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DAIRY FARM BUSINESS SUMMARY

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FILE COPY

NEW YORK LARGE HERD FARMS, 300 COWS OR LARGER 1993

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1993 DAIRY FARM BUSINESS SUMMARY
LARGE HERD DAIRY FARMS
300 Cows or Larger

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1993 DAIRY FARM BUSINESS SUMMARY
LARGE HERD DAIRY FARMS[1]

INTRODUCTION

Dairy farmers 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 the farm business. The information in this report represents an average of the data submitted from dairy farms with herds over 300 cows in New York State for 1993.

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 farm data and the application of modern farm business analysis techniques. This information can also be used to track changes within the business, establish goals that will enable the business to better meet its objectives, and compare the performance of the farm to other dairy producers.

The intent of this report is to provide a summary of the data for 300 cow or larger herds that participated in the Dairy Farm Business Summary for 1993.

Format

This report is composed of three sections. The first section charts the progress of the farm business over time. Nineteen of the large herd farms participated in the summary the last two years and selected factors are highlighted for these farms.

The summary and analysis section lists the averages of 22 large herd farms for the data that are calculated for the individual farms. The format follows that of the individual farm printout and contains a brief explanation of each table and chart.

The third section contains business charts for key measures of farm performance.

[1]The large herd summary is comprised of farms with 300 or more cows. Cayuga, Cortland, Erie, Ontario, Otsego, Saratoga, Tompkins, Washington and Wyoming counties had farms of this size in 1993. This report was written by Jason Karszes, Cooperative Extension agent for Erie and Wyoming counties and Stuart F. Smith, Senior Extension Associate, Farm Management. Linda Putnam was in charge of data preparation. The authors appreciate the comments and suggestions made by Ed Staehr, Cooperative Extension agent in Onondaga County. Melody Clark and Beverly Carcelli prepared the publication.

PROGRESS OF THE FARM BUSINESS

Comparing your business with average data from large DFBS cooperators that participated in both of the last two years can be helpful to establishing your goals for these parameters. 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. Please refer to the table on Page 3.

From 1992 to 1993 the average large herd expanded by adding 79 cows (14.5% increase) with only a 3.2% increase in debt per cow. A larger number of cows coupled with a steady milk output per cow led to an increase of 14.3% in the milk sold per farm (12,484,719 lbs.). Worker equivalents increased 10.9% and tillable acres increased 5.6% to handle the increased cow numbers.

While worker equivalents were added to handle the additional cow numbers, the increase was at a smaller pace. Subsequently, cows per worker increased 2.2% and milk sold per worker increased 3.1%. Due to an increase in the average cost per worker equivalent, labor costs stayed the same per hundredweight of milk produced, even though there was an increase in labor efficiency. Labor costs as a percent of milk sales increased 5.3%, primarily caused by a 3.7% decrease in milk price.

A decrease in milk price of 51 cents, while being a small percentage (-3.7%), more than offset the increase in cow numbers and, along with relatively constant operating costs, led to a large decrease in overall farm profitability. Net farm income with appreciation fell 14.7% to $266,314. Return to labor and management fell 21.7% to $66,979. Rate of return on equity capital with appreciation fell 24.6% to 10.4% and rate of return on all capital fell 19.6% to 8.6%. This demonstrates the large impact that a small change of milk price can have on profitability of the large dairy farm.

Continued monitoring of milk production costs is necessary to maintain profitability on dairy farms. Even a substantial increase in cow numbers does not offset a small change in milk price. When milk prices decrease, the costs of producing milk need to decrease in order to maintain or improve profitability. This can be acheived by producing more milk without additional expenses, by producing the same amount of milk with reduced expenses or with a combination of these two strategies.

PROGRESS OF THE FARM BUSINESS

Same 19 Large Herd Dairy Farms, 1992 & 1993

Selected Factors	Average of 19 Farms* 1992	1993	Percent Change
Size of Business			
Average number of cows	546	625	+14.5%
Average number of heifers	405	454	+12.1%
Milk sold, lbs.	10,919,293	12,484,719	+14.3%
Worker equivalent	12.24	13.58	+10.9%
Total tillable acres	1,095	1,156	+5.6%
Rates of Production			
Milk sold per cow, lbs.	19,995	19,987	-0.1%
Hay DM per acre, tons	3.40	3.35	-1.5%
Corn silage per acre, tons	15.6	16.2	+3.8%
Labor Efficiency & Costs			
Cows per worker	45	46	+2.2%
Milk sold/worker, lbs.	891,978	919,414	+3.1%
Hired labor cost/cwt.	$2.60	$2.59	-0.4%
Hired labor cost/worker	$23,156	$23,855	+3.0%
Hired labor cost as % of milk sales	19%	20%	+5.3%
Cost Control			
Grain & conc. purchased as % of milk sales	27%	28%	+3.7%
Dairy feed & crop expense per cwt. milk	$4.45	$4.44	-0.2%
Labor & mach. costs/cow	$929	$925	-0.4%
Operating cost of producing cwt. of milk	$10.46	$10.33	-1.2%
Capital Efficiency**			
Farm capital per cow	$5,698	$5,503	-3.4%
Mach. & equip. per cow	$785	$774	-1.4%
Asset turnover ratio	0.60	0.58	-3.3%
Profitability			
Net farm income w/o apprec.	$236,645	$219,410	-7.3%
Net farm income w/apprec.	$312,291	$266,314	-14.7%
Labor & mgt. income per oper./manager	$85,495	$66,979	-21.7%
Rate of return on equity capital w/ apprec.	13.8%	10.4%	-24.6%
Rate of return on all capital w/ apprec.	10.7%	8.6%	-19.6%
Financial Summary			
Farm net worth, end year	$1,859,282	$1,952,372	+5.0%
Debt to asset ratio	0.43	0.46	+7.0%
Farm debt per cow	$2,400	$2,476	+3.2%
Income Generation			
Gross milk sales per cow	$2,741	$2,638	-3.8%
Gross milk sales per cwt.	$13.71	$13.20	-3.7%
Net milk sales per cwt.	$13.26	$12.73	-4.0%
Dairy cattle sales per cow	$324	$302	-6.8%
Dairy calf sales per cow	$47	$50	+6.4%

*Farms participating both years. **Average for the year.

SUMMARY AND ANALYSIS OF THE FARM BUSINESS

Business Characteristics

Planning the 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 in this region. The following table shows important farm business characteristics and the number of farms with each characteristic.

BUSINESS CHARACTERISTICS
22 Large Herd Dairy Farms, 1993

Type of Farm	Number
Dairy	22
Part-time dairy	0
Dairy cash-crop	0
Part-time cash-crop dairy	0

Type of Ownership	Number
Owner	22
Renter	0

Type of Business	Number
Single proprietorship	6
Partnership	6
Corporation	10

Business Record System	Number
ELFAC II	0
Account Book	0
Agrifax (mail-in only)	2
On-Farm Computer	17
Other	3

Type of Barn	Number
Stanchion/Tie-Stall	0
Freestall	21
Combination	1

Milking System	Number
Bucket & carry	0
Dumping station	0
Pipeline	1
Herringbone parlor	15
Other parlor	6

Milking Frequency	Number
2x/day	3
3x/day	15
Other	4

Production Records	Number
DHIC	17
Owner-Sampler	1
Other	4
None	0

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 1993.

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.

CASH AND ACCRUAL FARM EXPENSES
22 Large Herd Dairy Farms, 1993

Expense Item	Cash Paid +	Change in Inventory or Prepaid Expense +	Change in Accounts Payable =	Accrual Expenses
Hired Labor	$309,015	$368 <<	$775	$310,158
Feed				
Dairy grain & conc.	429,363	14,815	-2,172	442,006
Dairy roughage	9,656	-1,107	588	9,137
Nondairy	0	0	0	0
Machinery				
Mach. hire, rent/lease	12,775	261 <<	0	13,036
Machinery repairs/parts	74,825	-380	238	74,683
Auto exp. (farm share)	2,340	0 <<	0	2,340
Fuel, oil & grease	28,363	548	221	29,132
Livestock				
Replacement livestock	11,581	0 <<	0	11,581
Breeding	17,266	69	-26	17,309
Vet & medicine	48,572	-2	-363	48,207
Milk marketing	54,761	-16 <<	14	54,759
Cattle lease/rent	2,988	0 <<	0	2,988
Other livestock expense	87,062	724	-36	87,750
Crops				
Fertilizer & lime	29,256	5,314	-25	34,545
Seeds & plants	17,676	2,254	0	19,930
Spray, other crop exp.	19,774	1,714	0	21,488
Real Estate				
Land/bldg./fence repair	23,404	5	-35	23,374
Taxes	23,492	-384 <<	0	23,108
Rent & lease	27,226	9 <<	18	27,253
Other				
Insurance	17,483	0 <<	0	17,483
Telephone (farm share)	2,119	-9 <<	4	2,114
Electricity (farm share)	35,038	-316 <<	-162	34,560
Interest paid	94,428	0 <<	-295	94,133
Miscellaneous	33,277	-555	-173	32,549
Total Operating	$1,411,740	$23,312	$-1,429	$1,433,623
Expansion livestock	71,227	2,500	-1,364	72,363
Machinery depreciation				67,578
Building depreciation				64,574
Total Accrual Expenses				$1,638,138

Change in prepaid expenses (noted above by <<) is a net change in non-inventory expenses that have been paid in advance of their use. If 1993 funds used to prepay 1994 leases exceed the amount of 1993 leases prepaid in 1992, the amount of this excess is entered as a negative number to exclude it from 1993 accrual lease expenses. The excess prepaid lease is charged against the future year's business operation. A decrease in prepaid lease is added to accrual expenses because it represents use of resources during this year that were paid for in past years.

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 1993 but not paid for. A decrease is subtracted because the resource was used before 1993.

Accrual expenses are the costs of inputs actually used in this year's production. They are the total of cash paid, as well as changes in inventory, prepaid expenses, and accounts payable.

CASH AND ACCRUAL FARM RECEIPTS
22 Large Herd Dairy Farms, 1993

Receipt Item	Cash Receipts	+ Change in Inventory	+ Change in Accounts Receivable	= Accrual Receipts
Milk sales	$1,534,528		$14,909	$1,549,437
Dairy cattle	89,039	$90,933	85	180,057
Dairy calves	29,276		-24	29,252
Other livestock	0	162	0	162
Crops	6,367	32,065	-422	38,010
Government receipts	20,423	0*	-4,220	16,203
Custom machine work	532		0	532
Gas tax refund	1,033		-1	1,032
Other	19,885		-792	19,093
Less nonfarm noncash cap.**		(-) 0		(-) 0
Total Receipts	$1,701,083	$123,160	$9,535	$1,833,778

*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 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 annual increase in advanced government receipts is subtracted from cash income because it represents income received in 1993 for the 1994 crop year in excess of funds earned for 1993. Likewise, a decrease is added to cash government receipts because it represents funds earned for 1993 but received in 1992.

Changes in accounts receivable are calculated by subtracting beginning year balances from end year balances. The January milk check for this December's marketings compared with the previous January's check is included as a change in accounts receivable.

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[2] 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.

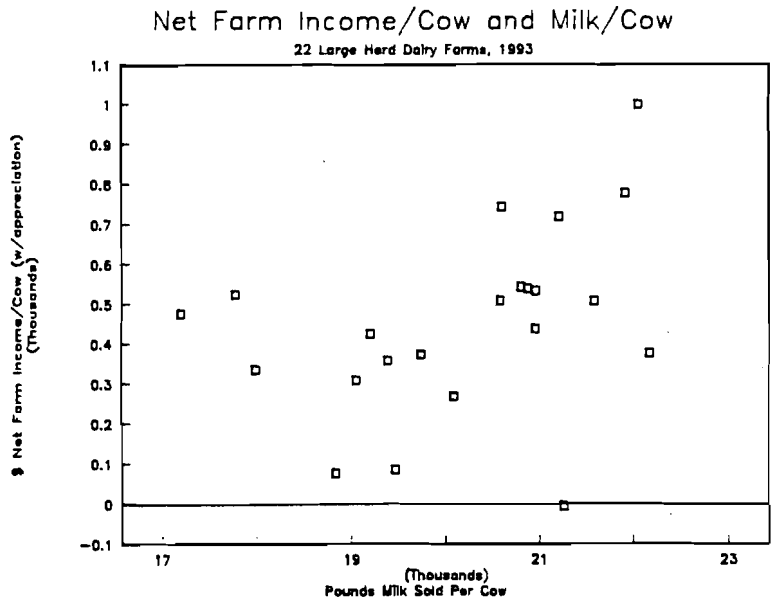
Net farm income is the return to the farm operators and other unpaid family members for their labor, management, and equity capital. It is the farm family's net annual return from working, managing, financing, and owning the farm business. This is not a measure of cash available from the year's business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

Net farm income in 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
22 Large Herd Dairy Farms, 1993

Item		Average	My Farm
Total accrual receipts		$1,833,778	$_____
Appreciation:	Livestock	7,558	_____
	Machinery	7,504	_____
	Real Estate	34,154	_____
	Other Stock/Certificates	5,499	_____
Total Including Appreciation		$1,888,493	$_____
Total accrual expenses		-1,638,138	-_____
Net Farm Income (with appreciation)		$250,355	$_____
Net Farm Income (without appreciation)		$195,640	$_____

The chart below shows the relationship between net farm income per cow (with appreciation) and pounds of milk sold per cow. Generally, farms with a higher production per cow have higher profitability per cow.



[2]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.

Return to operators' labor, management, and equity capital measures the total net farm income for the farm operator(s). It is calculated by deducting a charge for unpaid family labor from net farm income. Operators' labor is not included in unpaid family labor. Return to operators' labor, management, and equity capital has been calculated both with and without appreciation. Appreciation is an important part of the return to ownership of farm assets.

RETURN TO OPERATORS' LABOR, MANAGEMENT, AND EQUITY
22 Large Herd Dairy Farms, 1993

	Average		My Farm	
Item	With Apprec.	Without Apprec.	With Apprec.	Without Apprec.
Net farm income	$250,355	$195,640	$_____	$_____
Family labor unpaid @ $1,400 per month	-1,722	-1,722	$_____	-_____
Return to operators' labor, management, & equity	$248,633	$193,918	$_____	$_____

Labor and management income is the return which farm operators receive for their labor and management used in operating 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 the opportunity cost of using equity capital, at a real interest rate of five percent, from the return to operators' labor, management, and equity capital 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
22 Large Herd Dairy Farms, 1993

Item	Average	My Farm
Return to operators' labor, management, & equity without appreciation	$193,918	$_____
Real interest @ 5% on $1,803,210 average equity capital	-90,161	-_____
Labor & Management Income	$103,757	$_____
Labor & Management Income per 1.83 Operator/Manager	$56,698	$_____

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. Return on total capital is calculated by adding interest paid to the return on equity capital and then dividing by average farm assets to calculate the rate of return on total capital.

RETURN ON EQUITY CAPITAL AND RETURN ON TOTAL CAPITAL
22 Large Herd Dairy Farms, 1993

Item	Average	My Farm
Return to operators' labor, management, & equity capital with appreciation	$248,633	$_____
Value of operators' labor & management	- 67,046	-_____
Return on equity capital with appreciation	$181,587	$_____
Interest paid	+ 94,133	+_____
Return on total capital with appreciation	$275,720	$_____
Return on equity capital without appreciation	$126,872	$_____
Return on total capital without appreciation	$221,005	$_____
Rate of return on average equity capital:		
with appreciation	10.07%	_____%
without appreciation	7.04%	_____%
Rate of return on average total capital:		
with appreciation	8.45%	_____%
without appreciation	6.77%	_____%

Farm and Family Financial Status

The first step in evaluating the financial position of the farm is to construct a balance sheet which identifies 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 1993, leases were discounted by 7.75 percent.

Advanced government receipts are included as current liabilities. Government payments received in 1993 that are for participation in the 1994 program are the end year balance and payments received in 1992 for participation in the 1993 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.

1993 FARM BUSINESS & NONFARM BALANCE SHEET

22 Large Herd Dairy Farms, 1993

Farm Assets	Jan. 1	Dec. 31	Farm Liabilities & Net Worth	Jan. 1	Dec. 31
Current			Current		
Farm cash, checking & savings	$19,838	$13,522	Accounts payable	$24,233	$21,439
Accounts receivable	98,550	108,085	Operating debt	101,474	73,444
Prepaid exp.	9,450	7,036	Short-term	14,859	62,273
Feed & supplies	305,742	314,408	Advanced govt. rec.	0	0
			Current Portion:		
			Intermediate	0	97,398
			Long Term	0	48,066
Total	$433,580	$443,051	Total	$140,566	$302,620
Intermediate			Intermediate		
Dairy cows:			Structured debt		
owned	$536,054	$607,906	1-10 years	$541,204	$595,738
leased	801	420	Financial lease		
Heifers	221,351	247,894	(cattle/mach.)	4,682	4,931
Bulls/other lvstk.	3,210	3,468	Farm Credit stock	20,314	24,077
Mach./eq. owned	432,605	484,202			
Mach./eq. leased	3,881	4,511	Total	$566,200	$624,746
Farm Credit stock	20,314	24,077			
Other stock/cert.	61,251	66,275			
Total	$1,279,467	$1,438,753			
Long-Term			Long-Term		
Land/buildings:			Structured debt		
owned	$1,391,276	$1,539,493	>10 years	$647,287	$637,781
leased	1,756	777	Financial lease		
			(structures)	1,756	777
Total	$1,393,032	$1,540,270	Total	$649,043	$638,558
			Total Farm Liab.	$1,355,809	$1,565,924
Total Farm Assets	$3,106,079	$3,422,074	FARM NET WORTH	$1,750,270	$1,856,150

Nonfarm Assets, Liabilities & Net Worth (Average of 8 farms reporting)

Assets	Jan. 1	Dec. 31	Liabilities & Net Worth	Jan. 1	Dec. 31
Personal cash, chkg. & savings	$1,492	$816	Nonfarm Liab.	$12,087	$11,367
Cash value life ins.	13,992	12,380			
Nonfarm real estate	31,250	32,500			
Auto (personal sh.)	2,125	1,813			
Stocks & bonds	763	975			
Household furn.	5,125	5,375			
All other	31,755	29,569	NONFARM NET WORTH	$74,414	$72,060
Total Nonfarm	$86,501	$83,427			

Farm & Nonfarm Assers, Liabilities & Net Worth*	Jan. 1	Dec. 31
Total Assets	$3,192,580	$3,505,501
Total Liabilities	1,367,896	1,577,291
TOTAL FARM & NONFARM NET WORTH	$1,824,684	$1,928,210

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

The following condensed balance sheet, including deferred taxes, contains average data from only those farmers who elected to provide the additional information required to compute deferred taxes.

Deferred taxes represent an estimate of the taxes that would be paid if the farm were sold at year end fair market values and date on the balance sheet. Accuracy is dependent on the accuracy of the market values and the tax basis data provided. Any tax liability for assets other than livestock, machinery, land, buildings and nonfarm assets is excluded. It is assumed that all gain on purchased livestock and machinery is ordinary gain and that listed market values are net of selling costs. The effects of investment tax credit carryover and recapture, carryover of operating losses, alternative minimum taxes and other than average exemptions and deductions are excluded because they have only minor influence on the taxes of most farms. However, they could be important.

CONDENSED BALANCE SHEET INCLUDING DEFERRED TAXES
December 31, 1993
Average of 25 New York Dairy Farms Reporting Data, 1993

ASSETS		LIABILITIES & NET WORTH	
		Current debts & payables	$49,095
		Current deferred taxes	28,723
Total Current Assets	$88,137	Total Current Liabilities	$77,818
		Intermediate debts & leases	$96,341
		Intermediate deferred taxes	91,463
Total Intermediate Assets	$312,057	Total Intermediate Liabilities	$187,804
		Long term debts & leases	$77,496
		Long term deferred taxes	51,632
Total Long Term Assets	$326,514	Total Long Term Liabilities	$129,128
TOTAL FARM ASSETS	$726,708	TOTAL FARM LIABILITIES	$394,750
		Farm Net Worth	$331,959
		Percent Equity (Farm)	46%
		Nonfarm debts	$448
		Nonfarm deferred taxes	12,359
Total Nonfarm Assets	$57,102	Total Nonfarm Liabilities	$12,807
TOTAL ASSETS	$783,810	TOTAL LIABILITIES	$407,557
		Total Net Worth	$376,253
		Percent Equity (Total)	48%

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. Debt levels per productive unit represent old standards that are still useful if used with measures of cash flow and repayment ability.

BALANCE SHEET ANALYSIS
22 Large Herd Dairy Farms, 1993

Item	Average	My Farm
Financial Ratios - Farm:		
Percent equity	54%	_____%
Debt/asset ratio: total	0.46	_____
long-term	0.41	_____
intermediate/current	0.49	_____
Farm Debt Analysis:		
Accounts payable as % of total debt	1%	_____%
Long-term liabilities as a % of total debt	41%	_____%
Current & intermediate liabilities as a % of total debt	59%	_____%

Farm Debt Levels:	Per Cow	Per Tillable Acre Owned	Per Cow	Per Tillable Acre Owned
Total farm debt	$2,490	$2,276	$_____	$_____
Long-term debt	1,015	928	_____	_____
Intermediate & current debt	1,474	1,348	_____	_____

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
22 Large Herd Dairy Farms, 1993

Item	Average of Region's Farms			
		Real Estate		Machinery & Equipment
Value beginning of year		$1,391,276		$432,605
Purchases	$232,332		$123,492	
Gift/inheritance	+ 0		+ 0	
Lost capital	- 45,482		- 0	
Sales	- 8,214		- 11,822	
Depreciation	- 64,574		- 67,578	
Net investment		= 114,062		= 44,092
Appreciation		+ 34,154		+ 7,504
Value end of year		$1,539,493		$484,202

*$32,361 land and $199,971 buildings and/or depreciable improvements.

Statement of Owner Equity

The Statement of Owner Equity has two purposes. It allows (1) verification that the accrual income statement and market value balance sheet are interrelated and 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) and (3) increases or decreases in the value (price) of assets owned by the business (called change in valuation equity).

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

STATEMENT OF OWNER EQUITY (RECONCILIATION)
22 Large Herd Dairy Farms, 1993

Item	Average		My Farm	
Beginning of year farm net worth		$1,750,270		$_____
Net farm income w/o appreciation	$ 195,640		$_____	
+ Nonfarm cash income	+ 18,325		+_____	
- Personal withdrawals & family expenditures excluding nonfarm borrowings	- 117,776		-_____	
Retained Earnings		+ 96,189		$_____
Nonfarm noncash transfers to farm	$ 0		$_____	
+ Cash used in business from nonfarm capital	+ 3,927		+_____	
- Note/mortgage from farm real estate sold (nonfarm)	- 0		-_____	
Contributed/Withdrawn Capital		+ 3,927		+$_____
Appreciation	$ 54,715		$_____	
- Lost capital	- 45,482		-_____	
Change in Valuation Equity		+ 9,233		+$_____
Imbalance/Error		- 3,471		-$_____
End of year farm net worth*		=$1,856,150		=$_____
Change in net worth w/apprec.		$ 105,880		$_____
Change in Net Worth				
Without appreciation		$51,165		$_____
With appreciation		$105,880		$_____

*May not add 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
22 Large Herd Dairy Farms, 1993

Item		Average	
Cash Flow from Operating Activities			
Cash farm receipts	$1,701,083		
- Cash farm expenses	1,411,740		
= Net cash farm income		$289,343	
Nonfarm income	$ 18,325		
- Personal withdrawals/family expenses including nonfarm debt payments	117,776		
+ Net cash nonfarm income		$-99,451	
= Net Provided by Operating Activities			$189,892
Cash Flow From Investing Activities			
Sale of Assets: Machinery	$ 11,822		
+ real estate	8,214		
+ other stock/cert.	2,266		
= Total asset sales		$ 22,302	
Capital purchases: expansion livestock	$ 71,227		
+ machinery	123,492		
+ real estate	232,332		
+ other stock/cert.	1,791		
- Total invested in farm assets		$428,842	
= Net Provided by Investment Activities			$-406,540
Cash Flow From Financing Activities			
Money borrowed (inter. & long term)	$ 406,711		
+ Money borrowed (short-term)	61,697		
+ Increase in operating debt	0		
+ Cash from nonfarm cap. used in business	3,927		
+ Money borrowed - nonfarm	0		
= Cash inflow from financing		$472,335	
Principal payments (inter. & long-term)	$ 216,219		
+ Principal payments (short-term)	14,283		
+ Decrease in operating debt	28,030		
- Cash outflow for financing		$258,532	
= Net Provided by Financing Activities			$213,803
Cash Flow From Business			
Beginning farm cash, checking & savings		$ 19,838	
- Ending farm cash, checking & savings		13,522	
= Net Provided from Reserves			$ 6,316
Imbalance (error)			$ 3,471

ANNUAL CASH FLOW STATEMENT

22 Large Herd Dairy Farms, 1993

Item		Average	
Cash Flow from Operating Activities			
Cash farm receipts	$_____		
- Cash farm expenses	_____		
= Net cash farm income		$_____	
Nonfarm income	$_____		
- Personal withdrawals/family expenses including nonfarm debt payments	_____		
+ Net cash nonfarm income		$_____	
= Net Provided by Operating Activities			$_____
Cash Flow From Investing Activities			
Sale of Assets: Machinery	$_____		
+ real estate	_____		
+ other stock/cert.	_____		
= Total asset sales		$_____	
Capital purchases: expansion livestock	$_____		
+ machinery	_____		
+ real estate	_____		
+ other stock/cert.	_____		
- Total invested in farm assets		$_____	
= Net Provided by Investment Activities			$_____
Cash Flow From Financing Activities			
Money borrowed (inter. & long term)	$_____		
+ Money borrowed (short-term)	_____		
+ Increase in operating debt	_____		
+ Cash from nonfarm cap. used in business	_____		
+ Money borrowed - nonfarm	_____		
= Cash inflow from financing		$_____	
Principal payments (inter. & long-term)	$_____		
+ Principal payments (short-term)	_____		
+ Decrease in operating debt	_____		
- Cash outflow for financing		$_____	
= Net Provided by Financing Activities			$_____
Cash Flow From Business			
Beginning farm cash, checking & savings		$_____	
- Ending farm cash, checking & savings		_____	
= Net Provided from Reserves			$_____
Imbalance (error)			$_____

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 1994. The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to planned 1994 debt payments shown below.

FARM DEBT PAYMENTS PLANNED
Same 19 Large Herd Dairy Farms, 1992 & 1993

	Average			My Farm		
	1993 Payments		Planned	1993 Payments		Planned
Debt Payments	Planned	Made	1994	Planned	Made	1994
Long-term	$82,214	$79,789	$97,740	$_____	$_____	$_____
Intermediate-term	180,483	239,631	151,677	_____	_____	_____
Short-term	14,931	19,618	31,871	_____	_____	_____
Operating (net reduction)	7,649	34,545	3,973	_____	_____	_____
Accounts payable (net reduction)	5,474	4,876	4,050	_____	_____	_____
Total	$290,752	$378,459	$289,311	$_____	$_____	$_____
Per cow	$465	$606		$_____	$_____	
Per cwt. 1993 milk	$2.33	$3.03		$_____	$_____	
Percent of total 1993 receipts	15%	19%		_____	_____	
Percent of 1993 milk receipts	18%	23%		_____	_____	

The cash flow coverage ratio measures the ability of the farm business to meet its planned debt payments schedule. The ratio shows the percentage of payments planned for 1993 (as of December 31, 1992) that could have been made with the amount available for debt service in 1993. Farmers who did not participate in DFBS in 1992 have their 1993 cash flow coverage ratio based on planned debt payments for 1994.

CASH FLOW COVERAGE RATIO
Same 19 Large Herd Dairy Farms, 1992 & 1993

Item		Average	My Farm
	Cash farm receipts	$1,803,845	$_____
	- Cash farm expenses	1,484,604	_____
	+ Interest paid	99,165	_____
	- Net personal withdrawals from farm**	109,357	_____
(A)	= Amount Available for Debt Service	$309,049	$_____
(B)	= Debt Payments Planned for 1993 (as of 12/31/92)	$290,752	$_____
(A+B)	= Cash Flow Coverage Ratio for 1993	1.06	_____

**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

22 Large Herd Dairy Farms, 1993

Item	Regional Average Per Cow	Regional Average Per Cwt.	Total
No. cows and cwt. milk	590.2	117,660.3	
Accrual Operating Receipts			
Milk	$2,625.27	$13.17	$1,549,437
Dairy cattle	305.08	1.53	180,057
Dairy calves	49.56	0.25	29,252
Other livestock	0.27	0.00	162
Crops	64.40	0.32	38,010
Misc. receipts	62.46	0.31	36,862
Total	$3,107.05	$15.58	$1,833,779
Accrual Operating Expenses			
Hired labor	$525.52	$2.64	$310,158
Dairy grain & concentrate	748.91	3.76	442,006
Dairy roughage	15.48	0.08	9,137
Nondairy feed	0.00	0.00	0
Mach. hire/rent/lease	22.09	0.11	13,036
Mach. repair/parts & auto	130.50	0.65	77,023
Fuel, oil & grease	49.36	0.25	29,132
Replacement livestock	19.62	0.10	11,581
Breeding	29.33	0.15	17,309
Vet & medicine	81.68	0.41	48,207
Milk marketing	92.78	0.46	54,759
Cattle lease	5.06	0.02	2,988
Other livestock expense	148.68	0.75	87,750
Fertilizer & lime	58.53	0.29	34,545
Seeds & plants	33.77	0.17	19,930
Spray/other crop expenses	36.41	0.18	21,488
Land, building, fence repair	39.60	0.20	23,374
Taxes	39.15	0.20	23,108
Real estate rent/lease	46.18	0.23	27,253
Insurance	29.62	0.15	17,483
Utilities	62.14	0.31	36,673
Miscellaneous	55.15	0.28	32,549
Total Less Interest Paid	$2,269.55	$11.39	$1,339,489
Net Accrual Operating Income			
(without interest paid)	$837.50	$4.19	$494,290
- Change in livestock/crop inventory*	208.68	1.05	123,160
- Change in accounts receivable	16.16	0.08	9,535
+ Change in feed/supply inventory**	39.50	0.20	23,312
+ Change in accts. payable***	-1.92	-0.01	-1,134
NET CASH FLOW	$650.24	$3.25	$383,773
- Net personal withdrawals from farm (see footnote on p. 16)	$168.50	$0.84	$99,451
Available for Farm Debt Payments & Investments	$481.74	$2.41	$284,322
- Farm debt payments	588.32	2.95	347,228
Available for Farm Investment	$-106.58	$-0.54	$-62,906
- Capital purchases: cattle, machinery & improvements	$726.60	$3.64	$428,842

*Includes change in advance government receipts.

**Includes change in prepaid expenses.

***Excludes change in interest account payable.

ANNUAL CASH FLOW WORKSHEET

22 Large Herd Dairy Farms, 1993

Item	My Farm Per Cow or Per Cwt.	My Farm Expected Change	1994 Projection
No. cows or cwt. milk	_____	_____	_____
Accrual Operating Receipts			
Milk	$_____	$_____	$_____
Dairy cattle	_____	_____	_____
Dairy calves	_____	_____	_____
Other livestock	_____	_____	_____
Crops	_____	_____	_____
Misc. receipts	_____	_____	_____
Total	$_____	$_____	$_____
Accrual Operating Expenses			
Hired labor	$_____	$_____	$_____
Dairy grain & concentrate	_____	_____	_____
Dairy roughage	_____	_____	_____
Nondairy feed	_____	_____	_____
Mach. hire/rent/lease	_____	_____	_____
Mach. repair/parts & auto	_____	_____	_____
Fuel, oil & grease	_____	_____	_____
Replacement livestock	_____	_____	_____
Breeding	_____	_____	_____
Vet & medicine	_____	_____	_____
Milk marketing	_____	_____	_____
Cattle lease	_____	_____	_____
Other livestock expense	_____	_____	_____
Fertilizer & lime	_____	_____	_____
Seeds & plants	_____	_____	_____
Spray/other crop expenses	_____	_____	_____
Land, building, fence repair	_____	_____	_____
Taxes	_____	_____	_____
Real estate rent/lease	_____	_____	_____
Insurance	_____	_____	_____
Utilities	_____	_____	_____
Miscellaneous	_____	_____	_____
Total Less Interest Paid	$_____	$_____	$_____
Net Accrual Operating Income (without interest paid)	$_____	$_____	$_____
- Change in livestock/crop inventory*	_____	_____	_____
- Change in accounts receivable	_____	_____	_____
+ Change in feed/supply inventory**	_____	_____	_____
+ Change in accounts payable***	_____	_____	_____
NET CASH FLOW	$_____	$_____	$_____
- Net personal withdrawals from farm(see footnote p.16)	$_____	$_____	$_____
Available for Farm Debt Payments & Investments	$_____	$_____	$_____
- Farm debt payments	_____	_____	_____
Available for Farm Investment	$_____	$_____	$_____
- Capital purchases: cattle, machinery & improvements	$_____	$_____	$_____
Additional Capital Needed	$_____	$_____	$_____

*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, how well crops are producing, and what it costs to produce them is important to evaluating alternative cropping and feed purchasing alternatives.

LAND RESOURCES AND CROP PRODUCTION
22 Large Herd Dairy Farms, 1993

Item	Average			My Farm		
Land	Owned	Rented	Total	Owned	Rented	Total
Tillable	688	439	1,127	_____	_____	_____
Nontillable	50	11	61	_____	_____	_____
Other nontillable	202	5	207	_____	_____	_____
Total	940	455	1,395	_____	_____	_____

Crop Yields	Farms	Acres*	Prod/Acre	Acres	Prod/Acre
Hay crop	22	430	3.40 tn DM	_____	_____ tn DM
Corn silage	22	499	16.21 tn	_____	_____ tn
			5.41 tn DM		_____ tn DM
Other forage	2	158	2.09 tn DM	_____	_____ tn DM
Total forage	22	943	4.44 tn DM	_____	_____ tn DM
Corn grain	9	202	108.61 bu	_____	_____ bu
Oats	1	50	58.76 bu	_____	_____ bu
Wheat	2	90	28.94 bu	_____	_____ bu
Other crops	6	174		_____	
Tilllable pasture	7	82		_____	
Idle	8	48		_____	
Total Tillable Acres	22	1,127		_____	

*This column represents the average acreage for the farms producing that crop. Average acreages including those farms not producing were corn grain 83, oats 2, tillable pasture 26, and idle 17.

Average crop acres and yields compiled for the region 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
22 Large Herd Dairy Farms, 1993

Item	Average	My Farm
Total tillable acres per cow	1.91	_____
Total forage acres per cow	1.60	_____
Harvested forage dry matter, tons per cow	7.10	_____

Cropping Analysis (continued)

A number of cooperators have allocated crop expenses among the hay crop, corn, and other crops produced. Fertilizer and lime, seeds and plants, and spray and other crop expenses have been computed per acre and per production unit for hay and corn. Additional expense items such as fuels, labor, and machinery repairs are not included. Rotational grazing was not used on these farms.

CROP RELATED ACCRUAL EXPENSES
Large Herd Dairy Farms Reporting, 1993

Item	Total Per Till. Acre	All Corn Per Acre	Corn Silage Per Ton DM	Corn Grain Per Dry Sh. Bu.	Hay Crop Per Acre	Hay Crop Per Ton DM
No. of farms reporting	22	10			10	
Ave. number of acres	1,127	598			391	
Fert./lime	$30.65	$36.03	$ 6.58	$0.31	$20.58	$5.99
Seed/plants	17.68	24.23	4.43	0.21	14.87	4.33
Spray/other crop exp.	19.07	25.67	4.69	0.22	7.51	2.19
TOTAL	$67.40	$85.93	$15.70	$0.74	$42.96	$12.51
My Farm:						
Fert./lime	$_____	$_____	$_____	$_____	$_____	$_____
Seeds/plants	_____	_____	_____	_____	_____	_____
Spray/other crop exp.	_____	_____	_____	_____	_____	_____
TOTAL	$_____	$_____	$_____	$_____	$_____	$_____

Most machinery costs are associated with crop production 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
22 Large Herd Dairy Farms, 1993

Machinery Expense Item	Average Total Expenses	Average Per Till. Acre	My Farm Total Expenses	My Farm Per Till. Acre
Fuel, oil & grease	$29,132	$25.85	$_____	$_____
Machinery repairs & parts	74,683	66.27	_____	_____
Machine hire, rent & lease	13,036	11.57	_____	_____
Auto expense (farm share)	2,340	2.08	_____	_____
Interest (5%)	22,920	20.34	_____	_____
Depreciation	67,578	59.96	_____	_____
Total	$209,690	$186.06	$_____	$_____

Dairy Analysis

Analysis of the dairy enterprise can reveal a great deal about the 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 7 and 8.

DAIRY HERD INVENTORY
22 Large Herd Dairy Farms, 1993

	Dairy Cows		Heifers					
			Bred		Open		Calves	
Item	No.	Value	No.	Value	No.	Value	No.	Value
Beginning year (owned)	547	$536,054	209	$146,875	82	$42,892	107	$31,584
+ Change w/o apprec.		69,397		-13,348		28,372		6,511
+ Appreciation		2,455		540		3,673		795
End year (owned)	620	$607,906	174	$134,067	150	$74,937	127	$38,890
End including leased	629							
Average number	590		430 (all age groups)					
My Farm:								
Beginning year (owned)	____	$_____	___	$_____	___	$_____	___	$_____
+ Change w/o apprec.		_____		_____		_____		_____
+ Appreciation		_____		_____		_____		_____
End of year (owned)	____	$_____	___	$_____	___	$_____	___	$_____
End including leased	____							
Average number	____		___ (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
22 Large Herd Dairy Farms, 1993

Item	Average	My Farm
Total milk sold, lbs.	11,766,034	_____
Milk sold per cow, lbs.	19,936	_____
Average milk plant test, percent butterfat	3.64	_____

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 AND COST OF PRODUCING MILK
22 Large Herd Dairy Farms, 1993

	Average			My Farm		
Item	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
Accrual Costs of Producing Milk						
Operating costs	$1,221,644	$2,070	$10.38	$_____	$_____	$_____
Purchased inputs costs	$1,353,796	$2,294	$11.51	$_____	$_____	$_____
Total Costs	$1,512,725	$2,563	$12.86	$_____	$_____	$_____
Accrual Receipts From Milk	$1,549,437	$2,625	$13.17	$_____	$_____	$_____

The accrual operating expenses most commonly associated with the dairy enterprise are listed in the table below. Evaluating these costs per unit of production enables an evaluation of the dairy enterprise.

DAIRY RELATED ACCRUAL EXPENSES
22 Large Herd Dairy Farms, 1993

	Average		My Farm	
Item	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Purchased dairy grain & conc.	$749	$3.76	$_____	$_____
Purchased dairy roughage	15	0.08	_____	_____
Total Purchased Dairy Feed	$764	$3.84	$_____	$_____
Purchased grain & conc. as % of milk receipts	29%		__%	
Purchased feed & crop exp.	$893	$4.48	$_____	$_____
Purchased feed & crop exp. as % of milk receipts	34%		__%	
Breeding	$ 29	$0.15	$_____	$_____
Veterinary & medicine	82	0.41	_____	_____
Milk marketing	93	0.47	_____	_____
Cattle lease	5	0.03	_____	_____
Other livestock expenses	149	0.75	_____	_____

Cost of Producing Milk

The cost of producing milk has been compiled below using the whole farm method. The following steps are used in the calculations.

1. The cost of expansion livestock is added to total accrual operating expenses to offset any related inventory increase included in accrual receipts.

2. Accrual milk sales are deducted form total accrual receipts to get total accrual nonmilk receipts which are used to represent total nonmilk operating costs.

3. Total accrual nonmilk receipts are subtracted from total accrual operating expenses including expansion livestock to calculate the operating costs of producing milk.

4. Machinery depreciation and building depreciation are added to operating costs to determine the purchased inputs cost of producing milk.

5. The opportunity costs of equity capital, operator's labor and operator's management and the value of unpaid family labor are added to all other costs to obtain the total costs of producing milk. This cost includes all the operating, depreciation, and imputed costs of producing milk.

COST OF PRODUCING MILK WHOLE FARM METHOD CALCULATIONS
22 Large Herd Dairy Farms, 1993

Item	Average 22 Farms	
Total Accrual Operating Expenses	$1,433,623	
Expansion Livestock, Accrual	+ 72,363	
1. Total Accrual Operating Expenses, Including Expansion Livestock		$1,505,986
Total Accrual Receipts	$1,833,778	
Milk Sales, Accrual	- 1,549,437	
2. Total Accrual Nonmilk Receipts		- 284,341
3. Operating Costs of Producing Milk		$1,221,645
Cwt. of Milk Sold	÷ 117,660.3	
Operating Costs/Cwt.	= $10.38	
Machinery Depreciation		+ 67,578
Building Depreciation		+ 64,574
4. Purchased Inputs Cost of Producing Milk		$1,353,797
Cwt. of Milk Sold	÷ 117,660.3	
Purchased Inputs Cost/Cwt.	= $11.51	
Family Labor Unpaid ($1,400/month)		+ 1,722
Real Interest on Equity Cap.		+ 90,161
Value of Operating Labor & Management		+ 67,046
5. Total Costs of Producing Milk		$1,512,726
Cwt. Milk Sold	÷ 117,660.3	
Total Costs/Cwt.	= $12.86	

Capital and Labor Efficiency Analysis

Capital efficiency factors measure how intensively 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
22 Large Herd Farms, 1993

Item	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
Farm capital	$249,329	$5,530	$2,896	$4,744
Real estate		2,485		2,132
Machinery & equipment	35,336	784	410	
Asset turnover ratio	.58			
My Farm:				
Farm capital	$_____	$_____	$_____	$_____
Real estate	_____	_____	_____	_____
Machinery & equipment	_____	_____	_____	_____
Asset turnover ratio	_____			

LABOR FORCE INVENTORY AND ANALYSIS
22 Large Herd Dairy Farms, 1993

Labor Force	Months	Age	Years of Education	Value of Labor & Mgmt.
Operator number 1	12.00	46	15	$39,682
Operator number 2	6.05	42	15	17,909
Operator number 3	3.86	43	14	9,455
Family paid	4.73			
Family unpaid	1.23			
Hired	129.23			
Total	157.10	/ 12 = 13.09 Worker Equivalent		
		1.83 Operator/Manager Equivalent		
My Farm: Total	_____	/ 12 = _____ Worker Equivalent		
Operator's	_____	/ 12 = _____ Operator/Manager Equivalent		

Labor Efficiency	Average Total	Average Per Worker	My Farm Total	My Farm Per Worker
Cows, average number	590	45	_____	_____
Milk sold, pounds	11,766,034	898,758	_____	_____
Tillable acres	1,127	86	_____	_____
Work units	5,732	438	_____	_____

Labor Costs	Average Total	Average Per Cow	Average Per Cwt.	My Farm Total	My Farm Per Cow	My Farm Per Cwt.
Value of operator(s) labor ($1,400/mo.)	$30,674	$52	$0.26	$_____	$_____	$_____
Family unpaid ($1,400/mo.)	1,722	3	0.01	_____	_____	_____
Hired	310,159	526	2.64	_____	_____	_____
Total Labor	$342,555	$580	$2.91	$_____	$_____	$_____
Machinery Cost	209,690	355	1.78	_____	_____	_____
Total Labor & Mach.	$552,245	936	$4.69	$_____	$_____	$_____

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 this summary. Each column of the chart is independent of the others. The farms which are in the top 20 percent for one factor would not necessarily be the same farms which make up the 20 percent for any other factor. Use this information to identify business areas where more challenging goals are needed.

FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS

22 Large Herd Dairy Farms, 1993

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	Number 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
(11)*	(11)	(11)	(10)	(9)	(9)	(11)	(11)
23.2	1,174	22,553,675	21,798	5.0	19	53	1,052,581
12.4	551	11,544,889	20,963	3.9	17	46	963,390
10.4	401	8,378,335	20,252	3.3	16	44	877,787
9.1	366	7,457,236	19,276	2.6	14	39	770,610
8.1	324	6,254,412	17,952	1.8	12	32	644,383

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
(10)	(10)	(11)	(11)	(10)	(10)
$575	22%	$244	$ 811	$ 758	$3.64
745	26	338	881	871	4.38
762	29	366	949	911	4.53
790	32	417	1,023	942	4.88
887	34	483	1,132	1,079	5.22

Hired Labor Expense			Expenses Per Cwt.		
Per Cwt.	Per Hired Worker Equiv.	As % of Milk Sales	Milk Marketing	Veterinary & Medicine	Other Livestock
(11)	(CALC)	(CALC)	(10)	(10)	(10)
$1.95	$19,840	15%	$0.28	$0.30	$0.45
2.22	24,179	16	0.31	0.36	0.62
2.55	26,333	20	0.39	0.39	0.72
2.81	30,895	21	0.55	0.44	0.78
3.13	32,848	29	1.03	0.53	1.28

*( ) = page number of the participant's DFBS where factor is located.
CALC=Need to calculate for each farm; refer to the Glossary for definition.

Cost Control (con't)

Machinery & Crop Expense		Operating Cost		Total Cost	
Per Tillable Acre	Per Ton Dry Matter	Per Cow	Per Cwt.	Per Cow	Per Cwt.
(CALC)	(CALC)	(10)	(10)	(10)	(10)
$126	$31	$1,826	$ 9.24	$2,306	$11.70
145	36	1,985	9.87	2,509	12.26
154	46	2,097	10.32	2,603	12.74
189	58	2,148	10.79	2,742	13.66
255	71	2,348	11.45	2,950	14.74

Expense Ratios

Operating	Depreciation	Interest
(CALC)	(CALC)	(CALC)
74.2%	4.2%	2.0%
78.6	5.2	3.2
81.6	6.1	4.8
84.8	7.7	5.8
89.4	11.2	7.5

Income Generation

Milk Receipts Per Cwt.	Net Milk Receipts Per Cwt.	Milk Receipts Per Cow	Dairy Cattle Sales Per Cow	Dairy Calf Sales Per Cow
(10)	(CALC)	(10)	(10)	(10)
$13.73	$13.13	$2,942	$568	$64
13.39	12.86	2,777	320	56
13.16	12.60	2,630	242	48
12.92	12.49	2,526	219	44
12.75	12.20	2,370	187	38

Debt Management

Farm Debt Per Cow		Cost of	Planned Debt Payments	
Total	Intermediate & Long Term	Borrowed Capital	Per Cow	Per Cwt.
(5)	(5)	(CALC)	(8)	(8)
$1,208	$ 800	3.5%	$55	$0.87
1,969	1,471	5.8	288	1.71
2,319	1,865	6.5	406	2.48
2,795	2,338	6.9	585	3.26
3,464	2,914	7.8	876	4.45

Cash Flow Analysis				
Amount Available for Family Living, Debt Service & Investment		Personal Withdrawals & Family Expenditures		Cash Flow Coverage Ratio
Per Cow	Per Cwt.	Per Cow	Per Cwt.	
(12)	(12)	(CALC)	(CALC)	(8)
$988	$4.74	$406	$2.00	2.59
682	3.39	243	1.19	1.36
601	3.03	161	0.82	0.86
490	2.50	135	0.67	0.70
293	1.50	77	0.39	0.28

Capital Efficiency				
Farm Capital Per Cow	Real Estate Investment Per Cow	Machinery Investment Per Cow	Total Labor Cost Per Worker Equivalent	Asset Turnover Ratio
(11)	(11)	(11)	(CALC)	(11)
$3,953	$1,246	$ 536	$19,112	0.78
4,841	1,750	663	22,149	0.66
5,471	2,351	793	24,734	0.55
6,187	2,935	936	28,646	0.49
7,789	4,030	1,314	30,858	0.44

Solvency				
Percent Equity	Leverage Ratio	Debt to Asset Ratios		
		Total	Current/Intermed.	Long Term
(5)	(CALC)	(5)	(5)	(5)
74%	0.29	0.22	0.18	0.00
59	0.56	0.39	0.36	0.20
54	0.73	0.44	0.48	0.33
49	0.90	0.49	0.55	0.62
41	1.46	0.58	0.76	0.75

Profitability				
Labor and Mgmt. Income Per Operator	Rate Return to Equity Capital		Rate Return to All Capital	
	Without Appreciation	With Appreciation	Without Appreciation	With Appreciation
(3)	(3)	(3)	(3)	(3)
$250,416	17.1%	20.2%	11.5%	13.3%
73,228	9.8	14.9	8.2	10.9
47,621	6.9	9.4	6.2	8.2
24,710	3.7	5.9	4.9	5.7
-39,722	-4.0	-1.1	-0.9	0.9

Net Farm Income Without Appreciation		Net Farm Income From Operations Ratio	Net Income Efficiency Ratio
Per Cow	Per Cwt.		
(CALC)	(CALC)	(CALC)	(CALC)
$645	$3.03	18.3%	20.2%
421	2.06	13.4	14.2
300	1.53	10.0	8.4
251	1.28	8.3	5.8
26	0.15	0.9	2.2

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 proper 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 designate a Time when each goal will be achieved.

Goal setting on a dairy farm does not have to be a complex process. In many cases it provides 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

_____

_____

_____

_____

_____

_____

_____

_____

Worksheet for Setting Goals (Continued)

II. Goals

What	How	When	Who is Responsible

Summarize Your Business Performance

The Farm Business Charts on pages 25-27 can be used to help identify strengths and weaknesses of your farm business. Identify three major strengths and three areas of your farm business that need improvement.

Strengths:

Needs improvement:

GLOSSARY AND LOCATION OF COMMON TERMS

Some of the following definitions include formulas for calculating the factor being described. Page references to the individual Dairy Farm Business Summary are provided in parentheses for ease of calculation for your farm.

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 6)

Accrual Receipts - (defined on page 6)

Annual Cash Flow Statement - (defined on page 14)

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 16)

Cash Paid - (defined on page 4)

Cash Receipts - (defined on page 6)

Change in Accounts Payable - (defined on page 6)

Change in Accounts Receivable - (defined on page 6)

Change in Inventory - (defined on page 4)

Cost of Borrowed Capital - A weighted average of the cost of borrowed capital to the farm. Calculate by multiplying end of year principal of each loan that is borrowed by the interest rate for each loan at that time. Add up each amount that is calculated for each loan and then divide by total amount of borrowed funds. Do not include accounts payable. This information is found on pages 8 & 9 of the data entry form.

Current Portion - (defined on page 9)

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.

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

Debt to Asset Ratios - (defined on page 10)

Deferred Taxes - (defined on page 9)

Depreciation Expense Ratio - The percentage of Total Accrual Receipts that is charged to depreciation expense. Machinery Depreciation (DFBS p. 2) plus Building Depreciation (p. 2) divided by Total Accrual Receipts (p. 3) times 100.

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 16.

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 leassee 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 per Hired Worker Equivalent - The total cost to the farm per hired worker equivalent. Divide accrual hired labor expense (p. 2) by number of hired plus family paid worker equivalent (p. 11).

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 (p. 2) by accrual milk sales (p. 3).

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 - The percentage of Total Accrual Receipts that is used for interest expense. Total Accrual Interest (p. 2) divided by Total Accrual Receipts (p. 3) times 100.

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

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

Machinery & Crop Expenses per Tillable Acre - A measure of the cost to produce crops on a tillable acre basis. Add total crop expenses (p. 9) and total machinery expenses (p. 9), then divide by number of tillable acres, owned & rented (p. 9).

Machinery & Crop Expense per Ton Dry Matter - A measure of the cost per ton of DM to produce a crop. It is not a measure of total costs to produce feed. Add total crop expenses (p. 9) and total machinery expenses (p. 9), then divide by total forage, production, tons DM (p. 9).

Net Farm Income - (defined on page 7).

Net Farm Income from Operations Ratio - The percentage of each gross dollar that is generated that is net farm income. Net Farm Income without Appreciation (p. 3) divided by Total Accrual Receipts (p. 3) times 100.

Net Farm Income without Appreciation per Cwt. - The amount of net farm income, without appreciation, per cwt., that the farm generated. Divide net farm income without appreciation (p. 3) by number of cwt. of milk sold, which is total milk sold (p. 10) divided by 100.

Net Farm Income without Appreciation per Cow - The amount of net farm income, without appreciation, per cow that the farm generated. Divide net farm income without appreciation (p. 3) by average number of cows for the year (p. 10).

Net Income Efficiency Ratio - A measure of how efficiently the business is in generating net income, taking into account the differences in number of operators, debt levels, and amount of unpaid family labor being used on a farm. Net farm income without appreciation minus unpaid family labor charge (p. 3), plus Accrual Interest Paid (p. 2), divided by number of operators (p. 3), divided by Total Accrual Receipts (p. 3) times 100.

Net Milk Receipts per Cwt. - The mail box price received by farmers before any farmer authorized assignments or deductions. Accrual Receipts from milk, per cwt. (p. 10) minus accrual milk marketing expense per cwt. (p. 10).

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 22).

Operating Expense Ratio - The percentage of Total Accrual Receipts that is used for operating expenses, excluding interest & depreciation. Total Accrual Expenses (p. 2) minus Machinery Depreciation (p. 2), minus Building Depreciation (p. 2), minus Accrual Interest Expense (p. 2), divided by Total Accrual Receipts (p. 3) times 100.

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; bedding, DHIC, milk house and parlor supplies, livestock board, registration fees and transfers.

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.

Personal Withdrawals & Family Expenditures per Cwt. - The amount of money on a per cwt. basis that the family uses for family living and personal expenses. This is the total amount, per cwt., used by the family, including farm and nonfarm income. Personal withdrawals/family expense, including nonfarm debt payments (p. 7) divided by pounds milk sold (p. 10) times 100.

Personal Withdrawals & Family Expenditures per Cow - The amount of money on a per cow basis that the family used for family living and personal expenses. This is the total amount, per cow, used by the family, including farm and nonfarm income. Personal withdrawals/family expense, including nonfarm debt payments (p. 7) divided by average number of cows (p. 10).

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 22).

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).

Return to Operators' Labor, Management, and Equity Capital - (defined on page 8).

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

Total Costs of Producing Milk - (defined on page 22).

Total Labor Costs per Worker Equivalent, All Labor - The average cost per worker equivalent when considering all labor (hired, paid family, family non-paid, and operators) used on the farm and total costs for this labor. Total Labor Cost (p. 11) divided by number of worker equivalents (p. 11).

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.

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