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DAIRY FARM BUSINESS SUMMARY

NEW YORK SMALL HERD FARMS, 140 COWS OR FEWER, 2013



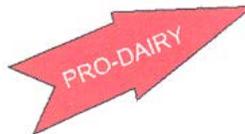
*You can't manage what you can't measure.
But if you measure it, you can improve it!*

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2013 DAIRY FARM BUSINESS SUMMARY
Small Herd Dairy Farms
140 Cows or Fewer
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2013 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 2013 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 2013 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 2013. This report was written by Wayne A. Knoblauch, Professor, Farm Management; Mariane Kiraly, Cooperative Extension Educator in Delaware County; and Jason Karszes, Senior Extension Associate, Pro-Dairy. Cathryn Dymond was in charge of data and publication preparation.

PROGRESS OF THE FARM BUSINESS

2013 marked the start of a major recovery in dairy profitability with mitigating purchased grain costs combined with rising milk prices making for larger margins. Input costs other than feed continued to increase, limiting profitability.

The same 33 farms participated in both 2012 and 2013 for this report. Average farm size stayed at 78 cows while heifer inventory decreased by 3.2% or 2 animals. Tillable acres rose 4.1% or 10 acres in an effort to make more forage or reduce the effects of poor weather by working more land. Hay DM ton/acres rose 9.5% reflecting favorable weather conditions; while corn silage/acre decreased 3.6% to 16.2 tons/acres with wet weather hampering yields. Milk sold per cow increased 3.1% likely due to lower purchased feed costs and abundant quality hay. Worker equivalents rose 1.6% reflecting the need for more help with more funding available. Cows per worker stayed the same at 31. Milk sold/worker rose by 1.6% to 621,479 lbs.

Hired labor cost per hundredweight rose 4.2% percent from \$1.18 to \$1.23, reflecting an increase in cost of benefits and a need to be competitive in compensation. Hired labor cost/worker rose 4.2% as well to \$27,052. Hired labor as a percent of milk sales dropped 3.4% reflecting higher milk prices and more milk/worker.

Grain and concentrate purchased as a percent of milk sales decreased 11.4% from 35% to 31%. Grain and concentrate per hundredweight of milk decreased from \$6.87 per hundredweight to \$6.66 per hundredweight or 3.1%. Dairy feed and crop expense/cwt decreased 2.1% in response to lower purchased feed expenses. Total farm operating expenses per hundredweight decreased only .7% from \$19.17 to \$19.14 illustrating the fact that overhead costs associated with milk production continue to rise. Interest costs rose 10.9%, driven by more borrowing to cover capital purchases. Milk marketing costs fell 2.6% with lower fuel and transportation costs passed on to farmers by haulers. The operating cost of producing milk per hundredweight rose 5.6% from \$15.06 to \$15.90 as costs of supplies, machinery repairs, breeding and vet expenses, bedding and other livestock expenses continue to go up.

Farm capital per cow increased 8.4 percent to \$11,805 and machinery and equipment per cow was up 1.9% with new investments for replacement of equipment, increases in land values and increases in livestock values. A decrease of 4.4% in equipment turnover shows that more repairs are being made to extend the life of expensive pieces of equipment.

Gross sales per hundredweight rose from \$19.87 to \$21.65 per hundredweight, or 9%. Gross milk sales per cow rose 12.3% from \$3,875 per cow to \$4,351 due to higher milk prices and more 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 \$275 to \$326, an increase of 18.6%. Calf sales per cow increased a whopping 380% from \$5 to \$24. A decrease in government receipts from \$0.84 per hundredweight to \$0.62 per hundredweight was due to few MILC payments.

Net farm income without appreciation rose from \$47,913 to \$63,626, a 32.8.2% increase. Net farm income with appreciation rose just 1.1% to \$76,879. Labor and management income per operator jumped from \$2,883 to \$17,352 or 501.9%. A positive rate of return on equity of 3.2% was a relief to many after such low returns since 2009. The rate of return on all capital with appreciation was 3.4%. Farm net worth continues to rise (6.8%) due to an increase in land values, livestock value and other farm investments. Farm debt per cow grew 9.9% from \$2,901 to \$3,188 as farmers tried to keep up with capital investments.

2013 was a time for a recovery from several years of negative returns. Higher milk prices, lower feed prices made margins tolerable. However, increased costs for fuel, machinery and repairs, higher labor and crop production costs all add up to make dairy farming a real tough business to provide for family living and return to labor and management.

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

PROGRESS OF THE FARM BUSINESS
Same 33 Small Herd Dairy Farms, 2012 & 2013

Selected Factors	Average of 33 Farms		Percent Change
	2012	2013	
<u>Size of Business</u>			
Average number of cows	78	78	0.0
Average number of heifers	63	61	-3.2
Milk sold, pounds	1,523,502	1,572,342	3.2
Worker equivalent	2.49	2.53	1.6
Total tillable acres	245	255	4.1
<u>Rates of Production</u>			
Milk sold per cow, pounds	19,502	20,096	3.1
Hay DM per acre, tons	2.1	2.3	9.5
Corn silage per acre, tons	16.8	16.2	-3.6
<u>Labor Efficiency & Costs</u>			
Cows per worker	31	31	0.0
Milk sold per worker, pounds	611,848	621,479	1.6
Hired labor cost per hundredweight	\$1.18	\$1.23	4.2
Hired labor cost per worker	\$25,971	\$27,052	4.2
Hired labor cost as % of milk sales	5.9%	5.7%	-3.4
<u>Cost Control</u>			
Grain & concentrate purchased as % of milk sales	35%	31%	-11.4
Grain & concentrate per hundredweight milk	\$6.87	\$6.66	-3.1
Dairy feed & crop expense per cwt. milk	\$8.68	\$8.50	-2.1
Labor & machinery costs per cow	\$1,894	\$1,855	-2.1
Total farm operating expenses per cwt. sold	\$19.17	\$19.04	-0.7
Interest costs per hundredweight milk	\$0.55	\$0.61	10.9
Milk marketing costs per cwt. milk sold	\$1.14	\$1.11	-2.6
Operating cost of producing cwt. of milk	\$15.06	\$15.90	5.6
<u>Capital Efficiency (average for the year)</u>			
Farm capital per cow*	\$10,888	\$11,805	8.4
Machinery & equipment per cow	\$2,318	\$2,363	1.9
Asset turnover ratio*	0.46	0.44	-4.4
<u>Income Generation</u>			
Gross milk sales per cow	\$3,875	\$4,351	12.3
Gross milk sales per hundredweight	\$19.87	\$21.65	9.0
Net milk sales per hundredweight	\$18.73	\$20.54	9.7
Dairy cattle sales per cow	\$275	\$326	18.6
Dairy calf sales per cow	\$5	\$24	380.0
Government receipts per hundredweight	\$0.84	\$0.62	-26.2
<u>Profitability</u>			
Net farm income without appreciation	\$47,913	\$63,626	32.8
Net farm income with appreciation	\$76,050	\$76,879	1.1
Labor & management income per oper./manager	\$2,883	\$17,352	501.9
Rate of return on equity capital with appreciation	2.8%	3.2%	14.3
Rate of return on all capital with appreciation	3.1%	3.4%	9.7
<u>Financial Summary</u>			
Farm net worth, end year	\$658,326	\$703,229	6.8
Debt to asset ratio	0.26	0.27	3.9
Farm debt per cow	\$2,901	\$3,188	9.9

*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

41 Small Herd Dairy Farms, 2013

Type of Farm	Number	Milking System	Number
Dairy	41	Bucket & carry	0
Part-time dairy	0	Dumping station	1
Dairy cash-crop	0	Pipeline	26
Certified organic milk producer	0	Herringbone parlor	9
Rotational grazing farms	12	Other parlor	5
Type of Ownership	Number	Production Records	Number
Owner	37	Testing service	32
Renter	4	On-farm system	2
		Other	1
Type of Business	Number	None	6
Sole Proprietorship	31	Business Record System	Number
Partnership	5	Account Book	15
LLC	4	Accounting Service	4
Type of Barn	Number	On-farm computer	20
Stanchion or Tie-Stall	25	Other	2
Freestall	15		
Combination	0	Breed of Herd	Percent
Milking Frequency	Number	Holstein	82
2 times per day	38	Jersey	7
3 times per day	2	Other	11
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 2013.

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

41 Small Herd Dairy Farms, 2013

Expense Item	Cash Paid	-	Change in Inventory or Prepaid Expense	+	Change in Accounts Payable	=	Accrual Expenses
<u>Hired Labor</u>	\$ 22,436	\$	-101	<<	\$ -88	\$	22,449
<u>Feed</u>							
Dairy grain & concentrate	106,555		3,158		-2,226		101,170
Dairy roughage	5,641		750		-345		4,546
Nondairy	0		0		0		0
Professional nutritional services	0		0	<<	0		0
<u>Machinery</u>							
Machinery hire, rent & lease	9,710		0	<<	-65		9,644
Machinery repairs & farm vehicle exp.	20,165		-112		-615		19,662
Fuel, oil & grease	16,137		2		-91		16,044
<u>Livestock</u>							
Replacement livestock	4,403		0	<<	341		4,744
Breeding	4,973		-46		-9		5,010
Veterinary & medicine	7,422		5		-166		7,252
Milk marketing	17,507		0	<<	7		17,515
Bedding	3,581		-2		-39		3,545
Milking supplies	7,996		12		-101		7,883
Cattle lease & rent	82		0	<<	0		82
Custom boarding	763		0	<<	0		763
bST	467		7		0		459
Livestock professional fees	1,737		-62	<<	0		1,800
Other livestock expense	2,588		5		-31		2,552
<u>Crops</u>							
Fertilizer & lime	11,966		-15		-528		11,453
Seeds & plants	7,490		-44		-104		7,430
Spray, other crop expense	4,540		99		0		4,440
Crop professional fees	157		0	<<	0		157
<u>Real Estate</u>							
Land, building & fence repair	4,296		-13		142		4,451
Taxes	8,225		0	<<	-166		8,059
Rent & lease	4,712		0	<<	0		4,712
<u>Other</u>							
Insurance	5,398		0	<<	-12		5,386
Utilities (farm share)	10,552		0	<<	-16		10,536
Interest paid	9,071		0	<<	0		9,071
Other professional fees	2,154		0	<<	0		2,154
Miscellaneous	2,098		22		0		2,076
Total Operating	\$302,820		\$3,664		\$-4,110		\$295,046
Expansion livestock	307		0	<<	0		307
Extraordinary expense	2,567		0	<<	0		2,567
Machinery depreciation							19,348
Building depreciation							4,676
TOTAL ACCRUAL EXPENSES							\$321,944

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 2013 but not paid for. A decrease is subtracted because it represents payment for resources used before 2013.

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

41 Small Herd Dairy Farms, 2013

Receipt Item	Cash Receipts	+	Change in Inventory	+	Change in Accounts Receivable	=	Accrual Receipts
Milk sales	\$ 328,858				\$ 1,993		\$ 330,851
Dairy cattle	20,049	\$	5,437		-58		25,428
Dairy calves	1,913		-491		0		1,422
Other livestock	737		10		0		747
Crops	3,155		656		307		4,118
Government receipts	7,896		0 *		1,548		9,444
Custom machine work	989				0		989
Gas tax refund	25				0		25
Other	<u>6,453</u>				<u>-118</u>		6,335
Less nonfarm noncash capital**		(-)	<u>0</u> **			(-)	<u>0</u>
Total Receipts	\$ 370,075		\$ 5,612		\$ 3,672		\$ 379,359

*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 2013 for the 2014 crop year in excess of funds earned for 2013. Likewise, a decrease is added to cash government receipts because it represents funds earned for 2013 but received in 2012.

Changes in accounts receivable are calculated by subtracting beginning year balances from end year balances. Payments in January 2014 for milk produced in December 2013 compared to January 2013 payments for milk produced in 2012 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.

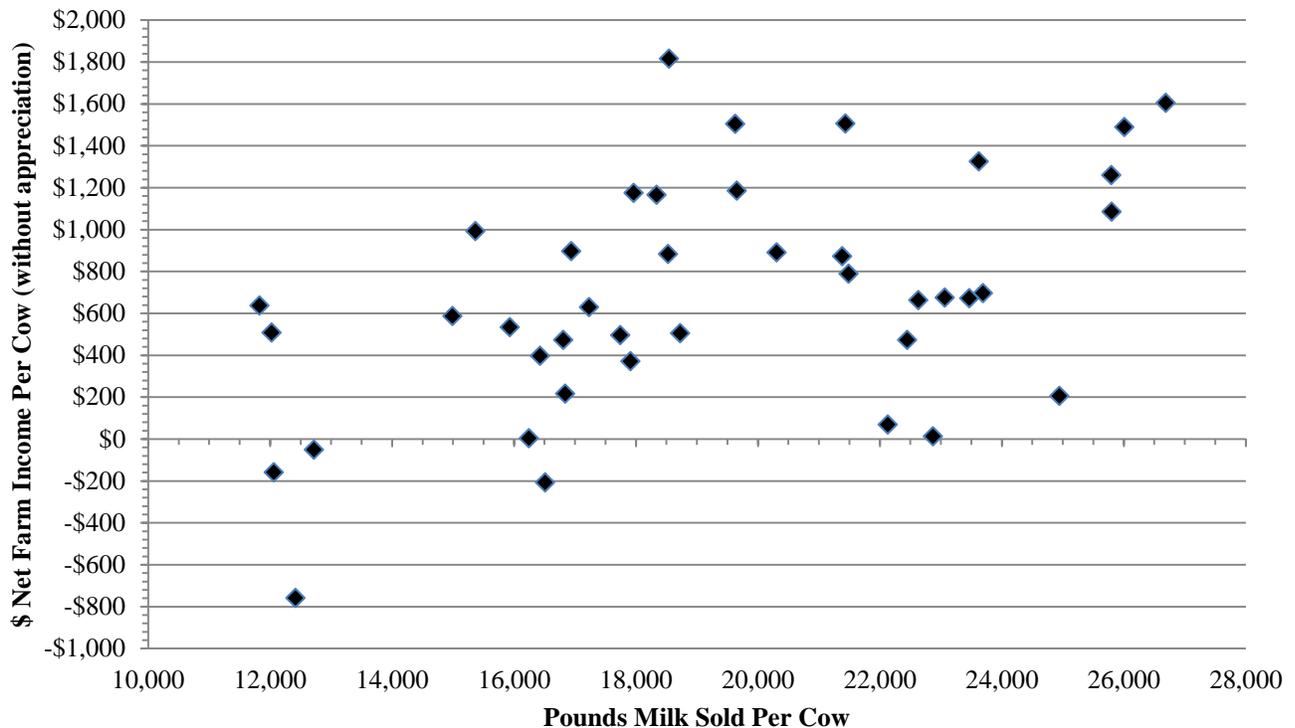
NET FARM INCOME
41 Small Herd Dairy Farms, 2013

Item	Average 41 Farms		Top 50% Farms*	
	Total	Per Cow	Total	Per Cow
Total accrual receipts	\$ 379,359		\$ 503,254	
Appreciation: Livestock	2,778		3,440	
Machinery	-230		-1,346	
Real Estate	12,319		10,758	
Other Stock & Certificates	<u>-65</u>		<u>-228</u>	
Total Including Appreciation	\$ 394,161		\$ 515,878	
Total accrual expenses	- 321,944		- 404,246	
Net Farm Income (with appreciation)	\$ 72,217	\$ 933	\$ 111,632	\$1,193
Net Farm Income (without appreciation)	\$ 57,415	\$ 742	\$ 99,008	\$1,058

*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
41 Small Herd Dairy Farms, 2013



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.

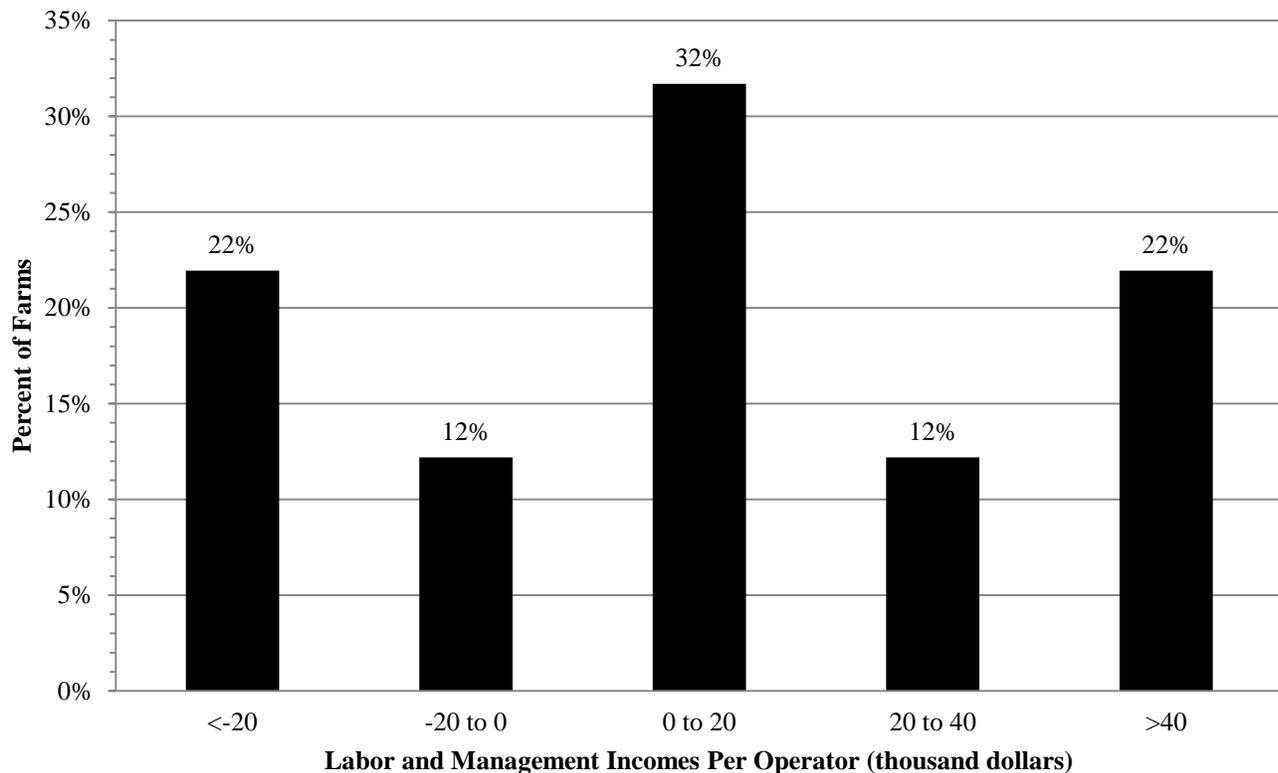
LABOR AND MANAGEMENT INCOME

41 Small Herd Dairy Farms, 2013

Item	Average 41 Farms	Top 50% Farms
Net farm income without appreciation	\$ 57,415	\$ 99,008
Family labor unpaid @ \$2,600 per month	- 7,337	- 7,800
Interest on \$715,218 average equity capital @ 5% real rate (\$782,218 average equity capital for top 50% farms)	- <u>35,031</u>	- <u>37,614</u>
Labor & Management Income per farm (1.33 operators per farm) (1.33 operators per farm for top 50% farms)	\$ 15,047	\$ 53,594
Labor & Management Income per Operator/Manager	\$ 11,314	\$ 40,296

Labor and management income per operator averaged \$11,314 on these 41 farms in 2013. The range in labor and management income per operator was from less than \$-61,000 to more than \$110,000. Returns to labor and management were less than \$0 on 34 percent of the farms. Labor and management incomes per operator were between \$0 and \$40,000 on 44 percent of the farms while 22 percent had labor and management incomes per operator greater than \$40,000.

DISTRIBUTION OF LABOR & MANAGEMENT INCOMES PER OPERATOR 41 Small Herd Dairy Farms, 2013



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
41 Small Herd Dairy Farms, 2013

Item	Average 41 Farms	Top 50% Farms
Net farm income with appreciation	\$ 72,217	\$ 111,632
Family labor unpaid @ \$2,600 per month	- 7,337	- 7,800
Value of operators' labor & management	- <u>47,878</u>	- <u>47,425</u>
Return on equity capital with appreciation	\$ 17,002	\$ 56,407
Interest paid	+ <u>9,071</u>	+ <u>10,471</u>
Return on total capital with appreciation	\$ 26,073	\$ 66,878
Return on equity capital without appreciation	\$ 2,200	\$ 43,783
Return on total capital without appreciation	\$ 11,271	\$ 54,254
Rate of return on average equity capital:		
with appreciation	2.4%	7.2%
without appreciation	0.3%	5.6%
Rate of return on average total capital:		
with appreciation	2.8%	6.4%
without appreciation	1.2%	5.2%
Net farm income from operations ratio	0.15	0.20

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 2013, lease payments were discounted by 7 percent to obtain their present value.

Advanced government receipts are included as current liabilities. Government payments received in 2013 that are for participation in the 2014 program are the end year balance and payments received in 2012 for participation in the 2013 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.

2013 FARM BUSINESS & NONFARM BALANCE SHEET

41 Small Herd Dairy Farms, 2013

Farm Assets	Jan. 1	Dec. 31	Farm Liabilities & Net Worth	Jan. 1	Dec. 31
<u>Current</u>			<u>Current</u>		
Farm cash, checking & savings	\$ 9,557	\$ 13,223	Accounts payable	\$ 12,888	\$ 8,779
Accounts receivable	25,217	28,889	Operating debt	7,330	8,362
Prepaid expenses	164	0	Short Term	2,674	2,792
Feed & supplies	78,538	83,023	Advanced govt. receipts	0	0
			Current Portion:		
			Intermediate	17,320	21,707
			Long Term	<u>4,587</u>	<u>6,545</u>
Total Current	\$ 113,476	\$ 125,134	Total Current	\$ 44,798	\$ 48,185
<u>Intermediate</u>			<u>Intermediate</u>		
Dairy cows:			Structured debt		
owned	\$ 109,564	\$ 113,903	1-10 years	\$ 125,473	\$ 88,833
leased	154	80	Financial lease		
Heifers	55,370	58,266	(cattle/machinery)	154	210
Bulls & other livestock	2,222	2,720	Farm Credit stock	<u>654</u>	<u>602</u>
Mach. & equip. owned	193,715	200,015	Total Intermediate	\$ 126,280	\$ 89,646
Mach. & equip. leased	0	130			
Farm Credit stock	654	602			
Other stock/certificate	<u>14,631</u>	<u>15,287</u>			
Total Intermediate	\$ 376,309	\$ 391,004			
<u>Long Term</u>			<u>Long Term</u>		
Land & buildings:			Structured debt		
owned	\$ 419,626	\$ 457,544	>10 years	\$ 69,460	\$ 100,265
leased	<u>0</u>	<u>0</u>	Financial lease		
Total Long Term	\$ 419,626	\$ 457,544	(structures)	<u>0</u>	<u>0</u>
			Total Long Term	\$ 69,460	\$ 100,265
Total Farm Assets	\$ 909,410	\$ 973,682	Total Farm Liabilities	\$ 240,539	\$ 238,096
			FARM NET WORTH	\$ 668,872	\$ 735,586

Nonfarm Assets, Liabilities & Net Worth (Average of 18 farms reporting)

Assets	Jan. 1	Dec. 31	Liabilities & Net Worth	Jan. 1	Dec. 31
Personal cash, checking & savings	\$ 22,564	\$ 15,025	Nonfarm Liabilities	\$ 6,074	\$ 5,008
Cash value life insurance	12,923	15,882			
Nonfarm real estate	16,167	16,167			
Auto (personal share)	8,706	9,094			
Stocks & bonds	47,940	67,354			
Household furnishings	8,889	8,367			
All other nonfarm assets	<u>4,717</u>	<u>4,489</u>			
Total Nonfarm Assets	\$121,905	\$136,378	NONFARM NET WORTH	\$115,831	\$131,371

Farm & Nonfarm Assets, Liabilities, and Net Worth*	Jan. 1	Dec. 31
Total Assets	\$ 1,031,315	\$ 1,110,060
Total Liabilities	<u>246,613</u>	<u>243,104</u>
TOTAL FARM & NONFARM NET WORTH	\$ 784,702	\$ 866,956

*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
41 Small Herd Dairy Farms, 2013

Item	Average 41 Farms		Top 50% Farm	
<u>Financial Ratios - Farm:</u>				
Percent equity		76%		74%
Debt/asset ratio: total		0.24		0.26
long-term		0.22		0.24
intermediate/current		0.27		0.27
Leverage ratio		0.32		0.35
Current ratio		2.60		2.56
Working capital	\$76,949	As % of total Expenses:	\$96,086	24%
<u>Farm Debt Analysis:</u>				
Accounts payable as % of total debt		4%		4%
Long-term liabilities as a % of total debt		42%		42%
Current & intermediate liabilities as a % of total debt		58%		58%
Cost of term debt (weighted average)		3.4%		3.4%
<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	\$3,023	\$1,872	\$2,985	\$2,134
Long-term debt	1,273	788	1,244	889
Intermediate & long term	2,411	1,493	2,332	1,667
Intermediate & current debt	1,750	1,083	1,742	1,245

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
41 Small Herd Dairy Farms, 2013

Item	Average 41 Farms			
	Real Estate		Machinery & Equipment	
Value beginning of year	\$	419,626	\$	193,715
Purchases	\$	36,474*	\$	28,154
Gift & inheritance	+	366	+	0
Lost capital	-	3,993	-	2,274
Sales	-	2,573	-	19,348
Depreciation	-	4,676	-	19,348
Net investment	=	25,599	=	6,531
Appreciation	+	12,319	+	-230
Value end of year	\$	457,544	\$	200,015

*\$22,517 land and \$13,957 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)

41 Small Herd Dairy Farms, 2013

Item	Average 41 Farms	Top 50% Farms
Beginning of year farm net worth	\$694,850	\$751,904
Net farm income without appreciation	\$ 57,415	\$ 99,008
+Nonfarm cash income	+ 5,355	+ 6,354
-Personal withdrawals & family expenditures excluding nonfarm borrowings	<u>- 45,303</u>	<u>- 55,650</u>
RETAINED EARNINGS	+ \$ 17,467	+ \$ 49,711
Nonfarm noncash transfers to farm	\$ 366	\$ 750
+Cash used in business from nonfarm capital	+ 10,285	+ 5,174
-Note or mortgage from farm real estate sold (nonfarm)	<u>- 0</u>	<u>- 0</u>
CONTRIBUTED/WITHDRAWN CAPITAL	+ \$ 10,651	+ \$ 5,924
Appreciation	\$ 14,802	\$ 12,624
-Lost capital	<u>- 3,993</u>	<u>- 7,525</u>
CHANGE IN VALUATION EQUITY	+ \$ 10,809	+\$ 5,099
IMBALANCE/ERROR	<u>- \$ -1,808</u>	<u>- \$ 106</u>
End of year net worth*	= \$ 735,586	=\$ 812,532
<u>Change in Net Worth</u>		
Without appreciation	\$25,934	\$48,005
With appreciation	\$40,736	\$60,629

*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

41 Small Herd Dairy Farms, 2013

Item	Average 41 Farms	
<u>Cash Flow from Operating Activities</u>		
Cash farm receipts	\$ 370,075	
- Cash farm expenses	302,820	
- Extraordinary expense	<u>2,567</u>	
= Net cash farm income		\$ 64,688
Personal withdrawals & family expenses including nonfarm debt payments	\$ 45,397	
- Nonfarm income	<u>5,355</u>	
- Net cash withdrawals from the farm		<u>\$ 40,041</u>
= Net Provided by Operating Activities		\$ 24,647
<u>Cash Flow From Investing Activities</u>		
Sale of assets: machinery	\$ 2,274	
+ real estate	2,573	
+ other stock & cert.	<u>0</u>	
= Total asset sales		\$ 4,848
Capital purchases: expansion livestock	\$ 307	
+ machinery	28,154	
+ real estate	36,474	
+ other stock & cert.	<u>721</u>	
- Total invested in farm assets		<u>\$ 65,657</u>
= Net Provided by Investment Activities		\$ -60,809
<u>Cash Flow From Financing Activities</u>		
Money borrowed (intermediate & long term)	\$ 66,906	
+ Money borrowed (short term)	3,433	
+ Increase in operating debt	1,032	
+ Cash from nonfarm capital used in business	10,285	
+ Money borrowed - nonfarm	<u>94</u>	
= Cash inflow from financing		\$ 81,750
Principal payments (intermediate & long term)	\$ 40,419	
+ Principal payments (short term)	3,315	
+ Decrease in operating debt	<u>0</u>	
- Cash outflow for financing		<u>\$ 43,733</u>
= Net Provided by Financing Activities		\$ 38,017
<u>Cash Flow From Reserves</u>		
Beginning farm cash, checking & savings		\$ 9,557
- Ending farm cash, checking & savings		<u>13,223</u>
= Net Provided from Reserves		\$ -3,666
Imbalance (error)		<u>\$ -1,811</u>

ANNUAL CASH FLOW STATEMENT
Top 50% Small Herd Dairy Farms, 2013

Item	Top 50% Farms	
<u>Cash Flow from Operating Activities</u>		
Cash farm receipts	\$ 483,690	
- Cash farm expenses	378,867	
- Extraordinary expense	<u>1,362</u>	
= Net cash farm income		\$ 103,461
Personal withdrawals & family expenses including nonfarm debt payments	\$ 55,650	
- Nonfarm income	<u>6,354</u>	
- Net cash withdrawals from the farm		\$ <u>49,297</u>
= Net Provided by Operating Activities		\$ 54,164
<u>Cash Flow From Investing Activities</u>		
Sale of assets: machinery	\$ 1,338	
+ real estate	3,025	
+ other stock & cert.	<u>0</u>	
= Total asset sales		\$ 4,363
Capital purchases: expansion livestock	\$ 630	
+ machinery	34,263	
+ real estate	65,600	
+ other stock & cert.	<u>1,456</u>	
- Total invested in farm assets		\$ <u>101,949</u>
= Net Provided by Investment Activities		\$ -97,587
<u>Cash Flow From Financing Activities</u>		
Money borrowed (intermediate & long term)	\$ 78,339	
+ Money borrowed (short term)	7,013	
+ Increase in operating debt	1,600	
+ Cash from nonfarm capital used in business	5,174	
+ Money borrowed - nonfarm	<u>0</u>	
= Cash inflow from financing		\$ 92,126
Principal payments (intermediate & long term)	\$ 36,862	
+ Principal payments (short term)	6,432	
+ Decrease in operating debt	<u>0</u>	
- Cash outflow for financing		\$ <u>43,294</u>
= Net Provided by Financing Activities		\$ 48,833
<u>Cash Flow From Reserves</u>		
Beginning farm cash, checking & savings		\$ 13,512
- Ending farm cash, checking & savings		<u>18,824</u>
= Net Provided from Reserves		\$ -5,312
Imbalance (error)		\$ 99

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 2014. The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to planned 2014 debt payments shown below.

FARM DEBT PAYMENTS PLANNED

Small Herd Dairy Farms, 2012 & 2013

Debt Payments	Same 33 Dairy Farms			Same 16 Top 50% Farms		
	2013 Payments		Planned 2014	2013 Payments		Planned 2014
	Planned	Made		Planned	Made	
Long-term	\$ 8,244	\$ 13,193	\$ 11,658	\$ 8,768	\$ 8,927	\$ 12,074
Intermediate-term	31,246	39,569	26,558	37,158	36,365	31,914
Short-term	714	4,271	1,890	1,173	8,280	3,531
Operating (net reduction)	508	2,127	375	625	2,274	750
Accounts payable (net reduction)	0	6,196	0	0	2,478	0
Total	\$ 40,712	\$ 65,355	\$ 40,480	\$ 47,724	\$ 58,323	\$ 48,269
Per cow	\$ 520	\$ 835		\$ 500	\$ 611	
Per cwt. 2013 milk	\$ 2.59	\$ 4.16		\$ 2.35	\$ 2.87	
Percent of total 2013 receipts	11%	17%		10%	11%	
Percent of 2013 milk receipts	12%	19%		11%	13%	

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 2013 (as of December 31, 2012) that could have been made with the amount available for debt service in 2013. Farmers who did not participate in DFBS in 2012 have their 2013 cash flow coverage ratio based on planned debt payments for 2014.

COVERAGE RATIOS

Same 33 Small Herd Dairy Farms, 2012 & 2013

Item	Average	Item	Average
<u>Cash Flow Coverage Ratio</u>		<u>Debt Coverage Ratio</u>	
Cash farm receipts	\$382,136	Net farm income (without appreciation)	\$63,626
- Cash farm expenses	308,332	+ Depreciation	23,754
+ Interest paid (cash)	9,564	+ Interest paid (accrual)	9,564
- Net personal withdrawals from farm*	41,487	- Net personal withdrawals from farm*	41,487
(A) = Amount Available for Debt Service	\$ 41,881	(A') = Repayment Capacity	\$55,456
(B) = Debt Payments Planned for 2013 (as of December 31, 2012)	\$ 40,712	(B) = Debt Payments Planned for 2013 (as of December 31, 2012)	\$40,712
(A/B)= Cash Flow Coverage Ratio for 2013	1.03	(A'/B)= Debt Coverage Ratio for 2013	1.36

Same 16 Top 50% Dairy Farms, 2012 & 2013			
(A) = Amount Available for Debt Service	\$70,026	(A') = Repayment Capacity	\$93,343
(B) = Debt Payments Planned for 2013	\$47,724	(B) = Debt Payments Planned for 2013	\$47,724
(A/B)= Cash Flow Coverage Ratio for 2013	1.47	(A'/B)= Debt Coverage Ratio for 2013	1.96

*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
41 Small Herd Dairy Farms, 2013

Item	Average 41 Farms		
	Per Cow	Per Cwt.	Total
Number cows and cwt. milk	77	15,344	
<u>Accrual Operating Receipts</u>			
Milk	\$4,275	\$21.56	\$330,851
Dairy cattle	329	1.66	25,428
Dairy calves	18	0.09	1,422
Other livestock	10	0.05	747
Crops	53	0.27	4,118
Miscellaneous receipts	<u>217</u>	<u>1.09</u>	<u>16,793</u>
Total	\$4,902	\$24.72	\$379,359
<u>Accrual Operating Expenses</u>			
Hired labor	\$ 290	\$ 1.46	\$ 22,449
Dairy grain & concentrate	1,307	6.59	101,170
Dairy roughage	59	0.30	4,546
Nondairy feed	0	0.00	0
Professional nutritional services	0	0.00	0
Machinery hire/rent/lease	125	0.63	9,644
Machinery repair & farm vehicle expense	254	1.28	19,662
Fuel, oil & grease	207	1.05	16,044
Replacement livestock	61	0.31	4,744
Breeding	65	0.33	5,010
Veterinary & medicine	94	0.47	7,252
Milk marketing	226	1.14	17,515
Bedding	46	0.23	3,545
Milking supplies	102	0.51	7,883
Cattle lease	1	0.01	82
Custom boarding	10	0.05	763
bST expense	6	0.03	459
Livestock professional fees	23	0.12	1,800
Other livestock expense	33	0.17	2,552
Fertilizer & lime	148	0.75	11,453
Seeds & plants	96	0.48	7,430
Spray & other crop expenses	57	0.29	4,440
Crop professional fees	2	0.01	157
Land, building, fence repair	58	0.29	4,451
Taxes	104	0.53	8,059
Real estate rent/lease	61	0.31	4,712
Insurance	70	0.35	5,386
Utilities	136	0.69	10,536
Other professional fees	28	0.14	2,154
Miscellaneous	<u>27</u>	<u>0.14</u>	<u>2,076</u>
Total Less Interest Paid	\$3,695	\$18.64	\$285,975
<u>Net Accrual Operating Income (without interest paid)</u>	1,207	6.09	93,384
- Change in livestock/crop inventory*	73	0.37	5,612
- Change in accounts receivable	47	0.24	3,672
- Change in feed/supply inventory**	47	0.24	3,664
+ Change in accts. payable***	<u>-53</u>	<u>-0.27</u>	<u>-4,110</u>
NET CASH FLOW	\$ 986	\$ 4.97	\$ 76,326
- Net personal withdrawals from farm (see footnote on p. 15)	<u>483</u>	<u>2.44</u>	<u>37,411</u>
Available for Farm Debt Payments & Investments	\$ 503	\$ 2.54	\$ 38,915
- Farm debt payments	<u>771</u>	<u>3.89</u>	<u>59,644</u>
Available for Farm Investment	\$ -268	\$ -1.35	\$ -20,729
- Capital purchases: cattle, machinery & improvements	<u>848</u>	<u>4.28</u>	<u>65,657</u>
Additional Capital Needed	\$1,116	\$ 5.63	\$ 86,385

*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, 2013

Item	Average Top 50% Farms		
	Per Cow	Per Cwt.	Total
Number of cows or cwt. milk	94	20,010	
<u>Accrual Operating Receipts</u>			
Milk	\$4,608	\$21.55	\$431,273
Dairy cattle	394	1.84	36,903
Dairy calves	16	0.08	1,519
Other livestock	0	0.00	-27
Crops	124	0.58	11,562
Miscellaneous receipts	<u>235</u>	<u>1.10</u>	<u>22,025</u>
Total	\$5,377	\$25.15	\$503,254
<u>Accrual Operating Expenses</u>			
Hired labor	\$ 313	\$ 1.46	\$ 29,281
Dairy grain & concentrate	1,420	6.64	132,902
Dairy roughage	79	0.37	7,430
Nondairy feed	0	0.00	0
Professional nutritional services	0	0.00	0
Machinery hire/rent/lease	159	0.74	14,871
Machinery repair & farm vehicle expense	228	1.06	21,295
Fuel, oil & grease	208	0.97	19,442
Replacement livestock	43	0.20	4,013
Breeding	69	0.32	6,487
Veterinary & medicine	90	0.42	8,459
Milk marketing	243	1.14	22,735
Bedding	42	0.20	3,909
Milking supplies	105	0.49	9,838
Cattle lease	2	0.01	167
Custom boarding	15	0.07	1,417
bST expense	8	0.04	740
Livestock professional fees	18	0.09	1,701
Other livestock expense	23	0.11	2,145
Fertilizer & lime	177	0.83	16,577
Seeds & plants	95	0.44	8,868
Spray & other crop expenses	55	0.26	5,115
Crop professional fees	3	0.02	323
Land, building, fence repair	58	0.27	5,390
Taxes	98	0.46	9,138
Real estate rent/lease	67	0.31	6,238
Insurance	66	0.31	6,208
Utilities	129	0.60	12,044
Other professional fees	22	0.10	2,022
Miscellaneous	<u>26</u>	<u>0.12</u>	<u>2,407</u>
Total Less Interest Paid	\$3,859	\$18.05	\$361,162
<u>Net Accrual Operating Income (without interest paid)</u>	1,518	7.10	142,093
- Change in livestock/crop inventory*	147	0.69	13,768
- Change in accounts receivable	62	0.29	5,796
- Change in feed/supply inventory**	62	0.29	5,828
+ Change in accounts payable***	<u>-15</u>	<u>-0.07</u>	<u>-1,407</u>
NET CASH FLOW	\$1,232	\$ 5.76	\$115,294
- Net personal withdrawals from farm (see footnote p.15)	<u>511</u>	<u>2.39</u>	<u>47,850</u>
Available for Farm Debt Payments & Investments	\$ 721	\$ 3.37	\$ 67,444
- Farm debt payments	<u>623</u>	<u>2.91</u>	<u>58,313</u>
Available for Farm Investment	\$ 98	\$ 0.46	\$ 9,131
- Capital purchases: cattle, machinery & improvements	<u>1,089</u>	<u>5.10</u>	<u>101,949</u>
Additional Capital Needed	\$ 992	\$ 4.64	\$ 92,818

*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

41 Small Herd Dairy Farms, 2013

Item	Average 41 Farms			Top 50% Farm		
<u>Land</u>	<u>Owned</u>	<u>Rented</u>	<u>Total</u>	<u>Owned</u>	<u>Rented</u>	<u>Total</u>
Tillable	127	140	267	132	154	286
Nontillable	29	15	44	16	20	36
Other nontillable	74	4	78	63	3	66
Total	230	159	389	211	176	388
<u>Crop Yields</u>	<u>Farms</u>	<u>Acres*</u>	<u>Production/Acre</u>	<u>Farms</u>	<u>Acres</u>	<u>Production/Acre</u>
Hay crop	39	182	2.18 tn DM	19	183	2.29 tn DM
Corn silage	34	68	15.20 tn 5.29 tn DM	17	91	14.62 tn 5.07 tn DM
Other forage	3	25	2.93 tn DM	1	40	1.88 tn DM
Total forage	39	242	2.94 tn DM	19	266	3.14 tn DM
Corn grain	10	39	104 bu	4	56	102 bu
Oats	2	10	66 bu	2	10	66 bu
Wheat	2	24	36 bu	1	30	1 bu
Other crops	12	41		4	38	
Tillable pasture	10	48		5	51	
Idle	5	22		1	6	
Total Tillable Acres	41	253		20	265	

*This column represents the average acreage for the farms producing that crop. Average acreages including those farms not producing were hay crop 173, corn silage 56, corn grain 10, oats 0, tillable pasture 12, 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, 2013**

Item	Average 39 Farms	Top 50% Farm
Total tillable acres per cow	3.47	3.12
Total forage acres per cow	3.06	2.76
Harvested forage dry matter, tons per cow	8.99	8.67

**Excludes farms that do not harvest forages.

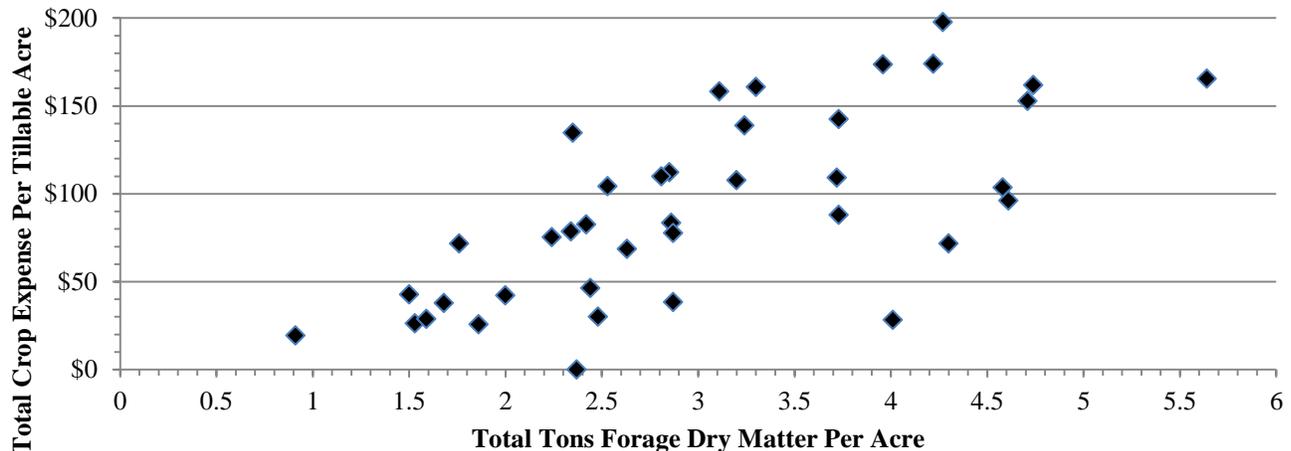
Cropping Analysis (continued)

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, 2013

Item	Average 39 farms		Top 50% Farms	
	Total Per Tillable Acre			
Number of farms reporting	39		19	
Average number of acres	253		265	
Fertilizer & lime expenses	\$	45.21	\$	62.60
Seeds & plants		28.52		30.46
Spray & other crop expenses		17.65		18.81
TOTAL	\$	91.38	\$	111.87

CROP EXPENSE PER ACRE AND TOTAL FORAGE PRODUCTION PER ACRE
39 Small Herd Farms That Grow Forages, 2013



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, 2013

Machinery Expense	Average 39 farms		Top 50% Farms	
	Total Expenses	Per Tillable Acre	Total Expenses	Per Tillable Acre
Fuel, oil & grease	\$ 16,774	\$ 60.99	\$ 20,465	\$ 67.98
Machinery repair & vehicle expense	20,392	74.14	22,248	73.90
Machine hire, rent & lease	9,984	36.30	15,427	51.24
Interest (5%)	9,665	35.14	10,239	34.01
Depreciation	<u>20,176</u>	<u>73.35</u>	<u>24,955</u>	<u>82.89</u>
Total	\$ 76,991	\$ 279.92	\$ 93,334	\$ 310.02

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
41 Small Herd Dairy Farms, 2013

Item	Dairy Cows		Heifer					
	No.	Value	Bred		Open		Calves	
			No.	Value	No.	Value	No.	Value
<u>Average 41 Farms:</u>								
Beg. year (owned)	76	\$109,564	20	\$ 26,591	23	\$ 19,599	18	\$ 9,179
+ Change w/o apprec.		2,722		2,338		377		-491
+ Appreciation		<u>1,617</u>		<u>200</u>		<u>446</u>		<u>27</u>
End year (owned)	79	\$113,903	22	\$ 29,129	23	\$ 20,422	17	\$ 8,715
End including leased	79							
Average number	77		60	(all age groups)				
<u>Top 50% Farms:</u>								
Beg. year (owned)	91	\$131,828	25	\$ 32,245	27	\$ 22,518	24	\$ 12,158
+ Change w/o apprec.		5,113		2,195		1,665		-1,340
+ Appreciation		<u>2,600</u>		<u>410</u>		<u>465</u>		<u>-35</u>
End year (owned)	95	\$139,540	27	\$ 34,850	28	\$ 24,648	21	\$ 10,783
End including leased	95							
Average number	94		70	(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
41 Small Herd Dairy Farms, 2013

Item	Average 41 Farms	Top 50% Farms
Total milk sold, lbs.	1,534,440	2,000,957
Milk sold per cow, lbs.	19,827	21,378
Average milk plant test, percent butterfat (average of farms reporting)	3.87	3.91

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
41 Small Herd Dairy Farms, 2013

Item	Average 41 Farms		Top 50% Farms	
	Number	Percent*	Number	Percent*
Cows sold for beef	17	22.2	19	20.8
Cows sold for dairy	1	1.1	2	1.7
Cows died	3	3.7	3	2.7
Culling rate**		25.9		23.5

*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**
41 Small Herd Dairy Farms, 2013

Item	Average 41 Farms			Top 50% Farms		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
<u>Accrual Cost of Producing Milk</u>						
Operating costs	\$ 246,845	\$ 3,190	\$ 16.09	\$ 300,281	\$ 3,208	\$ 15.01
Purchased inputs costs	\$ 273,436	\$ 3,533	\$ 17.82	\$ 332,265	\$ 3,550	\$ 16.61
Total costs	\$ 363,682	\$ 4,699	\$ 23.70	\$ 425,104	\$ 4,542	\$ 21.25
<u>Accrual Receipts From Milk</u>						
Net Milk Receipts	\$ 330,851	\$ 4,275	\$ 21.56	\$ 431,273	\$ 4,608	\$ 21.55
Net Farm Income without Appreciation	\$ 313,336	\$ 4,049	\$ 20.42	\$ 408,538	\$ 4,365	\$ 20.42
Net Farm Income with Appreciation	\$ 57,415	\$ 742	\$ 3.74	\$ 99,008	\$ 1,058	\$ 4.95
Net Farm Income with Appreciation	\$ 72,217	\$ 933	\$ 4.71	\$ 111,632	\$ 1,193	\$ 5.58

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
41 Small Herd Dairy Farms, 2013

Item	Average 41 Farms		Top 50% Farms	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Purchased dairy grain & concentrate	\$ 1,307	\$ 6.59	\$ 1,420	\$ 6.64
Purchased dairy roughage	59	0.30	79	0.37
Total Purchased Dairy Feed	\$ 1,366	\$ 6.89	\$ 1,499	\$ 7.01
Purchased grain & conc. as % of milk receipts		30%		30%
Purchased feed & crop expense	\$ 1,669	\$ 8.42	\$ 1,829	\$ 8.56
Purchased feed & crop expense as % of milk receipts		38%		39%
Breeding	\$ 65	\$ 0.33	\$ 69	\$ 0.32
Veterinary & medicine	94	0.47	90	0.42
Milk marketing	226	1.14	243	1.14
Bedding	46	0.23	42	0.20
Milking supplies	102	0.51	105	0.49
Cattle lease	1	0.01	2	0.01
Custom boarding	10	0.05	15	0.07
bST	6	0.03	8	0.04
Livestock professional fees	23	0.12	18	0.09
Other livestock expense	33	0.17	23	0.11

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

41 Small Herd Dairy Farms, 2013

Item	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
<u>Average 41 Farms:</u>				
Farm capital*	\$371,423	\$12,591	\$3,623	\$7,114
Real estate*		6,050		3,418
Machinery & equipment	74,878	2,545	738	
<u>Ratios</u>				
Asset turnover*	Operating Expense 0.41	Interest Expense 0.76	Depreciation Expense 0.02	Depreciation Expense 0.06
<u>Top 50% Farms:</u>				
Farm capital*	\$393,096	\$ 11,613	\$3,758	\$7,397
Real estate*		5,275		3,360
Machinery & equipment	77,853	2,329	762	
<u>Ratios</u>				
Asset turnover*	Operating Expense 0.48	Interest Expense 0.72	Depreciation Expense 0.02	Depreciation Expense 0.06

*Excludes rented farms.

LABOR FORCE INVENTORY AND ANALYSIS

41 Small Herd Dairy Farms, 2013

Labor Force	Months	Age	Years of Education	Value of Labor & Management
<u>Average 41 Farms:</u>				
Operator number 1	13.8	51	14	\$ 37,598
Operator number 2	3.0	53	12	7,354
Operator number 3	1.1	49	16	2,927
Family paid	3.4			
Family unpaid	3.8			
Hired	<u>6.6</u>			
Total	31.6	/ 12 = 2.63 Worker Equivalent 1.33 Operator/Manager Equivalent		
<u>Top 50% Farms:</u> Total	33.56	/ 12 = 2.80 Worker Equivalent 1.33 Operator/Manager Equivalent		
Operator's				

Labor Efficiency	Average 41 Farms		Top 50% Farms	
	Total	Per Worker	Total	Per Worker
Cows, average number	77	29	94	33
Milk sold, pounds	1,534,440	582,883	2,000,957	715,479
Tillable acres	267	101	286	102

Labor Costs	Average 41 Farms			Top 50% Farms		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
Value of operator(s)						
labor (\$2,600/month)	\$44,196	\$ 571	\$ 2.88	\$41,395	\$ 442	\$ 2.07
Family unpaid (\$2,600/month)	9,349	121	0.61	11,606	124	0.58
Hired	<u>22,449</u>	<u>290</u>	<u>1.46</u>	<u>29,281</u>	<u>313</u>	<u>1.46</u>
Total Labor	\$75,993	\$ 982	\$ 4.95	\$82,282	\$ 879	\$ 4.11
Machinery Cost	<u>\$74,025</u>	<u>\$ 957</u>	<u>\$ 4.82</u>	<u>\$89,469</u>	<u>\$ 956</u>	<u>\$ 4.47</u>
Total Labor & Machinery	\$150,018	\$ 1,938	\$ 9.78	\$171,751	\$ 1,835	\$ 8.58
Hired labor expense per hired worker equivalent		\$27,101			\$32,207	
Hired labor expense as % of milk sales		6.8%			6.8%	

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, 2012 & 2013

Selected Factors	Average of Same 33 Farms*		Average of Same 16 Top 50% Farms*	
	2012	2013	2012	2013
<u>Size of Business</u>				
Average number of cows	78	78	92	95
Average number of heifers	63	61	76	74
Milk sold, lbs.	1,523,502	1,572,342	1,948,927	2,034,035
Worker equivalent	2.49	2.53	2.69	2.75
Total tillable acres	245	255	266	281
<u>Rates of Production</u>				
Milk sold per cow, lbs.	19,502	20,096	21,242	21,327
Hay DM per acre, tons	2.1	2.3	2.1	2.4
Corn silage per acre, tons	16.8	16.2	17.1	15.9
<u>Labor Efficiency</u>				
Cows per worker	31	31	34	35
Milk sold/worker, lbs.	611,848	621,479	724,508	739,649
<u>Cost Control</u>				
Grain & concentrate purchased as % of milk sales	35%	31%	34%	31%
Dairy feed & crop expense per cwt. milk	\$ 8.68	\$ 8.50	\$ 8.82	\$ 8.71
Labor & machinery costs/cow	\$ 1,894	\$ 1,855	\$ 1,820	\$ 1,695
Operating cost of producing cwt. of milk	\$ 15.06	\$ 15.90	\$ 13.83	\$ 14.85
<u>Capital Efficiency**</u>				
Farm capital per cow***	\$ 11,318	\$ 12,262	\$ 10,593	\$ 11,469
Machinery & equipment per cow	\$ 2,318	\$ 2,363	\$ 2,188	\$ 2,173
Asset turnover ratio***	0.45	0.42	0.52	0.49
<u>Profitability</u>				
Net farm income w/o appreciation	\$ 47,913	\$ 63,626	\$ 83,560	\$ 107,219
Net farm income with appreciation	\$ 76,050	\$ 76,879	\$ 105,632	\$ 119,773
Labor & management income per operator/manager	\$ 2,883	\$ 17,352	\$ 26,901	\$ 47,063
Rate of return on equity capital with appreciation	2.8%	3.2%	6.1%	8.1%
Rate of return on all capital with appreciation	3.1%	3.4%	5.5%	7.1%
<u>Financial Summary</u>				
Farm net worth, end year	\$ 658,326	\$ 703,229	\$ 742,297	\$ 811,335
Debt to asset ratio	0.26	0.27	0.24	0.26
Farm debt per cow	\$ 2,901	\$ 3,188	\$ 2,504	\$ 2,986

*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, 2012 & 2013

Item	2012		2013	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	78		78	
Cwt. of Milk Sold		15,235		15,723
<u>ACCRUAL OPERATING RECEIPTS</u>				
Milk	\$3,875	\$19.87	\$4,351	\$21.65
Dairy cattle	275	1.41	326	1.62
Dairy calves	5	0.03	24	0.12
Other livestock	19	0.10	12	0.06
Crops	261	1.34	44	0.22
Miscellaneous receipts	<u>249</u>	<u>1.28</u>	<u>225</u>	<u>1.12</u>
Total Receipts	\$4,684	\$24.02	\$4,982	\$24.79
<u>ACCRUAL OPERATING EXPENSES</u>				
Hired labor	\$ 229	\$ 1.18	\$ 248	\$ 1.23
Dairy grain & concentrate	1,340	6.87	1,339	6.66
Dairy roughage	74	0.38	71	0.35
Nondairy feed	0	0.00	0	0.00
Professional nutritional services	1	0.00	0	0.00
Machine hire/rent/lease	137	0.70	144	0.71
Mach. repair & vehicle exp.	247	1.27	248	1.24
Fuel, oil & grease	193	0.99	199	0.99
Replacement livestock	58	0.30	71	0.35
Breeding	61	0.31	64	0.32
Veterinary & medicine	84	0.43	96	0.48
Milk marketing	222	1.14	224	1.11
Bedding	50	0.26	49	0.24
Milking supplies	88	0.45	102	0.51
Cattle lease	1	0.00	1	0.01
Custom boarding	15	0.08	12	0.06
bST expense	8	0.04	7	0.04
Livestock professional fees	23	0.12	24	0.12
Other livestock expense	48	0.24	32	0.16
Fertilizer & lime	125	0.64	141	0.70
Seeds & plants	87	0.45	94	0.47
Spray/other crop expense	65	0.33	61	0.30
Crop professional fees	1	0.01	3	0.01
Land, building, fence repair	83	0.43	64	0.32
Taxes	95	0.49	97	0.48
Real estate rent/lease	64	0.33	53	0.26
Insurance	63	0.32	71	0.36
Utilities	126	0.64	134	0.67
Interest paid	108	0.55	122	0.61
Other professional fees	22	0.11	30	0.15
Miscellaneous	<u>19</u>	<u>0.10</u>	<u>24</u>	<u>0.12</u>
Total Operating Expenses	\$3,738	\$19.17	\$3,826	\$19.04
Expansion Livestock	8	0.04	0	0.00
Extraordinary Expense	8	0.04	39	0.19
Machinery Depreciation	254	1.30	251	1.25
Real Estate Depreciation	<u>64</u>	<u>0.33</u>	<u>52</u>	<u>0.26</u>
Total Expenses	\$4,072	\$20.88	\$4,168	\$20.74
Net Farm Income Without Appreciation	\$ 613	\$ 3.14	\$ 813	\$ 4.05

RECEIPTS AND EXPENSES PER COW AND PER CWT.

Same 16 Top 50% Small Herd Dairy Farms, 2012 & 2013

Item	2012		2013	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	92		95	
Cwt. Of Milk Sold		19,489		20,340
<u>ACCRUAL OPERATING RECEIPTS</u>				
Milk	\$4,187	\$19.71	\$4,611	\$21.62
Dairy cattle	351	1.65	371	1.74
Dairy calves	13	0.06	21	0.10
Other livestock	19	0.09	0	0.00
Crops	335	1.58	143	0.67
Miscellaneous receipts	<u>251</u>	<u>1.18</u>	<u>234</u>	<u>1.10</u>
Total Receipts	\$5,157	\$24.28	\$5,379	\$25.22
<u>ACCRUAL OPERATING EXPENSES</u>				
Hired labor	\$ 217	\$ 1.02	\$ 242	\$ 1.13
Dairy grain & concentrate	1,417	6.67	1,451	6.80
Dairy roughage	122	0.58	97	0.46
Nondairy feed	0	0.00	0	0.00
Professional nutritional services	1	0.00	0	0.00
Machine hire/rent/lease	158	0.74	183	0.86
Mach. repair & vehicle exp.	239	1.12	212	1.00
Fuel, oil & grease	184	0.87	203	0.95
Replacement livestock	38	0.18	48	0.22
Breeding	72	0.34	70	0.33
Veterinary & medicine	79	0.37	91	0.42
Milk marketing	235	1.11	238	1.12
Bedding	48	0.23	41	0.19
Milking supplies	89	0.42	111	0.52
Cattle lease	1	0.01	2	0.01
Custom boarding	26	0.12	19	0.09
bST expense	10	0.05	10	0.05
Livestock professional fees	23	0.11	18	0.08
Other livestock expense	51	0.24	19	0.09
Fertilizer & lime	168	0.79	164	0.77
Seeds & plants	93	0.44	86	0.41
Spray/other crop expense	72	0.34	55	0.26
Crop professional fees	2	0.01	4	0.02
Land, building, fence repair	74	0.35	66	0.31
Taxes	80	0.38	94	0.44
Real estate rent/lease	85	0.40	59	0.28
Insurance	57	0.27	68	0.32
Utilities	123	0.58	129	0.61
Interest paid	87	0.41	108	0.51
Other professional fees	24	0.11	22	0.10
Miscellaneous	<u>18</u>	<u>0.08</u>	<u>23</u>	<u>0.11</u>
Total Operating Expenses	\$3,894	\$18.33	\$3,935	\$18.45
Expansion Livestock	13	0.06	0	0.00
Extraordinary Expense	0	0.00	14	0.07
Machinery Depreciation	272	1.28	248	1.17
Real Estate Depreciation	<u>68</u>	<u>0.32</u>	<u>58</u>	<u>0.27</u>
Total Expenses	\$4,247	\$19.99	\$4,255	\$19.96
Net Farm Income Without Appreciation	\$ 911	\$ 4.29	\$1,124	\$ 5.27

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

41 Small Herd Dairy Farms, 2013

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)
3.90	125	2,789,795	25,004	3.6	22	44	973,400
3.14	98	1,983,885	22,182	2.7	17	33	681,871
2.58	73	1,352,385	18,961	2.3	15	29	543,107
2.07	55	997,772	17,053	1.8	12	25	450,586
1.61	41	657,925	13,731	0.9	1	20	302,579

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)
\$ 725	21%	\$ 562	\$ 1,276	\$ 917	\$ 5.76	0.4%	5.4%
1,083	27	748	1,707	1,338	7.52	2.1	17.8
1,294	29	928	1,986	1,665	8.34	3.4	22.9
1,424	34	1,108	2,278	1,876	8.95	5.5	29.4
1,769	41	1,399	2,692	2,258	10.87	9.0	41.5

Value and Cost of Milk Production			Profitability			Change in Net Worth with Appreciation
Milk Receipts Per Cow	Operating Cost Production Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income with Appreciation	Net Farm Income w/o Appreciation	Labor & Mgmt. Income Per Operator	
(12)	(12)	(12)	(4)	(4)	(4)	(8)
\$ 5,375	\$ 12.80	\$ 19.80	\$ 177,411	\$ 149,430	\$ 65,898	\$ 132,337
4,706	14.54	21.84	92,557	75,333	28,132	73,705
4,174	16.08	24.31	55,190	45,552	6,962	20,173
3,661	17.63	27.11	37,044	27,404	-7,501	6,556
2,928	21.06	34.02	7,032	-3,082	-34,492	-21,334

*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 38 New York Dairy Farms, 2013

<u>Animals Entering Herd</u>	Average
Number calving in 2013 for first time	305
Animals purchased, % ¹	0.5%
Animals raised by farm, % ²	99.5%
<u>Current Heifer Inventory</u>	
Raised on dairy, %	86.0%
Raised by a custom grower, %	14.0%

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, 305 animals calved for the first time in 2013. The breakdown on the source of these animals was 0.5 percent purchased and 99.5 percent raised on the farm. Of the current heifer inventory, 86.0 percent were raised on the dairy and 14.0 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, 14 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
14 Small Herd Dairy Farms, 2013

	Pounds	Percent	Price/Pound	Total	\$/Cwt of Milk
BASE FARM PRICE					
Butterfat	71,376	3.87%	\$1.67	\$118,959	\$6.45
Protein	57,859	3.14%	\$3.29	\$190,621	\$10.33
Solids	106,119	5.75%	\$0.39	\$ 41,645	\$2.26
Total Component Contribution					\$ 19.04
PPD	1,844,541			\$ 29,020	\$ 1.57
Base Farm Price					\$ 20.61
Premiums					
Quality				\$ 3,731	\$0.20
Volume				\$ 1,851	\$0.10
Market Premiums				\$ 7,625	\$0.41
Total Premiums					\$ 0.72
BASE FARM PRICE + PREMIUM					\$ 21.33
<hr style="border-top: 1px dashed black;"/>					
Deductions					
Promo				\$ 2,766	\$0.15
Hauling + Stop Charges.				\$ 15,495	\$0.84
Market Fees & Coop Dues				\$ 1,329	\$0.07
Total Deductions					\$ 1.06
BASE FARM PRICE + PREMIUMS - DEDUCTIONS					\$ 20.27
Marketing Programs					
Futures Contracts, Forward Contracting, Etc.				\$ 0	\$ 0.00
Total Marketing Income					\$ 0.00
Patronage Dividends				\$ 3,390	\$ 0.18
NET PRICE RECEIVED ON FARM, ALL SOURCES					\$ 20.45
PPD - Hauling, per cwt.					\$ 0.73
PPD - Hauling + Market Premiums, per cwt.					\$ 1.15
Net Marketing Value, per cwt. (PPD + Total Preimums – Total Deductions)					\$ 1.23

*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 14 farms is 87 cows.

MILK PRICE INFORMATION BY QUARTILE*
(Each Category Sorted Independently)
14 Small Herd Dairy Farms, 2013

	Lowest Quartile	←—————→	Highest Quartile
Butterfat, %	3.65	3.86	3.97
Protein, %	3.01	3.10	3.19
Other Solids, %	5.63	5.69	5.75
Butterfat, \$ per Cwt.	6.08	6.39	6.69
Protein, \$ per Cwt.	9.86	10.19	10.55
Other solids, \$ per Cwt.	2.13	2.29	2.31
Total Component Value per Cwt.	\$ 18.44	\$ 18.84	\$ 19.20
PPD, \$ per Cwt.	1.19	1.47	1.70
Base Farm Price per Cwt.	\$ 19.84	\$ 20.55	\$ 20.85
Quality, \$ per Cwt.	0.04	0.20	0.25
Volume, \$ per Cwt.	0.00	0.04	0.11
Market premium, \$ per Cwt.	0.01	0.35	0.55
Total Premium, \$ per Cwt.	0.31	0.64	0.80
Base Farm Price + Premiums per Cwt.	\$ 20.36	\$ 21.24	\$ 21.54
Promotion, \$ per Cwt.	0.15	0.15	0.15
Hauling, \$ per Cwt.	0.44	0.77	0.97
Market fees & coop dues per Cwt.	0.01	0.05	0.11
Total Marketing Expenses per Cwt.	\$ 0.63	\$ 0.97	\$ 1.23
Base + Premiums – Deductions per Cwt.	\$ 19.41	\$ 20.09	\$ 20.47
Futures contract, forward contracting, \$ per Cwt.	0.00	0.00	0.00
Total Marketing Income, \$ per Cwt.	\$ 0.00	\$ 0.00	\$ 0.00
Patronage Dividends, \$ per Cwt.	\$ 0.00	\$ 0.05	\$ 0.27
Net Price Received From All Sources, \$ per Cwt.	\$ 19.58	\$ 20.15	\$ 20.55
PPD - hauling, \$ per Cwt.	0.40	0.72	0.82
PPD - hauling + mkt premiums, \$ per Cwt.	0.61	1.19	1.33
Net Marketing Value, \$ per Cwt. (PPD + Total Premiums – Total Deductions)	0.75	1.13	1.44

*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 169 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

169 New York Dairy Farms, 2012

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)
38.8	1,892	49,665,166	28,592	5.0	24	63	1,531,309
24.7	1,127	30,054,041	27,243	3.7	20	52	1,318,166
19.8	897	23,485,084	26,437	3.4	19	49	1,204,845
16.4	708	18,126,241	25,705	3.1	18	46	1,143,274
13.3	573	13,534,712	24,938	2.9	17	44	1,081,089

9.4	412	10,081,569	24,243	2.6	16	42	992,845
6.5	269	6,058,011	23,270	2.3	15	38	879,393
4.0	149	3,101,862	21,688	2.0	14	34	750,865
2.8	92	1,729,237	18,750	1.7	12	31	606,893
1.8	49	905,580	13,882	0.6	0	23	417,411

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)		
\$797	23%	\$489	\$1,130	\$1,058	\$6.23		
1,150	28	624	1,404	1,559	7.27		
1,355	31	706	1,521	1,793	7.64		
1,500	32	779	1,613	1,932	8.08		
1,613	33	838	1,678	2,026	8.41		

1,692	35	908	1,754	2,120	8.73		
1,788	37	959	1,852	2,229	9.06		
1,873	38	1,035	1,942	2,339	9.52		
1,985	40	1,119	2,084	2,468	10.18		
2,245	45	1,351	2,592	2,742	11.50		

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

**FARM BUSINESS CHART FOR
FARM MANAGEMENT COOPERATORS**
169 New York Dairy Farms, 2012

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)
\$5,759	\$21.55	\$2,125	\$12.06	\$3,385	\$16.66
5,393	20.69	2,750	13.28	4,070	17.99
5,227	20.27	3,157	14.18	4,376	18.71
5,055	20.08	3,421	14.77	4,558	19.28
4,924	19.86	3,675	15.36	4,775	19.84

4,799	19.62	3,917	15.96	4,961	20.45
4,540	19.43	4,077	16.41	5,106	21.12
4,259	19.19	4,219	16.95	5,256	21.83
3,757	18.98	4,476	17.92	5,445	23.13
2,769	18.62	4,978	20.78	5,936	30.58

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)
\$1,807,809	\$1,386	0.24	\$2,487,315	\$2,304	\$1,181,869	\$573,326
886,507	1,100	0.21	1,237,868	1,481	511,491	245,759
568,370	947	0.17	797,437	1,206	304,614	144,784
348,335	833	0.15	590,220	1,072	140,219	71,062
235,665	698	0.13	392,856	923	73,424	39,068

146,642	589	0.11	234,808	825	38,075	23,796
105,991	445	0.08	156,704	680	16,294	9,585
70,666	325	0.06	100,114	546	-7,327	-5,009
27,227	154	0.03	57,168	363	-64,605	-40,246
-74,185	-309	-0.11	-117,058	-289	-277,870	-175,959

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
169 New York Dairy Farms, 2012

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)
\$ 37	\$1,400	19.36	25.95	0%	\$ 184	62%	141.98
205	1,051	2.86	3.24	2	1,291	41	6.77
296	891	2.11	2.44	5	1,853	33	4.38
411	772	1.61	1.99	7	2,462	28	3.16
492	679	1.41	1.58	9	2,996	23	2.55
592	600	1.17	1.35	11	3,436	19	2.06
667	483	1.00	1.10	13	3,947	14	1.67
759	378	0.85	0.77	15	4,470	9	1.32
878	210	0.53	0.32	17	5,109	3	0.98
1,316	-118	-0.31	-0.57	29	6,543	-11	-0.22
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%	0.01	0.00	0.67	0.00	0.02	
0.12	90	0.10	0.00	0.71	0.01	0.04	
0.21	83	0.18	0.06	0.75	0.01	0.05	
0.28	78	0.23	0.14	0.77	0.01	0.05	
0.39	72	0.29	0.22	0.78	0.02	0.06	
0.50	67	0.33	0.33	0.81	0.02	0.06	
0.61	63	0.38	0.40	0.83	0.03	0.07	
0.80	56	0.43	0.51	0.85	0.03	0.09	
0.99	50	0.50	0.60	0.88	0.04	0.09	
1.49	42	0.64	0.77	0.99	0.07	0.14	
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)	
0.86	\$1,998	\$697	\$6,641	\$1,823,101	28%	20%	
0.74	2,911	1,047	8,039	808,038	15	12	
0.67	3,349	1,330	8,645	544,071	13	10	
0.62	3,552	1,579	9,283	296,500	11	8	
0.58	3,949	1,819	10,115	185,991	9	7	
0.55	4,302	1,956	10,810	113,516	7	6	
0.51	4,864	2,112	11,361	62,170	5	4	
0.45	5,528	2,332	12,501	26,207	2	3	
0.40	6,519	2,688	13,593	-17,545	-1	1	
0.28	9,584	4,233	17,095	-438,730	-14	-6	

*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 43 cows on the small conventional farms to 1,037 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 2012 State Summary*. In most years, as herd size increases, the net farm income increases (page 48)*; and that was the case for 2012. Net farm income without appreciation averaged \$26,548 per farm for the less than 60 cow farms and \$1,006,695 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 2012. The largest herd size category experienced an increase in net worth of \$900,599. However, percent equity varied as herd size increased. The 200 to 399, 600 to 899, and more than 900 herd size categories had the lowest percent equity at 68 percent; while the less than 60 herd size category averaged the highest percent equity at 83 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 26,310 pounds of milk sold per cow, farms in the largest herd size group averaged 16.6 percent more milk output per cow than the average of all herds in the summary with less than 900 cows.

Farm capital per cow generally decreased as herd size increased. Milk sold per worker increased dramatically as herd size increased. The farms with 100 cows or more averaged over 1,155,068 pounds of milk sold per worker while the farms with less than 100 cows averaged less than 544,000 pounds per worker.

* Wayne A. Knoblauch, Cathryn Dymond, Jason Karszes, and Richard Kimmich, Dairy Farm Management Business Summary, New York State, 2012, Charles H. Dyson School of Applied Economics and Management, Cornell University, R.B. 2013-01, December 2013.

SELECTED BUSINESS FACTORS BY TYPE OF BARN AND HERD SIZE

169 New York Dairy Farms, 2012

Item	Farms with:	Tiestall/Stanchion		Freestall		
		<= 60 Cows	>60 Cows	<=200 Cows	201-500 Cows	≥500 Cows
Number of farms		11	10	31	26	81
<u>Cropping Program Analysis</u>						
Total Tillable acres		174	242	334	722	1,962
Tillable acres rented*		68	113	164	357	909
Hay crop acres*		117	154	197	352	840
Corn silage acres*		21	47	96	260	855
Hay crop, tons DM/acre		1.9	2.2	2.4	2.7	3.1
Corn silage, tons/acre		13.8	17.7	16.7	16.8	16.9
Oats, bushels/acre		0	0	93	62	42
Forage DM per cow, tons		7.4	7.6	8.5	7.4	7.7
Tillable acres/cow		4.1	2.89	2.8	2.1	1.9
Fertilizer & lime expense/tillable acre		\$34.76	\$35.23	\$56.88	\$66.89	\$74.97
Total machinery costs		\$42,279	\$70,079	\$115,352	\$338,321	\$887,623
Machinery cost/tillable acre		\$243	\$290	\$324	\$454	\$442
<u>Dairy Analysis</u>						
Number of cows		43	84	125	359	1,037
Number of heifers		36	72	103	294	894
Milk sold, lbs.		772,658	1,529,326	2,665,505	8,975,562	26,950,796
Milk sold/cow, lbs.		18,082	18,272	21,314	25,028	25,999
Operating cost of producing milk/cwt.		\$14.28	\$16.38	\$15.34	\$15.72	\$15.69
Total cost of producing milk/cwt.		\$25.76	\$23.33	\$21.43	\$19.77	\$19.09
Price/cwt. milk sold		\$19.64	\$19.76	\$19.89	\$19.74	\$19.75
Purchased dairy feed/cow		\$1,205	\$1,344	\$1,566	\$1,870	\$1,883
Purchased dairy feed/cwt. milk		\$6.66	\$7.36	\$7.35	\$7.47	\$7.24
Purchased grain & concentrate as % of milk receipts		32%	34%	34%	34%	35%
Purchased feed & crop expense/cwt milk		\$8.00	\$8.43	\$8.82	\$8.68	\$8.46
<u>Capital Efficiency</u>						
Farm capital/worker		\$349,437	\$337,519	\$382,523	\$415,462	\$472,171
Farm capital/cow		\$15,292	\$10,525	\$10,920	\$10,067	\$10,240
Farm capital/tillable acre owned		\$6,186	\$6,850	\$8,022	\$9,875	\$10,078
Real estate/cow		\$8,113	\$4,585	\$4,769	\$4,121	\$4,173
Machinery investment/cow		\$3,331	\$2,274	\$2,091	\$1,903	\$1,646
Asset turnover ratio		0.31	0.44	0.47	0.61	0.61
<u>Labor Efficiency</u>						
Worker equivalent		1.87	2.61	3.57	8.69	22.47
Operator/manager equivalent		1.11	1.11	1.63	1.89	2.45
Milk sold/worker, lbs.		413,554	585,762	747,687	1,033,158	1,199,234
Cows/worker		23	32	35	41	46
Labor cost/cow		\$1,293	\$973	\$904	\$840	\$802
Labor cost/tillable acre		\$317	\$336	\$338	\$417	\$424
<u>Profitability & Balance Sheet Analysis</u>						
Net farm income (without appreciation)		\$25,701	\$31,230	\$81,426	\$214,791	\$713,932
Labor & management income/operator		\$-10,666	\$-11,853	\$12,581	\$45,823	\$143,693
Rate return on all capital with appreciation		-0.6%	3.5%	3.2%	7.8%	9.21%
Farm debt/cow		\$2,858	\$2,178	\$1,415	\$3,375	\$3,355
Percent equity		81%	81%	73%	68%	68%

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

FARM BUSINESS CHART FOR SMALL TIESTALL/STANCHION DAIRY FARMS
11 Tiestall/Stanchion Dairy Farms with 60 or Less Cows, New York, 2012

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)
2.44	51	1,099,397	24,144	2.4	19	32	617,082
2.22	48	1,004,574	21,149	2.0	15	29	504,290
1.91	46	905,298	19,145	1.8	15	24	457,492
1.63	43	707,410	16,007	1.7	11	20	392,546
1.39	33	355,292	10,373	1.5	2	18	205,593

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)	
\$486	21%	\$557	\$1,495	\$726	\$5.80	
1,088	29	698	2,333	1,279	7.25	
1,164	33	1,125	2,438	1,452	8.08	
1,362	36	1,326	2,720	1,722	8.83	
1,816	49	1,507	3,017	2,094	10.78	

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)
\$1,928	\$11.53	\$20.87	\$66,660	\$1,325	\$28,505	\$54,159
3,171	13.65	23.13	51,276	1,077	9,862	41,314
3,759	14.71	25.73	35,876	787	4,972	3,580
4,194	16.32	33.65	12,848	310	-16,891	-7,691
4,804	19.28	45.33	-16,869	-441	-63,225	-22,395

*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, 2012

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)
3.60	115	2,118,482	22,760	3.2	20	48	907,797
3.25	94	1,703,704	19,869	2.8	18	37	662,395
2.75	77	1,409,589	18,711	2.5	16	35	591,694
2.03	70	1,297,735	17,449	1.8	15	27	522,236
1.44	64	1,117,122	13,815	1.2	0	25	438,954

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)	
\$893	24%	\$490	\$1,311	\$1,105	\$5.78	
1,050	28	629	1,509	1,286	7.29	
1,130	35	881	1,735	1,383	8.34	
1,402	39	926	1,985	1,913	10.19	
1,685	45	1,154	2,346	2,249	11.63	

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)
\$2,812	\$11.85	\$18.99	\$92,631	\$1,161	\$42,362	\$241,259
3,471	13.80	20.52	72,361	874	23,395	70,699
3,648	15.49	21.84	49,277	661	7,785	44,158
3,794	16.11	24.00	33,562	476	630	10,392
4,535	25.27	32.72	-91,678	-803	-141,907	-114,271

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

FARM BUSINESS CHART FOR SMALL FREESTALL DAIRY FARMS

31 Freestall Barn Dairy Farms with 200 Cows or less, New York, 2012

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)
6.70	197	4,579,557	26,576	5.0	23	55	1,109,123
5.08	184	4,078,702	24,483	3.4	20	48	1,030,125
4.33	164	3,591,053	23,541	2.9	20	42	939,403
3.72	144	3,025,756	23,035	2.7	18	38	843,602
3.47	123	2,824,879	22,119	2.3	17	37	726,613
3.12	115	2,400,226	21,152	2.1	16	34	686,522
2.82	106	2,134,466	20,115	1.9	15	33	659,247
2.72	97	1,816,223	18,325	1.7	13	31	633,156
2.50	82	1,513,547	17,460	1.4	8	29	583,881
1.80	60	1,184,361	15,949	0.3	0	23	482,718

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)
\$809	23%	\$548	\$1,265	\$1,032	\$6.16
1,077	29	657	1,498	1,504	7.17
1,202	31	686	1,549	1,673	7.74
1,398	32	768	1,630	1,889	8.35
1,461	33	807	1,729	1,960	8.67
1,601	35	861	1,806	1,993	9.37
1,679	37	945	1,890	2,050	9.74
1,773	40	1,016	1,979	2,201	10.03
1,815	42	1,191	2,246	2,345	10.65
1,994	46	1,481	2,800	2,495	12.57

Value and Cost of Production**Profitability**

Milk Receipts Per Cow	Operating Cost Producing Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation
			Total	Per Cow		
(12)	(12)	(12)	(4)	(12)	(4)	(8)
\$5,357	\$12.62	\$18.65	\$154,167	\$1,119	\$66,076	\$172,727
4,947	13.34	19.54	131,616	990	44,769	127,157
4,691	13.62	20.12	118,231	939	34,460	102,706
4,504	14.05	20.51	110,788	894	27,002	85,266
4,365	14.79	21.16	104,002	803	16,473	61,640
4,138	15.29	21.68	91,937	739	8,921	47,813
3,977	15.91	22.18	78,203	649	6,850	32,438
3,836	16.32	23.30	58,821	509	1,561	19,590
3,527	17.21	24.95	28,003	350	-18,889	11,057
3,134	21.62	28.54	-25,774	-189	-58,275	-51,177

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

FARM BUSINESS CHART FOR MEDIUM FREESTALL DAIRY FARMS
26 Freestall Barn Dairy Farms with 201-500 Cows, New York, 2012

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)
13.87	495	12,329,374	27,998	3.9	24	64	1,564,831
12.67	442	11,692,326	27,415	3.6	23	54	1,343,334
11.13	420	10,805,436	26,872	3.5	21	50	1,271,722
9.33	410	10,623,697	26,355	3.4	20	49	1,205,301
8.82	404	10,150,046	25,840	3.3	18	48	1,151,950
8.38	371	9,093,718	25,142	2.9	17	44	1,073,088
7.57	351	8,237,865	24,170	2.3	15	38	990,903
6.88	308	7,704,426	23,833	2.1	14	36	891,931
6.35	280	7,102,700	23,093	1.9	13	34	841,429
5.96	217	5,198,893	22,064	0.3	0	28	703,463

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)	
\$1,200	25%	\$576	\$1,227	\$1,692	\$7.14	
1,364	30	747	1,456	1,869	7.60	
1,507	31	796	1,688	2,000	7.98	
1,591	32	891	1,761	2,076	8.29	
1,700	36	950	1,852	2,101	8.62	
1,821	37	1,004	1,912	2,242	8.81	
1,932	38	1,067	1,954	2,452	9.09	
1,975	39	1,208	1,996	2,526	9.94	
2,009	41	1,274	2,162	2,588	10.59	
2,193	42	1,336	2,430	2,822	11.28	

Value and Cost of Production			Profitability			
Milk Receipts Per Cow	Operating Cost Producing Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation
			Total	Per Cow		
(12)	(12)	(12)	(4)	(12)	(4)	(8)
\$5,827	\$12.18	\$16.00	\$502,282	\$1,269	\$164,772	\$834,122
5,344	13.36	18.10	338,708	1,081	143,113	364,795
5,230	14.68	19.02	332,086	819	121,566	258,951
5,164	15.34	19.80	280,427	765	113,937	202,812
5,087	15.76	20.15	223,631	684	63,799	192,750
4,931	16.02	20.54	197,836	593	38,795	150,331
4,826	16.25	20.99	171,928	494	27,748	93,715
4,735	17.25	21.40	151,725	407	14,344	57,635
4,429	18.10	21.90	128,846	366	-1,853	11,178
4,268	19.55	22.50	18,555	98	-89,664	-93,314

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

FARM BUSINESS CHART FOR LARGE FREESTALL DAIRY FARMS
81 Freestall Barn Dairy Farms with 500 or More Cows, New York, 2012

Size of Business			Rates of Production			Labor Efficiency	
Worker Equiv- Ament	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)
46.40	2,263	60,289,397	29,309	5.4	25	60	1,606,174
31.21	1,521	39,040,936	27,637	4.1	20	53	1,389,915
26.24	1,207	32,748,186	27,084	3.7	19	50	1,321,936
23.52	1,065	27,961,562	26,680	3.4	18	48	1,231,299
20.99	945	24,798,633	26,164	3.1	17	46	1,193,752
19.11	861	22,556,058	25,633	3.0	16	45	1,160,915
17.74	750	19,733,257	25,086	2.8	16	44	1,115,817
15.88	683	17,075,435	24,702	2.5	15	42	1,065,573
13.90	599	14,511,626	23,987	2.2	14	40	985,725
11.18	535	12,588,196	21,906	1.5	10	34	841,681
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)		
\$1,243	25%	\$554	\$1,212	\$1,667	\$6.67		
1,460	29	684	1,447	1,841	7.45		
1,585	32	751	1,546	1,971	7.68		
1,650	33	809	1,611	2,079	8.05		
1,737	34	859	1,649	2,159	8.35		
1,803	35	913	1,698	2,231	8.73		
1,866	37	957	1,759	2,306	8.98		
1,921	38	1,013	1,842	2,382	9.27		
2,049	39	1,073	1,934	2,516	9.63		
2,358	44	1,135	2,060	2,808	10.48		
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)	
\$5,842	\$12.36	\$16.46	\$2,266,759	\$1,477	\$672,724	\$2,399,931	
5,583	13.96	17.49	1,326,685	1,165	387,869	1,227,999	
5,361	14.55	18.16	971,270	1,006	275,376	872,461	
5,269	15.04	18.56	760,450	863	207,134	706,318	
5,136	15.71	18.97	620,419	696	154,087	569,879	
5,039	16.28	19.52	502,288	587	91,455	452,986	
4,955	16.65	19.82	369,849	455	40,376	292,602	
4,832	16.95	20.53	295,128	327	13,314	205,847	
4,676	17.41	21.22	159,783	203	-37,044	55,840	
4,331	19.26	22.73	-39,172	-28	-182,782	-711,388	

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

IDENTIFY AND SET GOALS

If businesses are to be successful, they must have direction. Written goals help provide businesses with an identifiable direction over both the long and short term. Goal setting is as important on a dairy farm as it is in other businesses. Written goals are a tool which farm operators can use to ensure that the business continues to move in the desired direction. Goals should be SMART:

1. Goals should be Specific.
2. Goals should be Measurable.
3. Goals should be Achievable but challenging.
4. Goals should be Rewarding.
5. Goals should be Timed with a designated date by which the goal will be achieved.

Goal setting on a dairy farm should be a process for writing down and agreeing on goals that you have already given some thought to. It is also important to remember that once you write out your goals they are not cast in concrete. If a change takes place which has a major impact on the farm business, the goals should be reworked to accommodate that change. Refer to your goals as often as necessary to keep the farm business progressing.

It is important to identify both objectives (long-range) and goals (short-range) when looking at the future of your farm business.

A suggested format for writing out your goals is as follows:

- a. Begin with a mission statement which describes why the business exists based on the preferences and values of the owners.
- b. Identify 4-6 objectives.
- c. Identify SMART goals.

Worksheet for Setting Goals

I. Mission and Objectives

GLOSSARY AND LOCATION OF COMMON TERMS

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

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

Accrual Expenses - (defined on page 5)

Accrual Receipts - (defined on page 6)

Annual Cash Flow Statement - (defined on page 13)

Appreciation - (defined on page 7)

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

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

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

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

Cash Flow Coverage Ratio - (defined on page 15)

Cash Paid - (defined on page 4)

Cash Receipts - (defined on page 6)

Change in Accounts Payable - (defined on page 5)

Change in Accounts Receivable - (defined on page 6)

Change in Inventory - (defined on page 4)

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

Current Portion - (defined on page 9)

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

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

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

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

Debt Coverage Ratio - (defined on page 15)

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

Debt to Asset Ratios - (defined on page 11)

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

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

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

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

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

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

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

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

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

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

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

Labor and Management Income - (defined on page 8)

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

Labor Efficiency - Production capacity and output per worker.

Leverage Ratio - (defined on page 11)

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

Net Farm Income - (defined on page 7)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Return on Equity Capital - (defined on page 9)

Return on Total Capital - (defined on page 9)

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

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

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

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

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

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OTHER A.E.M. EXTENSION BULLETINS

EB No	Title	Fee (if applicable)	Author(s)
2014-06	Dairy Farm Business Summary, Western New York Region, 2013	(\$12.00)	Knoblauch, W., Dymond, C., Karszes, J., Howland, B., Hanchar, J., Carlberg, V., Kimmich, R. and J. Petzen
2014-05	Dairy Farm Business Summary, New York Large Herd Farms, 300 Cows or Larger, 2013	(\$16.00)	Karszes, J., Knoblauch, W. and C. Dymond
2014-04	Agriculture-Based Economic Development in New York State: The Contribution of Agriculture to the New York Economy		Schmit, T.
2014-03	Agriculture-Based Economic Development in New York State: Assessing the Inner-Industry Linkages in the Agricultural and Food System		Schmit, T. and R. Boisvert
2014-02	Dairy Replacement Programs: Cost & Analysis 3rd Quarter 2012		Karszes, J.
2014-01	Cost of establishment and production of V. vinifera grapes in the Finger Lakes region of New York - 2013		Gomez, M.
2013-17	New York Economic Handbook, 2014		Extension Faculty and Staff
2013-16	Dairy Farm Business Summary, Northern New York Region, 2012	(\$12.00)	Knoblauch, W., Conneman, G., Dymond, C., Karszes, J., Howland, B., Buxton, S., Kiraly, M., and K. Shoen
2013-15	Dairy Farm Business Summary, Hudson and Central New York Region, 2012	(\$12.00)	Knoblauch, W., Conneman, G., Dymond, C., Karszes, J., Howland, B., Buxton, S., Kiraly, M., and K. Shoen
2013-14	Eastern Broccoli Crop Budgets		Atallah, S. and M. Gómez

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