	0.03	9	0.05
Livestock professional fees	27	0.13	24	0.12
Other livestock expense	39	0.20	58	0.29
Fertilizer & lime	154	0.77	157	0.79
Seeds & plants	101	0.51	100	0.50
Spray/other crop expense	55	0.28	54	0.27
Crop professional fees	2	0.01	2	0.01
Land, building, fence repair	74	0.37	86	0.43
Taxes	106	0.53	111	0.56
Real estate rent/lease	58	0.29	57	0.29
Insurance	72	0.36	85	0.43
Utilities	136	0.68	150	0.75
Interest paid	104	0.52	102	0.51
Other professional fees	25	0.12	22	0.11
Miscellaneous	<u>21</u>	<u>0.10</u>	<u>22</u>	<u>0.11</u>
Total Operating Expenses	\$3,841	\$19.22	\$4,058	\$20.38
Expansion Livestock	0	0.00	3	0.02
Extraordinary Expense	9	0.04	7	0.03
Machinery Depreciation	256	1.28	310	1.56
Real Estate Depreciation	<u>70</u>	<u>0.35</u>	<u>53</u>	<u>0.26</u>
Total Expenses	\$4,176	\$20.89	\$4,431	\$22.25
Net Farm Income Without Appreciation	\$ 776	\$ 3.88	\$1,311	\$ 6.59

RECEIPTS AND EXPENSES PER COW AND PER CWT.

Same 15 Top 50% Small Herd Dairy Farms, 2013 & 2014

Item	2013		2014	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	92		94	
Cwt. Of Milk Sold		20,645		20,964
<u>ACCRUAL OPERATING RECEIPTS</u>				
Milk	\$4,824	\$21.40	\$5,738	\$25.78
Dairy cattle	412	1.83	326	1.46
Dairy calves	30	0.13	105	0.47
Other livestock	-3	-0.01	8	0.04
Crops	152	0.67	162	0.73
Miscellaneous receipts	<u>206</u>	<u>0.91</u>	<u>144</u>	<u>0.64</u>
Total Receipts	\$5,620	\$24.94	\$6,482	\$29.12
<u>ACCRUAL OPERATING EXPENSES</u>				
Hired labor	\$ 316	\$ 1.40	\$ 359	\$ 1.61
Dairy grain & concentrate	1,575	6.99	1,612	7.25
Dairy roughage	131	0.58	155	0.70
Nondairy feed	0	0.00	0	0.00
Professional nutritional services	0	0.00	0	0.00
Machine hire/rent/lease	161	0.71	148	0.66
Mach. repair & vehicle exp.	245	1.09	295	1.32
Fuel, oil & grease	203	0.90	220	0.99
Replacement livestock	46	0.20	40	0.18
Breeding	68	0.30	63	0.28
Veterinary & medicine	104	0.46	104	0.47
Milk marketing	261	1.16	262	1.18
Bedding	54	0.24	54	0.24
Milking supplies	113	0.50	152	0.68
Cattle lease	2	0.01	2	0.01
Custom boarding	49	0.22	16	0.07
bST expense	6	0.03	9	0.04
Livestock professional fees	27	0.12	30	0.13
Other livestock expense	29	0.13	58	0.26
Fertilizer & lime	158	0.70	139	0.62
Seeds & plants	85	0.38	102	0.46
Spray/other crop expense	49	0.22	54	0.24
Crop professional fees	3	0.01	2	0.01
Land, building, fence repair	65	0.29	95	0.43
Taxes	98	0.44	97	0.44
Real estate rent/lease	64	0.29	68	0.30
Insurance	62	0.27	84	0.38
Utilities	122	0.54	133	0.60
Interest paid	98	0.43	89	0.40
Other professional fees	26	0.12	23	0.10
Miscellaneous	<u>22</u>	<u>0.10</u>	<u>26</u>	<u>0.12</u>
Total Operating Expenses	\$4,244	\$18.83	\$4,489	\$20.17
Expansion Livestock	0	0.00	0	0.00
Extraordinary Expense	16	0.07	12	0.06
Machinery Depreciation	269	1.19	293	1.32
Real Estate Depreciation	<u>79</u>	<u>0.35</u>	<u>37</u>	<u>0.17</u>
Total Expenses	\$4,608	\$20.44	\$4,831	\$21.72
Net Farm Income Without Appreciation	\$1,013	\$ 4.49	\$1,650	\$ 7.41

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

44 Small Herd Dairy Farms, 2014

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)
4.4	130	2,928,908	25,542	3.7	22	43	934,695
3.6	109	2,270,038	22,273	2.7	19	33	691,098
2.8	74	1,428,154	20,322	2.1	16	28	543,400
2.2	55	993,305	17,343	1.6	12	23	447,294
1.5	40	628,762	12,724	0.5	2	20	287,975

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)
\$639	16%	\$558	\$1,537	\$922	\$6.09	1.2%	10.1%
1,051	23	793	1,803	1,375	8.07	2.6	16.9
1,328	26	1,004	2,118	1,797	8.80	4.0	23.4
1,574	29	1,303	2,456	2,190	9.83	6.2	28.2
2,049	35	1,614	2,960	2,649	11.93	10.0	37.0

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)
\$6,533	\$13.42	\$21.28	17.6%	\$206,506	\$115,596	\$164,275
5,727	16.15	23.55	8.8	146,353	76,041	115,391
5,293	17.22	25.25	5.9	109,351	50,257	77,870
4,418	18.85	28.20	1.7	68,873	18,443	44,742
3,127	20.48	38.12	-4.3	16,085	-35,152	2,166

*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. One area that was examined this year was the source of dairy replacements.

SOURCE OF DAIRY REPLACEMENTS 32 Dairy Farms, 2014

<u>Animals Entering Herd</u>	Average
Number calving in 2014 for first time	409
Animals purchased, % ¹	3.0
Animals raised by farm, % ²	97.0
<u>Current Heifer Inventory</u>	
Raised on dairy, %	83.4
Raised by a custom grower, %	16.6

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

² 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, 409 animals calved for the first time in 2014. The breakdown on the source of these animals was 3.0 percent purchased and 97.0 percent raised on the farm. Of the current heifer inventory, 83.4 percent were raised on the dairy and 16.6 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 1st, 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, 15 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
15 Small Herd Dairy Farms, 2014

	Pounds	Percent	Price/Pound	Total	\$/Cwt of Milk
BASE FARM PRICE					
Butterfat	75,644	3.97%	\$2.36	\$178,446	\$9.37
Protein	59,164	3.11%	\$3.83	\$225,147	\$11.82
Solids	107,400	5.64%	\$0.48	\$ 50,978	\$2.68
Total Component Contribution					\$ 23.86
PPD	1,905,394			\$ 22,030	\$ 1.16
Base Farm Price					\$ 25.01
Premiums					
Quality				\$ 4,825	\$0.25
Volume				\$ 1,441	\$0.08
Market Premiums				\$ 1,815	\$0.10
Total Premiums					\$ 0.42
BASE FARM PRICE + PREMIUM					\$ 25.44
<hr style="border-top: 1px dashed black;"/>					
Deductions					
Promo				\$ 2,864	\$0.15
Hauling & Coop Dues				\$ 15,468	\$0.81
Total Deductions					\$ 0.96
BASE FARM PRICE + PREMIUMS - DEDUCTIONS					\$ 24.48
Marketing Programs					
Futures Contracts, Forward Contracting, Etc.				\$ -599	\$-0.03
Total Marketing Income					\$-0.03
Patronage Dividends				\$ 4,256	\$ 0.22
NET PRICE RECEIVED ON FARM, ALL SOURCES					\$ 24.67

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

\$ 0.62

*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 15 farms is 93 cows.

MILK PRICE INFORMATION BY QUARTILE*
(Each Category Sorted Independently)
15 Small Herd Dairy Farms, 2014

	Lowest Quartile	←—————→	Highest Quartile
Butterfat, %	3.71	3.93	4.42
Protein, %	2.96	3.05	3.29
Other Solids, %	5.28	5.67	5.87
Butterfat, \$ per Cwt.	8.78	9.22	10.50
Protein, \$ per Cwt.	11.22	11.62	12.88
Other solids, \$ per Cwt.	2.64	2.66	2.71
Total Component Value per Cwt.	\$ 22.71	\$ 23.48	\$ 25.93
PPD, \$ per Cwt.	0.82	0.94	1.67
Base Farm Price per Cwt.	\$ 23.93	\$ 24.71	\$ 26.97
Quality, \$ per Cwt.	0.04	0.13	0.73
Volume, \$ per Cwt.	0.00	0.00	0.16
Market premium, \$ per Cwt.	-0.38	0.13	0.81
Total Premium, \$ per Cwt.	0.05	0.36	1.23
Base Farm Price + Premiums per Cwt.	\$ 24.10	\$ 25.21	\$ 28.06
Promotion, \$ per Cwt.	0.15	0.15	0.15
Hauling & Coop Dues \$ per Cwt.	0.34	0.73	1.28
Total Marketing Expenses per Cwt.	\$ 0.49	\$ 0.88	\$ 1.43
Base + Premiums – Deductions per Cwt.	\$ 23.37	\$ 24.09	\$ 26.96
Futures contract, forward contracting, \$ per Cwt.	-0.08	0.00	0.00
Total Marketing Income, \$ per Cwt.	\$ -0.08	\$ 0.00	\$ 0.00
Patronage Dividends, \$ per Cwt.	\$ 0.00	\$ 0.00	\$ 0.78
Net Price Received From All Sources, \$ per Cwt.	\$ 23.48	\$ 24.26	\$ 27.09
Net Marketing Value, \$ per Cwt. (PPD + Total Premiums – Total Deductions)	0.23	0.57	1.34

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

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 171 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

171 New York Dairy Farms, 2013

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)
39.9	1,976	52,254,852	28,620	5.3	24	64	1,544,121
26.0	1,187	31,161,995	27,342	4.5	21	53	1,298,023
20.9	968	25,221,350	26,638	4.1	20	49	1,211,659
17.6	764	19,848,109	26,051	3.7	19	46	1,154,144
14.1	614	15,011,729	25,370	3.4	18	44	1,092,286

10.5	438	10,936,395	24,516	3.1	17	41	1,006,486
6.8	284	6,492,159	23,399	2.8	16	38	883,376
4.4	162	3,307,891	21,767	2.4	15	34	759,105
2.9	94	1,828,527	18,508	2.0	12	28	592,477
1.9	52	866,932	13,668	0.7	1	22	385,315

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)		
\$774	21%	\$495	\$1,118	\$1,040	\$6.20		
1,215	27	683	1,445	1,588	7.48		
1,385	28	762	1,561	1,823	8.06		
1,558	30	826	1,664	1,976	8.31		
1,645	32	894	1,719	2,106	8.68		

1,748	33	952	1,800	2,202	9.02		
1,854	34	1,000	1,902	2,325	9.33		
1,944	36	1,079	2,032	2,430	9.68		
2,067	38	1,170	2,181	2,564	10.08		
2,287	41	1,419	2,577	2,818	11.63		

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

**FARM BUSINESS CHART FOR
FARM MANAGEMENT COOPERATORS**
171 New York Dairy Farms, 2013

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)
\$6,223	\$23.52	\$2,159	\$13.06	\$3,399	\$17.86
5,991	22.38	3,071	14.31	4,330	18.88
5,767	22.10	3,470	14.93	4,667	19.58
5,609	21.89	3,688	15.53	4,913	20.09
5,459	21.70	3,940	16.31	5,051	20.73

5,260	21.51	4,124	17.06	5,192	21.42
4,995	21.31	4,290	17.67	5,382	22.44
4,661	21.11	4,557	18.42	5,568	23.48
4,066	20.83	4,803	19.33	5,902	24.77
2,972	20.27	5,289	21.14	6,317	30.55

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)
\$2,293,718	\$1,662	0.27	\$2,875,086	\$2,196	\$1,658,986	\$807,659
1,323,231	1,409	0.22	1,537,847	1,751	874,557	426,977
871,401	1,179	0.20	1,049,392	1,469	561,397	262,451
588,780	1,013	0.18	778,316	1,276	361,202	171,348
373,730	852	0.15	523,504	1,081	177,429	97,301

237,277	691	0.12	328,362	894	86,913	46,707
156,234	547	0.10	208,401	704	28,456	19,016
92,959	411	0.07	115,544	559	-1,382	-132
36,993	243	0.05	51,507	380	-36,812	-21,191
-14,804	-81	-0.03	-5,596	-3	-162,083	-94,885

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 35-39.

Financial Analysis Chart

The farm financial analysis chart on page 32 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
171 New York Dairy Farms, 2013

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)
\$ 53	\$1,585	9.83	12.79	0%	\$ 260	62%	91.19
222	1,243	3.26	3.76	2	1,348	40	7.09
366	1,038	2.19	2.77	4	2,070	33	4.70
456	927	1.73	2.22	7	2,607	28	3.29
549	789	1.50	1.72	9	3,074	24	2.77
641	661	1.23	1.38	10	3,514	20	2.40
730	521	0.98	1.06	11	3,972	16	1.97
852	418	0.76	0.82	14	4,428	10	1.47
1,086	204	0.48	0.38	16	5,196	5	1.13
1,917	-448	-1.71	-0.72	21	6,854	-8	0.61
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)	
0.02	98%	0.02	0.00	0.65	0.00	0.03	
0.13	89	0.09	0.00	0.70	0.01	0.04	
0.23	82	0.15	0.06	0.72	0.01	0.04	
0.32	76	0.23	0.15	0.74	0.01	0.05	
0.39	72	0.27	0.25	0.76	0.02	0.06	
0.49	68	0.32	0.34	0.79	0.02	0.06	
0.62	62	0.38	0.40	0.81	0.03	0.07	
0.76	57	0.42	0.47	0.84	0.03	0.08	
0.87	54	0.50	0.56	0.88	0.04	0.09	
1.61	41	0.67	0.81	0.94	0.06	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)	
0.88	\$2,155	\$755	\$6,982	\$2,009,009	29%	19%	
0.73	2,989	1,109	8,484	1,003,640	20	14	
0.67	3,498	1,373	9,154	681,182	17	12	
0.62	3,913	1,629	9,860	440,826	14	10	
0.58	4,276	1,858	10,660	247,080	11	8	
0.55	4,774	2,013	11,257	131,971	8	6	
0.52	5,265	2,259	11,917	79,692	5	5	
0.46	5,806	2,473	12,832	18,703	2	3	
0.39	6,721	2,865	14,119	-5,034	-1	1	
0.28	9,762	4,363	17,767	-366,287	-10	-4	

*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 34 includes the average values for the resulting five groups of dairy farms. The average size of farms in the five groups ranges from 46 cows on the small conventional farms to 1,097 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 investment per cow as well as 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 35-39. 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 2013 State Summary*. In most years, as herd size increases, the net farm income increases (page 48)*; and that was the case for 2013. Net farm income without appreciation averaged \$25,437 per farm for the less than 60 cow farms and \$1,351,681 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 2013. The largest herd size category experienced an increase in net worth of \$924,421. However, percent equity varied as herd size increased. The 900 and over herd size category had the lowest percent equity at 66 percent; while the less than 60 and 60 to 99 herd size categories averaged the highest percent equity at 77 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 26,225 pounds of milk sold per cow, farms in the largest herd size group averaged 7.5 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 1,169,058 pounds of milk sold per worker while the farms with less than 100 cows averaged less than 452,000 pounds per worker.

* Wayne A. Knoblauch, Cathryn Dymond, Jason Karszes, and Richard Kimmich, Dairy Farm Management Business Summary, New York State, 2013, Charles H. Dyson School of Applied Economics and Management, Cornell University, R.B. 2014-02, October 2014.

SELECTED BUSINESS FACTORS BY TYPE OF BARN AND HERD SIZE

171 New York Dairy Farms, 2013

Item	Farms with:	Tiestall/Stanchion		Freestall		
		<= 60 Cows	>60 Cows	<=200 Cows	201-500 Cows	≥500 Cows
Number of farms		13	10	25	27	84
<u>Cropping Program Analysis</u>						
Total Tillable acres		193	301	363	680	2,087
Tillable acres rented*		91	178	159	313	992
Hay crop acres*		140	177	216	322	884
Corn silage acres*		21	58	104	259	867
Hay crop, tons DM/acre		1.6	1.8	2.5	3.3	3.7
Corn silage, tons/acre		15.2	15.5	15.1	17.4	18.1
Oats, bushels/acre		0	65	72	50	74
Forage DM per cow, tons		8.0	8.6	9.3	8.4	8.4
Tillable acres/cow		4.1	3.5	2.9	2.0	1.9
Fertilizer & lime expense/tillable acre		\$33.97	\$68.66	\$54.86	\$83.02	\$77.22
Total machinery costs		\$45,541	\$84,103	\$125,551	\$334,055	\$986,915
Machinery cost/tillable acre		\$238	\$279	\$342	\$488	\$462
<u>Dairy Analysis</u>						
Number of cows		46	85	127	343	1,097
Number of heifers		35	71	101	276	953
Milk sold, lbs.		790,724	1,832,536	2,613,050	8,647,161	28,629,982
Milk sold/cow, lbs.		17,276	21,483	20,556	25,210	26,098
Operating cost of producing milk/cwt.		\$15.66	\$15.83	\$17.15	\$17.06	\$16.52
Total cost of producing milk/cwt.		\$27.70	\$22.62	\$23.27	\$21.23	\$20.02
Price/cwt. milk sold		\$21.45	\$21.18	\$21.77	\$21.73	\$21.64
Purchased dairy feed/cow		\$1,068	\$1,446	\$1,472	\$1,985	\$1,964
Purchased dairy feed/cwt. milk		\$6.18	\$6.73	\$8.85	\$7.87	\$7.53
Purchased grain & concentrate as % of milk receipts		27%	29%	32%	33%	33%
Purchased feed & crop expense/cwt milk		\$7.33	\$8.51	\$8.85	\$9.11	\$8.83
<u>Capital Efficiency</u>						
Farm capital/worker		\$340,187	\$314,853	\$412,594	\$414,822	\$494,969
Farm capital/cow		\$15,608	\$11,000	\$12,139	\$10,461	\$10,612
Farm capital/tillable acre owned		\$6,978	\$7,597	\$7,591	\$9,771	\$10,624
Real estate/cow		\$8,595	\$4,548	\$5,508	\$4,247	\$4,325
Machinery investment/cow		\$3,279	\$2,364	\$2,328	\$2,006	\$1,735
Asset turnover ratio		0.30	0.51	0.42	0.62	0.62
<u>Labor Efficiency</u>						
Worker equivalent		2.10	2.97	3.74	8.65	23.52
Operator/manager equivalent		1.21	1.63	1.36	1.88	2.41
Milk sold/worker, lbs.		376,237	616,151	699,456	999,961	1,217,261
Cows/worker		22	29	34	40	47
Labor cost/cow		\$1,199	\$1,070	\$810	\$856	\$815
Labor cost/tillable acre		\$284	\$303	\$284	\$431	\$429
<u>Profitability & Balance Sheet Analysis</u>						
Net farm income (without appreciation)		\$29,450	\$72,696	\$77,264	\$264,116	\$1,044,477
Labor & management income/operator		\$-2,780	\$17,243	\$10,485	\$71,814	\$270,468
Rate return on all capital with appreciation		0.9%	3.7%	2.8%	9.1%	10.6%
Farm debt/cow		\$3,152	\$3,217	\$3,003	\$3,148	\$3,561
Percent equity		80%	73%	76%	72%	67%

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

FARM BUSINESS CHART FOR SMALL TIESTALL/STANCHION DAIRY FARMS
13 Tiestall/Stanchion Dairy Farms with 60 or Less Cows, New York, 2013

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)
3.46	56	1,107,897	24,207	2.7	19	27	541,836
2.17	51	960,743	20,546	2.2	18	26	516,533
2.00	47	865,621	17,828	1.9	16	25	434,512
1.80	43	692,338	15,008	1.4	10	22	323,855
1.56	37	489,420	12,090	0.7	0	18	249,497

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)	
\$429	14%	\$482	\$1,540	\$626	\$4.64	
946	25	766	1,944	1,126	6.58	
1,072	29	1,091	2,326	1,265	7.66	
1,301	33	1,275	2,585	1,690	8.69	
1,604	40	1,437	2,797	1,891	9.38	

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)
\$5,179	\$12.43	\$21.75	\$67,973	\$1,345	\$35,038	\$114,591
4,454	14.08	25.08	47,346	1,078	13,655	55,745
3,806	15.36	28.69	35,926	734	5,340	11,833
3,230	17.49	33.80	22,936	502	-12,587	7,668
2,515	21.99	39.80	-8,125	-203	-38,785	-14,229

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

FARM BUSINESS CHART FOR LARGE TIESTALL/STANCHION DAIRY FARMS
10 Tiestall/Stanchion Dairy Farms with 60 or More Cows, New York, 2013

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)
4.16	127	3,057,738	26,350	3.4	22	48	971,679
3.67	88	1,800,277	22,660	2.8	17	33	701,912
2.95	74	1,544,981	21,339	2.4	16	31	614,768
2.40	72	1,508,254	19,425	1.9	14	24	521,095
1.71	67	1,251,433	16,325	0.0	0	20	415,908

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)	
\$923	22%	\$646	\$1,332	\$1,214	\$5.90	
1,178	25	861	1,641	1,495	7.10	
1,279	27	999	2,045	1,572	8.01	
1,352	32	1,101	2,406	1,958	9.52	
1,799	41	1,268	2,840	2,670	11.47	

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)
\$5,624	\$11.89	\$18.73	\$179,215	\$1,709	\$79,003	\$118,436
4,859	14.29	21.08	108,787	1,189	29,455	86,741
4,559	16.62	24.18	45,205	672	15,568	20,360
4,169	18.39	24.79	27,200	378	-10,367	12,371
3,320	19.92	27.38	3,073	34	-23,008	-2,819

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

FARM BUSINESS CHART FOR SMALL FREESTALL DAIRY FARMS

25 Freestall Barn Dairy Farms with 200 Cows or less, New York, 2013

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)
8.54	198	5,182,611	26,978	4.8	26	66	1,189,312
5.65	184	4,108,652	25,637	3.9	24	51	945,040
5.11	172	3,486,569	23,481	3.4	21	44	822,454
3.84	156	3,057,254	22,894	3.2	20	39	813,049
3.55	135	2,674,287	21,941	3.1	19	37	780,801
3.28	121	2,499,886	21,262	3.0	16	35	723,986
3.02	113	2,324,455	18,961	2.7	15	33	662,604
2.73	105	1,996,233	17,204	2.2	13	30	626,628
2.36	92	1,543,980	16,229	1.7	7	29	523,811
1.97	66	1,071,282	13,489	0.4	0	24	450,287

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)
\$810	22%	\$440	\$955	\$1,130	\$6.59
1,125	26	687	1,432	1,466	7.38
1,242	29	726	1,524	1,666	8.30
1,369	32	800	1,645	1,765	8.57
1,428	34	887	1,757	1,833	8.94
1,520	35	942	1,837	1,928	9.24
1,603	35	1,030	1,970	2,008	9.79
1,642	39	1,122	2,080	2,052	10.29
1,838	41	1,327	2,204	2,352	11.21
2,109	42	1,556	2,498	2,536	14.67

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)
\$5,805	\$13.62	\$19.71	\$214,078	\$1,381	\$94,226	\$224,269
5,411	14.47	21.15	175,114	1,147	67,023	168,631
5,108	15.58	21.66	134,065	1,079	44,869	111,075
5,045	16.23	22.96	119,630	898	34,128	89,941
4,652	17.41	23.89	104,117	789	20,833	78,262
4,531	18.83	24.41	78,069	646	10,324	34,995
4,242	19.41	25.64	51,551	502	3,964	3,699
3,839	20.89	25.95	26,617	183	-18,167	-8,284
3,490	21.53	26.60	9,167	70	-26,662	-15,825
3,067	23.01	32.80	-19,540	-256	-64,814	-61,809

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

FARM BUSINESS CHART FOR MEDIUM FREESTALL DAIRY FARMS
27 Freestall Barn Dairy Farms with 201-500 Cows, New York, 2013

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)
14.77	477	12,550,700	28,870	4.9	25	58	1,401,737
13.33	455	12,081,379	27,886	4.5	21	53	1,276,640
11.57	432	11,553,406	27,392	4.4	20	51	1,249,662
9.58	410	10,862,817	26,650	4.3	20	48	1,158,356
9.10	383	9,813,488	26,112	3.8	18	45	1,110,327
7.86	354	8,623,972	25,635	3.2	17	43	1,041,951
7.27	306	7,590,141	24,278	2.8	17	39	968,549
6.76	274	6,873,567	23,375	2.2	15	35	901,880
6.28	243	5,605,715	21,583	2.1	14	32	813,061
4.52	208	4,331,094	20,234	1.1	4	26	651,527

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)
\$1,397	26%	\$519	\$1,173	\$1,851	\$7.64
1,546	29	720	1,476	1,980	8.12
1,590	31	815	1,594	2,095	8.28
1,653	31	933	1,780	2,158	8.65
1,762	32	996	1,865	2,219	9.17
1,855	34	1,082	1,959	2,335	9.49
1,938	35	1,143	2,045	2,475	10.00
1,995	38	1,198	2,123	2,568	10.08
2,081	40	1,249	2,266	2,620	10.73
2,304	42	1,472	2,414	2,878	11.30

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)
\$6,412	\$12.87	\$18.08	\$634,175	\$1,802	\$349,137	\$820,315
6,089	14.33	19.21	548,498	1,446	215,578	496,142
5,990	14.91	19.78	460,254	1,313	139,493	402,840
5,791	15.98	20.25	394,614	1,169	114,077	320,293
5,591	17.21	21.18	269,957	867	92,263	265,454
5,470	17.76	22.24	212,745	608	49,457	214,014
5,300	18.52	22.91	185,326	545	27,034	151,222
4,940	19.81	23.29	134,985	459	8,785	108,126
4,696	20.12	23.64	92,762	239	-14,090	43,970
4,383	20.59	24.50	-8,631	-24	-83,573	-224

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

FARM BUSINESS CHART FOR LARGE FREESTALL DAIRY FARMS
84 Freestall Barn Dairy Farms with 500 or More Cows, New York, 2013

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)
48.18	2,383	64,332,803	29,179	5.6	24	60	1,630,655
33.09	1,641	41,898,886	27,625	4.9	22	54	1,438,723
27.36	1,283	34,752,619	27,280	4.5	21	51	1,316,944
25.38	1,145	29,300,359	26,861	4.2	20	49	1,243,736
22.71	1,033	26,938,645	26,391	3.9	19	47	1,200,316
20.30	938	24,566,699	26,068	3.7	18	45	1,176,314
18.61	834	21,980,430	25,460	3.4	17	43	1,130,905
17.09	722	18,454,170	24,866	3.2	16	42	1,089,213
14.41	648	16,301,578	24,217	2.7	14	40	1,024,313
12.06	549	13,330,311	22,272	1.8	9	35	867,591

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)
\$1,310	25%	\$595	\$1,256	\$1,728	\$7.20
1,572	28	732	1,487	1,982	7.78
1,673	30	790	1,591	2,125	8.23
1,759	31	853	1,672	2,190	8.55
1,830	33	911	1,705	2,286	8.85
1,886	34	951	1,750	2,356	9.12
1,942	35	977	1,827	2,424	9.35
2,024	36	1,033	1,917	2,510	9.65
2,122	38	1,117	2,028	2,635	9.84
2,368	40	1,309	2,218	2,883	10.43

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)
\$6,269	\$13.75	\$17.61	\$2,935,571	\$1,710	\$989,685	\$2,511,238
6,101	14.52	18.48	1,741,280	1,484	585,613	1,590,073
5,968	15.21	18.97	1,458,569	1,329	454,127	1,117,485
5,826	15.74	19.52	1,220,876	1,156	399,604	896,084
5,721	16.49	19.87	996,019	1,015	290,737	755,529
5,623	17.05	20.29	800,145	869	218,982	591,616
5,507	17.57	20.83	668,442	745	179,204	436,312
5,363	18.07	21.51	489,892	578	106,230	211,942
5,122	18.67	22.19	306,009	400	13,934	23,231
4,799	19.77	23.79	148,587	180	-104,180	-511,443

*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: _____

Needs improvement: _____

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.

INDEX

	<u>Page(s)</u>		<u>Page(s)</u>
Accounts Payable	5,10	Income Statement	4
Accounts Receivable	6,10	Inflows	13
Accrual Expenses	5,7	Interest Expense Ratio	22
Accrual Receipts	6,7	Labor & Management Income	8
Acreage	18	Labor & Management Income Per Operator	8
Advanced Government Receipts	9,10	Labor Efficiency	22
Age	20	Land Resources	18
Amount Available for Debt Service	15	Leverage Ratio	11
Annual Cash Flow Statement	13	Liquidity	11
Appreciation	7,12,20	Lost Capital	11
Asset Turnover Ratio	22	Machinery Expenses	5,19
Balance Sheet	10	Milking Frequency	4
Barn Type	4	Milk Production	20
Business Type	4	Milking System	4
Capital Efficiency	22	Money Borrowed	13
Cash From Nonfarm Capital Used in the Business	13	Net Farm Income	16
Cash Flow Coverage Ratio	15	Net Farm Income from Operations Ratio	9
Cash Paid	4	Net Investment	11
Cash Receipts	6,13	Net Milk Receipts	21
Certified Organic Milk Producer	4	Net Worth	10
Change in Accounts Payable	5	Number of Cows	20
Change in Accounts Receivable	6	Operating Costs of Producing Milk	21
Change in Inventory	4,5	Operating Expense Ratio	22
Change in Net Worth	12	Opportunity Cost	8
Cost of Term Debt	11	Other Livestock Expenses	5
Crop Expenses	5,19	Outflows	13
Crop/Dairy Ratios	18	Part-Time Cash-Crop Dairy (farm)	4
Current Portion	9,10	Part-Time Dairy (farm)	4
Current Ratio	11	Percent Equity	10,11
Dairy (farm)	4	Personal Withdrawals and Family Expenditures Including Nonfarm Debt Payments	13
Dairy Cash-Crop (farm)	4	Principal Payments	13
Debt Coverage Ratio	15	Profitability	6
Debt per Cow	11	Purchased Inputs Cost	21
Debt to Asset Ratios	11	Receipts	6
Deferred Taxes	10	Record System	4
Depreciation	5,11	Repayment Analysis	15
Depreciation Expense Ratio	20	Replacement Livestock	5
Dry Matter	18	Retained Earnings	12
Education	22	Return on Equity Capital	9
Equity Capital	9	Return on Total Capital	9
Expansion Livestock	5,13	Rotational Grazing	4,19
Expenses	5	Solvency	11
Farm Business Chart	26,30-31,35-39	Total Costs of Producing Milk	21
Farm Debt Payments as Percent of Milk Sales	15	Whole Farm Method	21
Farm Debt Payments Per Cow	15	Worker Equivalent	22
Financial Analysis Chart	29	Working Capital	11
Financial Lease	10	Yields Per Acre	18

OTHER A.E.M. EXTENSION BULLETINS

EB No	Title	Fee (if applicable)	Author(s)
2015-08	Dairy Farm Business Summary, Northern New York Region, 2014	(\$16.00)	Knoblauch, W.A., Dymond, C., Karszes, J., Howland, E., Murray, P., Buxton, S. and R. Kimmich
2015-07	Dairy Farm Business Summary, Hudson and Central New York Region, 2014	(\$16.00)	Knoblauch, W.A., Dymond, C., Karszes, J., Howland, E., Buxton, S., Kiraly, M., Kimmich, R. and K. Shoen
2015-06	Dairy Farm Business Summary, Western New York Region, 2014	(\$16.00)	Knoblauch, W.A., Dymond, C., Karszes, J., Howland, B., Hanchar, J., Petzen, J., Stoll, K. and R. Kimmich
2015-05	Dairy Farm Business Summary, New York Large Herd Farms, 300 Cows or Larger, 2014	(\$20.00)	Karszes, J., Knoblauch, W.A. and C. Dymond
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