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DAIRY FARM BUSINESS SUMMARY

INTENSIVE GRAZING FARMS NEW YORK 2005

TENTH ANNIVERSARY



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Intensive Grazing Farms
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On the tenth anniversary of the New York Intensive Grazing Publication, a special “thank you” to Stuart Smith, retired Senior Extension Associate. Stuart began analysis of intensive grazing farms with a one-page table summarizing 25 grazing farms with 1992 Dairy Farm Business Summary (DFBS) data. This was continued with 1993 DFBS data and the analysis grew to a more detailed analysis with 1994 and 1995 DFBS data. “Thank you” also to Carl Crispell, retired Extension Educator, for continuing the analysis in publication form with 1996 DFBS data. His co-authors were George Conneman, James Grace, Kate Parsons, and Linda Putnam.

2005 DAIRY FARM BUSINESS SUMMARY INTENSIVE GRAZING 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 the farm business.

This year we are celebrating the tenth year that a study of intensive grazing farms has been done. The table on page 4 provides a summary of the intensive grazing farms over the ten-year period.

The farms included in the study are a subset of New York State farms participating in the Dairy Farm Business Summary (DFBS). Forty-five New York farms indicated that they grazed dairy cows at least three months, moving to a fresh paddock at least every three days and more than 30% of the forage consumed during the growing season was from grazing. Operators of these 45 farms were asked to complete a grazing practices survey. Thirty-four of the New York farms did complete it. The investigators had special interest in practices used on farms with above average profitability. **Therefore the study centered on 42 New York farms which were not organic farms, were not first year grazers and on which at least 30 percent of forage consumed during the grazing season was grazed. The "Average Top 30% Farms" are thirteen farms with the highest labor and management incomes per operator per cow and are compared to the average of the 42 farms.**

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 establish goals that will enable the business to better meet its objectives. In short, DFBS provides business and financial information needed in identifying and evaluating strengths and weaknesses of the farm business.

Format Features

The first section compares intensive grazing farms that participated in the Dairy Farm Business Summary project in 2004 and 2005. A ten-year comparison is also included this year. The second section of this publication reports data from the grazing practices survey. A comparison of intensive grazing farms with non-grazing farms is included on page 10. The third section, Case Studies, describes three grazing farms. The fourth section summarizes grazing farms by herd size.

The summary and analysis portion of this report follows the same general format as in the 2005 DFBS individual farm report received by all participating dairy farmers. It may be used by any dairy farm manager who wants to compare his or her business with the average data of intensive grazing farms. Non-DFBS participants can download a DFBS Data Check-In Form at <http://dfbs.cornell.edu>. After collecting data on the form, it can be entered in the U.S. Top Dairies business summary program at the same website to obtain a summary of their business.

The summary and analysis portion of the 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; and
- (7) a capital and labor efficiency analysis.

PROGRESS OF THE FARM BUSINESS

Comparing your business with average financial data from Dairy Farm Business Summary (DFBS) grazing farms that participated for the last two years can be helpful in comparing performance¹ and establishing goals for your business. 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 for selected factors from 25 farms that were grazing in both 2004 and 2005 and participated in the DFBS project for both years.

These 25 farms decreased in herd size from 106 cows in 2004 to 103 cows in 2005. However production per cow increased 3.8 percent to 16,469 pounds per cow from 15,868. This enabled the total pounds of milk sold off the farm to increase by 1.1 percent. Heifer numbers showed an increase of 12 from 73 to 85 or a 16% increase.

There was a 3.9 percent decrease in worker equivalents, to 2.72, allowing cows per worker to increase by one to 38. Reflecting the increase in production per cow and fewer workers, the milk sold per worker increased 5.2 percent to 623,401 pounds. Hired labor costs per worker equivalent increased 1.9 percent and on a hundredweight basis the increase was 1 cent, but as a percentage of milk sales it was a 5.1 percent increase. This was due to a decrease of 4 percent in the price per hundredweight of milk sold, from \$17.37 to \$16.68.

The 2005 growing season was variable across New York State. Parts received adequate moisture and other sections were dry. In the drier areas, pasture and field crop yields were reduced as indicated by the lower average hay and corn silage yields.

Gross milk income per cow only decreased \$9 per cow as the increase in production per cow offset the price decrease. There was strong demand for beef all of 2005. Sales of cull cows increased \$100 per cow, nearly a 50 percent increase, to \$308. Calf sales were up as well, going from \$55 in 2004 to \$88 per cow in 2005. Government receipts increased \$.06 per cwt to \$0.47. MILC payments were \$.03 in June and \$.04 in December.

Income per hundredweight for 2005 was, milk sales \$16.68, cattle \$1.87, calves \$0.53, and government payments \$0.47 for a total income of \$19.55 versus income of \$19.33 for the same items in 2004, a 1.1 percent increase. The total farm operating costs of producing a hundredweight of milk was \$14.55, a 2.4 percent increase from 2004's \$14.21.

The amount of investment per cow continued its upward trend, increasing from \$6,664 to \$7,514 or 12.8 percent. This resulted from the value of machinery and equipment increasing and cattle and land being worth more than in 2004. Debt per cow increased \$164 to \$2,336. In spite of this increase in debt per cow, farm net worth increased 12.4 percent, an increase of \$63,478 per farm.

The increase in gross farm income was not enough to offset the increase in gross farm expenses, resulting in lower profitability for 2005 than 2004.

Profitability Measures

- Net farm income without appreciation decreased 4.9 percent to \$61,439.
- Net farm income per cow without appreciation decreased from \$609 to \$596.
- Net farm income with appreciation increased 2.5 percent to \$94,509.
- Labor and management income per operator decreased from \$25,038 to \$21,934.
- Rate of return on equity capital without appreciation decreased from 3.8 percent to 3.1 percent.
- Rate of return on all capital without appreciation decreased from 4.2 percent to 3.9 percent.

In summary, in general 2005 was not as profitable as 2004 for most grazers. 2004 was a record high milk price year with excellent grazing conditions all season. However, 2005 was a better year than 2002 and 2003.

¹The 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. If you would like help in developing and looking at the trends in your business, contact your local Cornell Cooperative Extension office and become involved in a financial management education program.

PROGRESS OF THE FARM BUSINESS
Same 25 Grazing Dairy Farms, 2004 & 2005

Selected Factors	Average of 25 Farms		Percent Change
	2004	2005	
<u>Size of Business</u>			
Average number of cows	106	103	-2.8
Average number of heifers	73	85	16.4
Milk sold, lbs.	1,676,923	1,695,652	1.1
Worker equivalent	2.83	2.72	-3.9
Total nontillable and tillable pasture & hay acres	255	268	5.1
Total nontillable pasture & tillable acres	308	322	4.6
<u>Rates of Production</u>			
Milk sold per cow, lbs.	15,868	16,469	3.8
Hay DM per acre, tons	2.8	2.2	-21.4
Corn silage per acre, tons	15.2	14.8	-2.6
<u>Labor Efficiency & Costs</u>			
Cows per worker	37	38	2.7
Milk sold per worker, lbs.	592,552	623,401	5.2
Hired labor cost per cwt.	\$1.70	\$1.71	0.6
Hired labor cost per worker	\$25,357	\$25,838	1.9
Hired labor cost as % of milk sales	9.8%	10.3%	5.1
<u>Cost Control</u>			
Grain & concentrate purchased as % of milk sales	24%	23%	-4.2
Grain & concentrate per cwt. milk	\$4.14	\$3.91	-5.6
Dairy feed & crop expense per cwt. milk	\$5.48	\$5.32	-2.9
Labor & machinery costs per cow	\$1,207	\$1,215	0.7
Total farm operating costs per cwt. sold	\$14.21	\$14.55	2.4
Interest costs per cwt. milk	\$0.68	\$0.77	13.2
Milk marketing costs per cwt. milk sold	\$0.99	\$1.02	3.0
Operating cost of producing cwt. of milk	\$11.68	\$11.54	-1.2
Total costs of producing cwt. of milk	\$17.73	\$17.30	-2.4
<u>Capital Efficiency</u> (average for the year)			
Farm capital per cow	\$6,664	\$7,514	12.8
Mach. & equipment per cow	\$1,145	\$1,317	15.0
Asset turnover ratio	0.51	0.48	-5.9
<u>Income Generation</u>			
Gross milk sales per cow	\$2,756	\$2,747	-0.3
Gross milk sales per cwt.	\$17.37	\$16.68	-4.0
Net milk sales per cwt.	\$16.38	\$15.66	-4.4
Dairy cattle sales per cow	\$208	\$308	48.1
Dairy calf sales per cow	\$55	\$88	60.0
Government receipts per cwt.	\$0.41	\$0.47	14.6
<u>Profitability</u>			
Net farm income without appreciation	\$64,620	\$61,439	-4.9
Net farm income with appreciation	\$92,318	\$94,609	2.5
Labor & mgt. income per operator/manager	\$25,038	\$21,934	-12.4
Labor & mgt. income per oper./manager per cow	\$236	\$213	-9.8
Rate of return on equity capital without apprec.	3.8%	3.1%	-18.4
Rate of return on all capital without appreciation	4.2%	3.9%	-7.1
<u>Financial Summary</u>			
Farm net worth, end year	\$510,734	\$574,212	12.4
Debt to asset ratio	0.31	0.29	-6.5
Farm debt per cow	\$2,172	\$2,336	7.6

TEN YEAR COMPARISON: SELECTED BUSINESS FACTORS
New York Intensive Grazing Dairy Farms, 1996 to 2005

Item	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of farms	59	46	59	65	65	54	30	27	30	42
<u>Cropping Program</u>										
Total tillable acres	255	234	247	227	271	288	243	270	267	264
Tillable acres rented	89	83	90	105	133	142	125	126	96	110
Hay crop acres	130	121	126	120	139	152	119	149	133	143
Corn silage acres	40	49	45	42	44	37	22	28	38	34
Hay crop, tons DM/acre	2.5	2.1	2.4	2.1	2.7	2.2	2.2	3.7	2.9	1.9
Corn silage, tons/acre	13.9	14.1	14.8	13.9	12.0	15.5	12.4	15.3	15.3	14.9
Fertilizer & lime exp./tillable acre	\$19	\$20	\$25	\$25	\$20	\$22	\$30	\$21	\$31	\$31
Machinery cost/cow	\$432	\$421	\$448	\$545	\$501	\$528	\$439	\$447	\$598	\$586
<u>Dairy Analysis</u>										
Number of cows	78	82	83	79	93	94	94	100	104	95
Number of heifers	60	57	62	60	67	70	68	72	74	76
Milk sold, cwt.	13,491	14,227	14,652	14,477	15,860	15,396	15,687	15,637	17,744	15,868
Milk sold/cow, lbs.	17,270	17,277	17,653	18,346	17,107	16,295	16,618	15,684	17,144	16,783
Purchased dairy feed/cwt. milk	\$4.62	\$4.22	\$3.98	\$3.65	\$3.88	\$4.19	\$4.21	\$4.45	\$4.76	\$4.48
Purchased grain & concentrate as % of milk receipts	30%	30%	24%	23%	27%	23%	28%	29%	25%	26%
Purchased feed & crop exp/cwt.milk	\$5.48	\$4.97	\$4.81	\$4.39	\$4.56	\$4.94	\$4.99	\$5.06	\$5.55	\$5.34
Operating cost producing milk/cwt.	\$11.29	\$11.08	\$10.53	\$10.53	\$10.17	\$11.71	\$9.76	\$9.53	\$11.83	\$11.35
Veterinary & medicine exp./cow	\$56	\$55	\$55	\$68	\$66	\$67	\$57	\$59	\$74	\$67
<u>Capital Efficiency</u>										
Farm capital/cow	\$6,821	\$6,419	\$6,438	\$6,236	\$6,445	\$6,841	\$5,870	\$6,286	\$7,300	\$7,526
Real estate/cow	\$3,394	\$3,112	\$3,025	\$2,508	\$2,791	\$2,951	\$2,389	\$2,738	\$3,475	\$3,369
Machinery investment/cow	\$1,204	\$1,136	\$1,137	\$1,291	\$1,316	\$1,319	\$1,109	\$1,191	\$1,287	\$1,337
Asset turnover ratio	0.44	0.42	0.51	0.51	0.46	0.51	0.46	0.46	0.50	0.48
<u>Labor Efficiency</u>										
Worker equivalent	2.70	2.79	2.75	2.63	2.76	2.78	2.59	2.71	2.90	2.70
Operator/manager equivalent	1.34	1.34	1.30	1.41	1.35	1.40	1.24	1.36	1.50	1.32
Milk sold/worker, lbs.	499,677	509,941	532,809	550,437	574,630	553,819	605,677	577,020	611,862	587,165
Cows/worker	29	29	30	30	34	34	36	37	36	35
Labor cost/cow	\$646	\$651	\$642	\$715	\$644	\$717	\$683	\$681	\$732	\$746
Hired labor exp./hired worker equiv.	\$19,870	\$20,012	\$19,706	\$21,189	\$20,024	\$24,430	\$24,009	\$22,912	\$25,966	\$25,645
<u>Profitability & Financial Analysis</u>										
Labor & mgmt. income/operator	\$6,551	\$-2,348	\$26,364	\$13,203	\$1,693	\$15,205	\$2,482	\$9,638	\$22,397	\$17,801
Labor & mgmt income/operator/cow	\$84	\$-29	\$318	\$167	\$18	\$162	\$26	\$96	\$215	\$187
Net farm income/cow w/o apprec.	\$409	\$240	\$703	\$543	\$310	\$555	\$322	\$449	\$652	\$572
Farm net worth, end year	\$367,778	\$341,050	\$376,720	\$364,069	\$410,672	\$477,037	\$369,123	\$454,465	\$578,704	\$535,182
Percent equity	68%	64%	68%	73%	67%	71%	66%	69%	73%	72%

INTENSIVE GRAZING SURVEY SUMMARY

From the survey data of the 34 selected grazing farms in New York, analysis of average production levels and profitability measures are shown below. Labor and management income per operator per cow without appreciation was used to evaluate whether certain practices contributed favorably to improved profitability. Labor and management income per operator per cow is a measure of the net annual return after the operators' unpaid family labor and an equity charge for capital used in the business has been applied. This is the best way to compare diverse businesses that may have high debt to those with no debt and those that may rely heavily on unpaid labor with those that have all paid labor. The farms were divided into two sets of the top half and the bottom half scaled by the highest to lowest labor and management income per operator per cow.

SELECTED PRODUCTION AND PROFITABILITY MEASURES

Intensive Grazing Dairy Farms, 2005

	Average 34 Farms	17 Above Average Farms	17 Below Average Farms
Labor and management income per cow	\$253	\$475	\$18
Average number of cows	97	104	90
Milk sold per cow, pounds	17,946	18,579	17,274
Operating cost of producing milk per cwt.	\$11.00	\$10.07	\$11.99
Total cost of producing milk per cwt.	\$18.28	\$16.61	\$20.05

Comparison of survey data on the various grazing practices, such as water availability, supplemental feeding, pasture species, pasture management, milking system type and frequency of rotation are shown as follows:

GRAZING PRACTICES

Intensive Grazing Dairy Farms, 2005

	Number of Farms Responding	Average of All Farms Answering Question	Above Average Farms	Below Average Farms
<u>Experience</u>				
Average years of farming experience	34	23.9	21.6	26.2
Average years of grazing experience	34	10.7	12.2	9.3
<u>Farm Characteristics</u>				
Percent of farms with seasonal or semi-seasonal calving	34	24%	29%	18%
Percent of farms with a parlor milking system	30	37%	33%	40%
<u>Pasture in the Ration</u>				
Average percent forage from pasture	33	61%	56% (17)	66% (16)
Average length (days) of grazing season	34	190	193	187
Average pounds of grain fed while grazing	26	16.0	15.6	16.4
Average pounds of grain fed in winter	26	19.0	19.3	18.7
Average pounds of forage dry matter fed while grazing	26	10.8	12.4	9.1
Average pounds of forage dry matter from grazing	26	18.2	15.6	20.8
Average pounds of forage dry matter fed in winter	26	29.0	28.0	29.9
<u>Pasture Management</u>				
Percent rotated after each milking	34	39%	41%	29%
Percent rotated daily	34	42%	29%	47%
Percent rotated every other day	34	16%	24%	6%
Percent other rotation	34	13%	6%	18%
Percent applied commercial fertilizer to pasture	34	50%	56%	44%
Percent applied manure to pasture	34	53%	50%	56%
Percent applied lime to pasture	34	19%	19%	19%
Percent that clipped pasture	34	85%	88%	82%
Percent with a weed problem	34	56%	47%	65%
Percent with water in every paddock	34	56%	71%	41%
Percent with pasture re-seeded in past 10 years	34	41%	59%	24%
Percent that mechanically harvested pastures	34	56%	53%	59%
Most common pasture species				
First		Orchardgrass	Orchardgrass	Orchardgrass
Second		Ladino Clover	Native Clover	Ladino Clover
Third		Native Clover	Ryegrass	Native Clover

Practices to increase pasture quality tended to indicate higher profitability. Those practices included having more grazing experience, greater supplementation of pasture, rotating pastures more often, use of fertilizer, clipping weeds, re-seeding pasture, and mechanically harvesting pasture before it becomes overgrown. Having water available in every pasture also tended to indicate higher profitability.

Breeds

Holstein was the most common breed with 72.6 percent of the animals being pure Holstein, the second most common was crossbreeds with 22.4%, and the third most common breed was Jersey with 4.9 percent of the animals. Nineteen of the 34 farms were 95+ percent Holstein and they tended to have higher milk production but lower profitability both per cow and per hundredweight.

FARMS SCALED BY BREED OF HERD

Intensive Grazing Farms, 2005

	Number	Milk Production	Labor & Mgmt. Income per Operator Per Cow	Labor & Mgmt. Income per Operator Per Cwt.	Cull Rate (Sold for Beef or Died)
Farms that are 95+% Holstein	19	19,506	\$178	\$0.71	27.3%
Farms that are less than 95% Holstein	15	15,879	\$260	\$1.75	25.9%

Supplemental Feeding

Twenty-six farms gave detailed ration data and the table below compares the 16 farms that fed corn silage to the 10 that did not. Farms that incorporated corn silage into their grazing forages also tended to feed more grain and have higher milk production. These farms also tended to have higher profitability. In past years, the feeding of corn silage has shown to be profitable some years and unprofitable others, while supplementation of pasture in general has always shown to be a profitable practice. For a more specific look at what was being fed to these grazing herds, see the following section "Grazing Season Ration Details".

SUPPLEMENTAL FEEDING

Intensive Grazing Farms, 2005

	13 Above Average Farms		13 Below Average Farms	
	Corn Silage (8)	No Corn Silage (5)	Corn Silage (8)	No Corn Silage (5)
Labor & management income per oper. per cow	\$577	\$470	\$194	\$ -313
Milk sold per cow, pounds	19,005	17,603	18,906	15,813
Grain fed in summer, pounds dry matter	16.1	14.8	17.7	14.3
Corn silage fed in summer, pounds dry matter	9.5	-	7.0	-
Other forage fed in summer, pounds dry matter	4.8	9.5	5.8	3.3
Percent forage from pasture	51%	65%	55%	85%

Grazing Season Ration Details

The 13 above average grazing farms fed an average of 15.6 pounds dry matter of grain during the grazing season. Eight farms fed corn silage at an average of 9.5 pounds dry matter. Four fed haylage at an average of 9.4 pounds dry matter. Four farms fed baleage at an average of 5.5 pounds dry matter and six farms fed dry hay at an average of 5.3 pounds dry matter. The group had an average total daily dry matter intake of 47.3 pounds.

The 13 below average grazing farms fed an average of 16.4 pounds dry matter of grain during the grazing season. Eight of the farms fed corn silage at an average of 7.0 pounds dry matter. Five fed haylage at an average of 2.8 pounds dry matter. Three farms fed baleage at an average of 9.6 pounds dry matter and three farms fed dry hay at an average of 4.3 pounds dry matter. The group had an average total daily dry matter intake of 48.9 pounds.

Frequency of Rotation

Twelve of the farms rotated their pastures for milk cows after each milking, 13 of the farms rotated pasture every day, 5 farms rotated pasture every other day, and 2 farms rotated based on field conditions. The table below compares the rotation frequency to milk production and labor and management income per operator per cow.

ROTATION FREQUENCY Intensive Grazing Farms, 2005

	17 Above Average Farms		17 Below Average Farms	
	Rotate After Each Milking (7)	Other Rotation Schedule (10)	Rotate After Each Milking (5)	Other Rotation Schedule (12)
Milk sold per cow, pounds	19,076	18,231	16,315	17,614
Labor and management income per operator per cow	\$479	\$473	\$-25	\$-56

Water Source

Seventeen farms provided the majority of water from a well while the remaining seventeen provided water from a natural source (pond 8, spring 6, and stream 3).

WATER SOURCE Intensive Grazing Farms, 2005

	17 Above Average Farms		17 Below Average Farms	
	Well (10)	Other (7)	Well (7)	Other (10)
Milk sold per cow, pounds	17,508	20,109	17,117	17,313
Labor and management income per operator per cow	\$425	\$548	\$-85	\$-21

Milking System

Farms utilizing some sort of a parlor (herringbone, parallel, rotary, flat barn or other) were separated from those utilizing a pipeline. The type of milking system may impact the degree of control the manager has over the supplemental feeding system and the capital investment level of the farm. In total there were 11 parlor systems (10 pit parlors, 1 flat parlor) and the remaining 19 farms used pipeline systems.

MILKING SYSTEM Intensive Grazing Farms, 2005

	15 Above Average Farms		15 Below Average Farms	
	Pipeline (10)	Parlor (5)	Pipeline (9)	Parlor (6)
Milk sold per cow, pounds	20,315	15,768	17,592	16,831
Labor and management income per operator per cow	\$533	\$374	\$-135	\$104
Average number of cows	52	192	56	146

Commercial Fertilizer

Fifteen farms applied fertilizer to the paddocks during the growing season. The majority of farms applied urea and others applied a blended fertilizer. Most applied all the fertilizer in one application in the spring to early June while others applied fertilizer at multiple times throughout the season. It is not possible to compare pasture yields in the different systems because quantities were not measured from farms that mechanically harvested hay from pasture.

COMMERCIAL FERTILIZER
Intensive Grazing Farms, 2005

	17 Above Average Farms		17 Below Average Farms	
	Applied Fertilizer (9)	Did Not Apply Fertilizer (8)	Applied Fertilizer (6)	Did Not Apply Fertilizer (10)
Milk sold per cow, pounds	19,886	17,109	18,125	16,904
Labor and management income per operator per cow	\$531	\$413	\$131	\$-172
Stocking rate, cows per acre	1.08	1.15	1.05	1.00
Percent forage from pasture	54%	57%	60%	70%
Most common product applied	Urea		Urea	

2005 Drought Response

2005 was a drought year for the majority of grazing farms in the summary and 31 farms noted their response to drought conditions. Most responded by supplementing pasture, some added extra pasture acres, and a few took their herd off pasture for a period of time, equivalent to 39.8 days.

DROUGHT RESPONSE
Intensive Grazing Farms, 2005

	Labor and Management Income Per Operator Per Cow		Percent "Yes" Responses	Average Days Removed From Pasture
	Yes	No		
Added extra acres of pasture?	\$106	\$335	52%	
Fed supplemental feed?	\$238	\$ -94	90%	
Were cattle removed from pasture? If "yes", for how long (cattle days)	\$157	\$231	19%	39.8

Intensive Grazing Satisfaction Comments

On a scale of 1 to 5, with 5 being the highest, 32 farms responded with the average rating of grazing satisfaction as 4.5 with 19 farms responding 5, 101 responding 4, and 3 responding 3. When asked whether their lifestyle has improved with the adoption of rotational grazing, 28 farms responded with 23 saying "yes" and 5 saying "no".

Grazing Trends

The table below compares key figures from 1996 (the first year of the intensive grazing summary), 2005, and a ten-year average (not the same farms all ten years). Cow numbers have increased but milk sold per cow has remained basically the same.³ Operating cost of producing milk in 2005 averaged \$0.57 above the ten-year average but only \$0.06 above 1996. Net farm income per cow without appreciation was \$96 higher than the ten-year average. Due to the high milk price in 2005, the grain cost as a percent of milk receipts decreased but on a per hundredweight basis was similar to the ten-year average.

2005 GRAZING INFORMATION COMPARED TO 1996 AND 1996 – 2005 AVERAGE
Intensive Grazing Farms, 1996 – 2005

	59 Grazing Dairy Farms, 1996 Average	42 Grazing Dairy Farms, 2005 Average	48 Grazing Dairy Farms, 1996 – 2005 Average
Number of cows	78	95	90
Milk sold per cow, pounds ³	17,270	16,783	17,018
Operating cost of producing milk per cwt.	\$11.29	\$11.35	\$10.78
Net farm income per cow without apprec.	\$409	\$572	\$476
Grain and concentrate as % of milk receipts	30%	26%	27%
Grain and concentrate expense per cwt. milk	\$4.41	\$3.99	\$3.87
Price of milk per cwt.	\$14.78	\$16.41	\$14.91

³ In 1996, similar size non-grazers sold 17,547 pounds of milk per cow and in 2005 similar size non-grazers sold 21,418 pounds per cow.

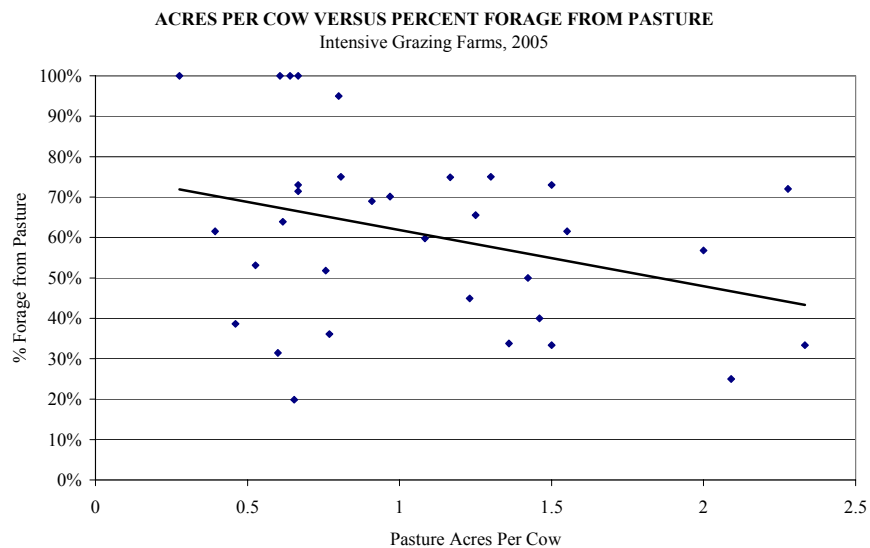
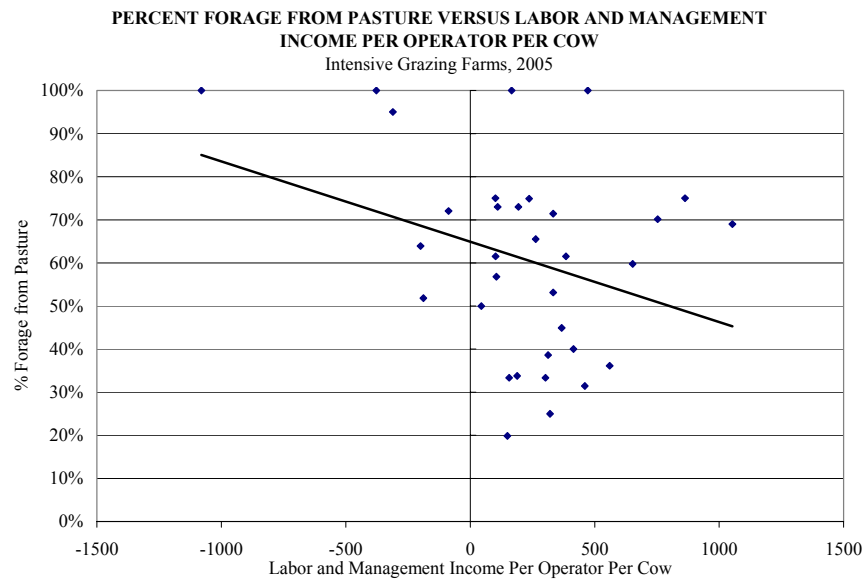
Open Ended Comments

When given the opportunity to state anything about the grazing season this year or in general, several farms responded with these comments:

- Dry weather caused more barn feeding
- Long walk to pastures
- Always pastured, can't compare
- This was the first year on the farm and the land is in poor shape
- Improving lanes and water system would increase satisfaction
- Would not farm if I had to confine all year
- Cows kept in for a couple weeks and were dissatisfied
- Herd health is excellent
- I love it

Percent Forage from Pasture

The following graphs compare the percent forage from pasture to labor and management income per operator per cow and pasture acres per cow. The grazing farms with 60 to 80 percent of their forage from pasture had the highest profitability.



INTENSIVE GRAZING FARMS VS. NON-GRAZING FARMS
New York State Dairy Farms, 2005

Item	All Intensive		Average Top	
	Grazing Farms ⁴	Non-Grazing Farms ⁵	30% Grazing Farms ⁶	Profitable Non-Grazing Farms ⁷
Number of farms	42	69	13	25
<u>Business Size & Production</u>				
Number of cows	95	94	115	113
Number of heifers	76	78	94	97
Milk sold, lbs.	1,586,813	1,863,199	1,852,540	2,410,000
Milk sold/cow, lbs.	16,783	19,769	16,174	21,418
Milk plant test, % butterfat	3.81%	3.66%	3.84%	3.56%
Cull rate	25.3%	29.0%	22.8%	31.3%
Tillable acres, total	264	280	297	348
Hay crop, tons DM/acre	1.9	2.5	2.0	2.6
Corn silage, tons/acre	14.9	17.4	16.6	20.8
Forage DM/cow, tons	5.0	8.9	4.0	9.3
<u>Labor & Capital Efficiency</u>				
Worker equivalent	2.70	3.03	2.61	3.33
Milk sold/worker, lbs.	587,165	615,086	709,106	724,449
Cows/worker	35	31	44	34
Farm capital/worker	\$263,554	\$304,930	\$296,577	\$290,491
Farm capital/cow	\$7,526	\$9,803	\$6,758	\$8,597
Farm capital/cwt. milk	\$45	\$49	\$42	\$40
Machinery & equipment per cow	\$1,337	\$1,819	\$1,113	\$2,062
<u>Milk Production Costs & Returns</u>				
Selected costs/cwt.:				
Hired labor	\$1.82	\$1.60	\$1.60	\$1.57
Grain & concentrate	\$3.99	\$4.31	\$3.87	\$3.82
Purchased roughage	\$0.49	\$0.27	\$0.55	\$0.20
Replacements purchased	\$0.15	\$0.09	\$0.01	\$0.04
Vet & medicine	\$0.40	\$0.57	\$0.37	\$0.56
Milk marketing	\$0.94	\$0.96	\$0.81	\$0.74
Other dairy expenses	\$1.13	\$1.37	\$0.86	\$1.17
Operating cost of producing milk/cwt.	\$11.35	\$11.99	\$10.24	\$10.06
Total labor cost/cwt.	\$4.44	\$4.32	\$3.72	\$3.65
Operator resources/cwt.	\$4.13	\$3.92	\$3.27	\$3.40
Total cost of producing milk/cwt.	\$17.45	\$17.67	\$15.27	\$15.04
Average farm price/cwt.	\$16.41	\$16.08	\$16.23	\$15.76
<u>Related Cost Factors</u>				
Hired labor/cow	\$306	\$317	\$259	\$337
Total labor/cow	\$746	\$854	\$601	\$782
Purchased dairy feed/cow	\$752	\$905	\$715	\$861
Purchased grain & conc. as % of milk receipts	26%	27%	25%	24%
Vet & medicine/cow	\$67	\$113	\$61	\$121
Machinery costs/cow	\$586	\$671	\$438	\$736
Feed & crop exp./cwt.	\$5.34	\$5.51	\$5.53	\$4.92
<u>Profitability Analysis</u>				
Net farm income (with appreciation)	\$80,766	\$79,634	\$119,660	\$147,430
Net farm income (without appreciation)	\$54,103	\$51,209	\$83,594	\$105,188
Net farm income per cow (w/o appreciation)	\$572	\$543	\$730	\$935
Net farm income per cwt. (w/o appreciation)	\$3.41	\$2.75	\$4.51	\$4.36
Labor & management income/operator	\$17,801	\$5,967	\$46,429	\$43,197
Labor & mgmt. income/operator/cow	\$187	\$63	\$404	\$384
Rates of return on: Equity capital with apprec.	7.0%	4.8%	15.8%	13.2%
All capital with appreciation	6.6%	5.0%	12.1%	11.4%

⁴Farms grazing at least three months of year, changing paddock at least every three days, forage from pasture at least 30 percent, and no organic farms.

⁵Farms with similar herd size as the 42 intensive grazing farms.

⁶Top 30 percent of grazing farms by Labor and Management Incomes Per Operator Per Cow.

⁷Farms with similar herd size as the "Top 30%" grazing farms and Labor and Management Incomes Per Operator greater than \$23,000.

CASE STUDIES

Windy-Dale Farm

History

Dick and Ellie Bossard have operated Windy-Dale Farm since 1975. Prior to that Dick farmed with his father on a different farm. Dick was the first farmer in Steuben County to switch from confinement to rotational grazing, making the switch in 1985. Before that, cows were housed in the barn and fed stored feed. He was fully mechanized with a full line of equipment and silos, including a silo for high moisture shelled corn (HMSC). He was growing all the forages and most of the high moisture corn that was fed. The 35 registered Holsteins were producing at the level of 19,000-20,000 pounds per year but he was not happy. Time to get away was difficult to come by as he needed to be home to care for the cows and his production costs were high. In the early 80's he made the decision to stop growing HMSC, deciding it was cheaper to purchase rather than grow it.

Grazing Program

In 1985 he converted a hay field near the barn to paddocks and started grazing. Since then he has not looked back, adding fencing for more paddocks and installing laneways. Corn for silage was discontinued in 1985. Since then clovers and orchard grass are the primary species grown. Fescue was planted in some fields but the cows do not like it.

Cows receive a new paddock at least each day and sometimes after each milking. Breeding age heifers graze with the cows during the summer. Pastures are clipped each June. Water in the paddocks has been an issue. Cows initially had shallow ponds to drink from or came back to the barn for water.

Breeding Program

He believes Jerseys are better grazers and was encouraged by his son-in-law, Scott Ward, who is a dairy nutritionist, to consider switching to Jersey Holstein crosses and ultimately Jerseys. So in 1999 the Holstein springing heifers were sold, Jersey springing heifers were purchased and the Holsteins were bred to Jerseys. This was in response to milk being priced on its component value. The switch was made easier because cows were no longer being registered and DHIA had been dropped.

The last four years he has used home raised Jersey bulls as sires. The cross-breeds are now being sold. His goal is to have a 100% Jersey herd and to keep increasing the pounds of components sold. Cows receive 1 ½ to 2 pounds of dry hay while on pasture. He believes this helps keeps components higher.

Improvements

He is constantly looking for ways to improve the farm's profitability. In 2002 he received a grant from the Finger Lakes RC&D Council to improve and extend the laneway and install a solar watering system. The laneway has geotextile cloth installed over a 6-8 inch base. This is topped with a layer of fines from a local gravel pit. Somatic cell count has been reduced, cows are now cleaner, and they are able to reach the further paddocks without walking through mud.

The solar watering system consists of a solar panel, well, pump, 1100 gallon storage tank and water lines. Water tubs are filled by gravity from the tank. This has enabled the Bossards to provide water to 60 acres of pasture. On hot days the cows spend more time grazing rather than back at the barn and milk production from those paddocks has increased.

Four years ago, to improve hay quality, he added baleage to his feeding program. These are fed in bale rings in a protected wooded area, starting in the fall as pasture decreases. In his barn the cows face head-to-head. Round bales are cut into halves with a chain saw and then unrolled down the manger. Dick also harvests 3000 small square bales a year that are fed in the barn

The next things on his agenda are a barnyard project, install a diversion ditch, and possibly become a seasonal herd. He has no intention of becoming organic. The Bossards are happy with the more relaxed life style that grazing provides. His focus is on less labor and lower inputs.

Thanks

Dick Bossard credits Carl Albers, the local Field Crops Agent, with convincing him to start grazing, going against the conventional stored feed program of that time. However, Dick states the best decision he ever made was to marry Ellie. She has been a strong supporter throughout the years, doing the record keeping, caring for the family, and helping if needed. When they

purchased the farm Dick and Ellie dedicated it to God. They believe they are simply managing what he gave them and want to be good stewards of it.

Laughing Stock Farm, Roger & Tina Shaner and Family

History

The farm was started by Roger's dad, Wendell, in the early 1970's as a traditional mid-west farm focusing on row crops and hogs. Roger came back to the farm located in Stronghurst, Illinois, after school in 1983 and the farm grew to 1800 acres of row crops, largely on rented land, and 200 hogs in a farrow-to-finish operation. In 1995, a tornado hit the farm, and with that event, the farm started to change direction. The immediate impact of the tornado was a downsizing of the farm to 1000 acres and 100 sows. However, the combination of the lowering of hog prices and the increasing difficulty to find and keep rented land, Roger, and his wife Tina, started to look at things that would utilize less acres but still allow them to meet their goals. With limited experience of grazing 30 beef cows, they decided that milking cows within a grazing system was the best option to pursue.

In 1997, they started in the dairy business; milking 40 crossbred heifers and grazing part of the home farm, while still growing row crops on 500 acres. With the start of the grazing dairy, they had the opportunity to travel and meet with other grazing dairies. From these contacts, they became involved in a grazing group and also became involved in the Cornell Dairy Farm Business Summary, starting in 2000. After analyzing their reports, and talking with other dairies in the group, they confirmed what they had felt the last few years: that the dairy, while small, was making a profit and was actually supporting their row-crop operation. With this confirmation, they decided to start focusing more on the dairy and less on row-crop production. Starting the following year, they made these changes:

- Stopped all row-crop operations
- Stopped hay production
- Purchased 30 more crossbred heifers
- Made a small expansion to the milking parlor
- Tina took over raising replacements from Roger
- Gave up rented land not suitable for grazing

With all these changes, resources were concentrated in the dairy herd, with growth continuing to occur. In 2003, they also moved to a supplemental feeding system, improving both milk production and reproduction efficiency. In 2005, they purchased a second farm and began converting that land from row crop to pasture.

Current Operation

With the 2006 grazing season underway, the farm is currently milking 180 cows, comprised of 25 percent Jerseys and the rest a combination of Jersey, Ayrshire, and New Zealand Friesian genetics. For 2005, they averaged 153 cows for the year. The herd is seasonal, with calving beginning the last week of February and cows dried off by December 31. The cows are milked twice a day in a DairyMaster double 20-swing parlor installed in an old hog building. There is no housing for any animals, but a second old shed is used for calving through March of each year. Windbreaks and hills provide wind protection for the animals.

Roger is involved with all aspects of the farm on a full-time basis. Tina takes care of the calves during the calving season until weaning. Roger's dad feeds, and four part-time employees are involved in milking the cows. Milking occurs twice a day, taking about 2½ hours from set up to wash down. For 2005, they averaged 65 cows per worker and 979,614 pounds of milk sold per worker, with production of 15,174 pounds per cow.

Currently, the farm consists of 240 acres of pasture; 180 acres is in rye grass, with the remainder in alfalfa/orchard grass. As mud and overwintering dictates, pasture is reseeded with rye grasses. Animals are rotated to a fresh paddock after each milking and are never further than 400 feet from the nearest portable water trough, fed through a system of buried water lines supplied by well water. One half of the farm has improved laneways consisting of road cloth and road millings. Rented land and the new farm are dirt laneways. As cash flow permits, laneways will be improved on the new farm. Border fence is comprised of some woven wire, three-strand, and one-strand high tensile, with the movement toward three-strand. Internal fences are one-strand high tensile, and polywire is used as breakwires for the paddocks. Paddocks are laid out so that from pole to pole represents one-acre segments.

To maximize pasture growth, pastures are fertilized in May, June and August with a total of 150 pounds of nitrogen, primarily from urea and ammonia sulfate. Calcium and other micronutrients are also applied. Pastures are clipped once a year, usually in June. For 2005, fertilizer costs were \$58 per cow.

Animals are supplemented two ways. Cows are first fed 10 pounds of corn/soy/distillers in the milking parlor. Once they have exited the milking parlor, they have one hour of access to a total-mixed ration comprised of corn silage, cotton seed, wet gluten meal, and dry distillers, along with free choice hay. This is fed in fence line feeders. For winter feeding, purchased corn silage and large square bales of hay are utilized, fed in bale rings and feed bunks that are moved as needed. The corn silage is stored in ag bags. Large square bales of hay are either purchased, or have been custom harvested off the pasture if enough excess growth. For 2005, purchased grain and concentrates per cow were \$3.61 per hundredweight and purchased forages were \$2.83 per hundredweight

For the breeding program, all bulls are utilized, with the goal of a nine-week window. The bulls are purchased from other grazing farms and are AI sired from dams that have bred back at least four seasons. About 15 percent of the animals in 2005 were not bred in the window. The current herd didn't follow any planned crossbreeding program, but the program now in place is Jersey bred to New Zealand Friesian, bred to Ayrshire, bred back to Jersey.

The replacements are all bred to bulls, with the bulls coming from other grazing herds and from Jersey, New Zealand, and Ayrshire genetics; 8-10 bulls are used with the replacements and they are used only for one season.

When calves are born, they receive at least two feedings of colostrum by bottle. They are then moved to small pens of nine calves each, where they receive 1.5 gallons of milk per day in a bar-mob feeder. They also have free choice water and calf starter. They are on milk for at least 8 weeks, and are eating a minimum of three pounds of calf starter before they are weaned. When they are weaned, they are grouped into pens of 60 and are trained to electric fences. They are then turned out to pasture, while still receiving supplemental grain. In December, at a weight of 450-500 pounds, they are switched to a diet comprised of corn silage and dry hay for the winter, and then back to pasture. Calving age is targeted at 24 months of age.

Future Plans

Roger and Tina are very excited about the grazing dairy business, and are continuing to move forward with their business. Participating in the Dairy Farm Business Summary, they have been able to track their profitability and the progress the farm has made as they have made changes to the business. For 2003-2005, they have averaged over \$600 net farm income without appreciation per cow. Over the next couple years they are going to be looking into growing more of their own winter forages and also potentially buying equipment instead of relying on custom service providers. Over the longer term as the herd grows to 300 cows, they plan on developing other pasture to move the heifers off the home farm along with developing a second grazing dairy. They are also looking forward to additional family members coming back to the business.

Jerry-Dell Farm

Vaughn and Sue Sherman operate Jerry-Dell Farm in Dryden, NY along with son, Ryan, and nephew, Troy Sherman.

The farm was a grazing herd in the 1950's and they moved away from that in the 1970's to follow the trend of getting more and more out of their cows. By the 1990's the farm was a total confinement freestall operation utilizing high grain rations, high corn silage, 3 times-per-day milking, and bST. They were able to obtain a 90+ pound per day herd average but it was at the expense of a healthy herd. The health of calves born was even worse.

They were killing the cows and spending a lot of money to do it. In 1997 the Shermans looked at grazing. Having no cash flow played well into transitioning to a low input grazing system and, much to their surprise, even though the milk check decreased, cash flow improved.

Benefit Since the Grazing Transition

The main benefit grazing has brought to the farm is an increase in overall cow health. This is evidenced in the way that the cow walk, cow structure, udder health, somatic cell count (SCC), and more. Cows get sick less and when they do get sick, they heal quicker.

An example of this is the farms somatic cell count. In the 1990's the SCC was a problem so they introduced 3X milking along with other strategies that never improved the problem. Since transitioning to grazing, the farm has gone back to 2X and has averaged a SCC below 200,000. Another example is when the farm misses a cow's pregnancy due date and the animal freshens without a dry period. Before, this would be such a shock that the cow would be culled but today the animal will keep milking like nothing happened.

Organic Transition

After two years of grazing, they were drawn to the organic market and in 2000 they began selling organic milk.

They were initially attracted to the organic market by the price but the primary reason they still farm organically is because they are hooked on the philosophy. Many are timid at the notion of organic because of the fear, *what will I do if the cows get sick?* The organic philosophy is that if you manage the farm for healthy cows, they will not get sick and then you won't need all that medicine. The same is true for crops. Most could not imagine growing corn without nitrogen fertilizers and pesticides, but it can be done. More importantly, after years of not using fertilizers and pesticides, the fields' soil biology will change, organic matter increases improving overall soil health. Management substitutes for fossil fuel based inputs when growing organic crops.

Pasture System

The cows typically average 60-70 percent forage from pasture throughout the grazing season because of high quality pasture. While important to all farms, the rewards of high quality pasture are even greater to organic farms where soy can cost as much as \$700 per ton.

With only 218 acres to graze, the 300 milking cows consume almost all of it and thus the high percent of forage from pasture. Heifers and dry cows are custom raised at another farm for the summer. Their keys to effective grazing are water in every field, clipping pastures when needed, and fresh pasture after every milking. By doing this they are able to feed 10 pounds less grain per cow per day during the grazing season with no loss in production.

Another key to their grazing system is the use of a water wagon instead of fixed water areas. The wagon is more labor intensive; however, it avoids the expense and maintenance of running water pipes over 218 acres. Additionally, by regularly moving the water wagon, they do not have torn up and muddy fields around the water troughs where warts could spread.

Dairy Farm Business Summary

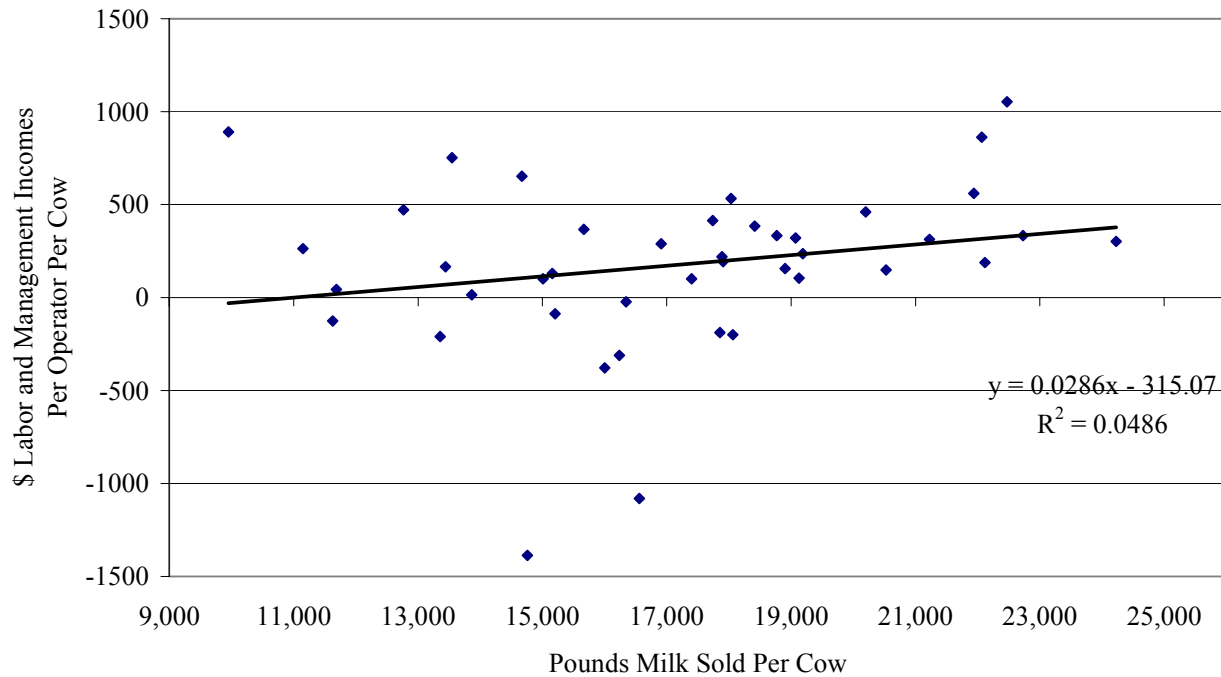
Despite the fact that Cornell does not publish benchmarks for organic farms, the Sherman's continue to do the dairy farm business summary each year. They find some benefit in comparing the farm to conventional farms of similar size but it is mainly done to measure the year-to-year progress of their farm business.

SUMMARY OF GRAZING FARMS BY HERD SIZE

There were ten New York grazing farms with more than 100 cows. Herd size does not guarantee profitability, however, as small farms that are able to produce higher levels of milk per cow also show higher levels of profitability. The chart below shows the variation in labor and management income per operator by pounds of milk sold per cow. The table on the following page compares grazing farms by herd size group.

LABOR AND MANAGEMENT INCOMES PER OPERATOR PER COW AND MILK PER COW

42 Intensive Grazing Farms, 2005



INTENSIVE GRAZING FARMS BY HERD SIZE GROUP
42 Intensive Grazing Dairy Farms, 2005

Item	Less Than 50 Cows	50 to 80 Cows	80 Cows Or More
Number of farms	15	14	13
<u>Business Size & Production</u>			
Number of cows	39	60	196
Number of heifers	29	43	167
Milk sold, lbs.	624,430	1,112,824	3,207,704
Milk sold/cow, lbs.	16,177	18,525	16,347
Milk plant test, % butterfat	3.83%	3.82%	3.85%
Cull rate	22.3%	27.7%	25.2%
Tillable acres, total	147	169	500
Hay crop, tons DM/acre	1.5	1.9	2.1
Corn silage, tons/acre	12.7	18.5	13.7
Forage DM/cow, tons	5.3	7.2	4.4
<u>Labor & Capital Efficiency</u>			
Worker equivalent	1.96	1.90	4.43
Milk sold/worker, lbs.	318,993	586,984	724,087
Cows/worker	20	32	44
Farm capital/worker	\$186,997	\$263,258	\$301,903
Farm capital/cow	\$9,495	\$8,327	\$6,816
Farm capital/cwt. milk	\$59	\$45	\$42
<u>Milk Production Costs & Returns</u>			
Selected costs/cwt.:			
Hired labor	\$0.46	\$0.67	\$2.56
Grain & concentrate	4.46	3.91	3.92
Purchased roughage	1.03	0.54	0.34
Replacements purchased	0.06	0.26	0.13
Veterinary & medicine	0.48	0.36	0.40
Milk marketing	1.09	0.86	0.94
Other dairy expenses	1.31	1.24	1.07
Operating cost of producing milk/cwt.	10.97	10.40	11.78
Operator resources/cwt.	7.33	5.40	2.94
Total labor cost/cwt.	7.21	4.35	3.86
Total cost of producing milk/cwt.	20.93	17.49	16.65
Average farm price/cwt.	16.42	15.72	16.67
<u>Related Cost Factors</u>			
Hired labor/cow	\$75	\$125	\$418
Total labor/cow	1,166	806	630
Purchased dairy feed/cow	889	825	697
Purchased grain & concentrate as % of milk receipts	27%	26%	24%
Veterinary & medicine/cow	\$77	\$66	\$65
Machinery costs/cow	\$648	\$587	\$572
Feed & crop expense/cwt.	\$6.14	\$5.18	\$5.22
<u>Profitability Analysis</u>			
Net farm income (without appreciation)	\$23,351	\$43,570	\$100,928
Net farm income/cow (without appreciation)	\$605	\$725	\$514
Net farm income/cwt. (without appreciation)	\$3.74	\$3.92	\$3.15
Labor & management income/operator	\$2,359	\$16,122	\$37,805
Labor & management income/operator/cow	\$60	\$269	\$193
Rates of return on:			
Equity capital with appreciation	-1.1%	2.7%	11.7%
All capital with appreciation	0.2%	3.4%	9.9%

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 grazing dairy farmers in New York. The following table shows important farm business characteristics and the number of farms with each characteristic.

BUSINESS CHARACTERISTICS 42 Intensive Grazing Dairy Farms, 2005

Type of Farm	Number	Milking System	Number
Dairy	42	Bucket & carry	0
Part-time dairy	0	Dumping station	1
Dairy cash-crop	0	Pipeline	25
		Herringbone-conventional exit	7
		Herringbone-rapid exit	0
		Parallel	3
		Parabone	2
		Rotary	0
		Other	4
Type of Ownership	Number	Production Records	Number
Owner	39	Testing Service	32
Renter	3	On-Farm System	1
		Other	0
		None	9
Type of Business	Number	bST Usage	Number
Sole Proprietorship	28	Used consistently	5
Partnership	10	Used inconsistently	2
Limited Liability Corporation	4	Started using in 2005	0
Subchapter S Corporation	0	Stopped using in 2005	0
Subchapter C Corporation	0	Not used in 2005	35
		Average percent usage, if used	29%
Type of Barn	Number	Business Record System	Number
Stanchion or Tie-Stall	24	Account Book	15
Freestall	11	Accounting Service	5
Combination	7	On-farm computer software	20
		Other	2
Milking Frequency	Number		
2 times per day	41		
3 times per day	0		
Other	1		
Breed	Percent		
Holstein	71		
Jersey	11		
Other	18		

The averages used in this report were compiled using data from all the participating grazing dairy farms in New York unless noted otherwise. There are full-time dairy farms, farm renters, partnerships, and corporations included in the average. Average data for these specific types of farms are presented in the State Business Summary.

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 2005.

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

42 Intensive Grazing Dairy Farms, 2005

Expense Item	Cash Paid	-	Change in Inventory or Prepaid Expense	+	Change in Accounts Payable	=	Accrual Expenses
<u>Hired Labor</u>	\$ 28,903		\$ 13	<<	\$ 25		\$ 28,915
<u>Feed</u>							
Dairy grain & concentrate	64,776		913		-495		63,368
Dairy roughage	8,354		250		-388		7,716
Nondairy	56		0		0		56
Professional nutritional services	102		0		0		102
<u>Machinery</u>							
Machinery hire, rent & lease	6,551		0	<<	-118		6,433
Machinery repairs & farm vehicle exp.	16,475		35		-99		16,342
Fuel, oil & grease	8,929		266		-15		8,648
<u>Livestock</u>							
Replacement livestock	2,407		0	<<	0		2,407
Breeding	3,248		93		23		3,178
Veterinary & medicine	6,288		84		131		6,335
Milk marketing	15,034		0	<<	-62		14,972
Bedding	1,833		42		0		1,791
Milking supplies	5,464		40		-1		5,423
Cattle lease & rent	214		0	<<	0		214
Custom boarding	2,141		14	<<	0		2,127
bST expense	694		3		0		691
Livestock professional fees	1,385		45		11		1,351
Other livestock expense	3,287		-12		3		3,302
<u>Crops</u>							
Fertilizer & lime	9,046		577		301		8,770
Seeds & plants	2,666		24		59		2,701
Spray, other crop expense	1,979		-70		-14		2,035
Crop professional fees	161		0		0		161
<u>Real Estate</u>							
Land, building & fence repair	4,565		51		247		4,762
Taxes	6,989		-23	<<	-125		6,887
Rent & lease	5,528		0	<<	0		5,528
<u>Other</u>							
Insurance	4,221		-16	<<	-35		4,202
Utilities (farm share)	7,648		0	<<	-15		7,633
Interest paid	10,722		0	<<	92		10,814
Other professional fees	901		0		31		932
Miscellaneous	1,701		27		94		1,768
Total Operating	\$232,271		\$ 2,356		\$ -350		\$ 229,565
Expansion livestock	3,638		0	<<	0		3,638
Extraordinary expense	1,421		0		-231		1,190
Machinery depreciation							17,678
Building depreciation							7,446
TOTAL ACCRUAL EXPENSES							\$ 259,517

Change in prepaid expenses (noted above 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.

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 2005 but not paid for. A decrease is subtracted because it represents payment for resources used before 2005.

Accrual expenses are an estimate of the costs of inputs 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

42 Intensive Grazing Dairy Farms, 2005

Receipt Item	Cash Receipts	+	Change in Inventory	+	Change in Accounts Receivable	=	Accrual Receipts
Milk sales	\$ 261,667				\$ -1,212		\$ 260,455
Dairy cattle	19,757		\$ 7,468		229		27,454
Dairy calves	4,849		2,849		0		7,698
Other livestock	896		406		0		1,302
Crops	807		-1,077		-20		-290
Government receipts	6,769		0 ⁸		0		6,769
Custom machine work	181				0		181
Gas tax refund	404				0		404
Other	<u>7,199</u>				<u>2,447</u>		9,646
Less nonfarm noncash capital ⁹		(-)	<u>0</u> ⁹			(-)	<u>0</u>
Total Receipts	\$ 302,530		\$ 9,646		\$ 1,444		\$ 313,620

⁸Change in advanced government receipts.

⁹Gifts 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 2005 for the 2006 crop year in excess of funds earned for 2005. Likewise, a decrease is added to cash government receipts because it represents funds earned for 2005 but received in 2004.

Changes in accounts receivable are calculated by subtracting beginning year balances from end year balances. Payments in January for milk produced in December 2005 compared to January 2005 payments for milk produced in 2004 are 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 operators¹⁰ 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.

These measures should be considered estimates as they include inventory values that are only estimates and they include an unknown degree of error stemming from cash flow imbalances.

¹⁰Operators 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.

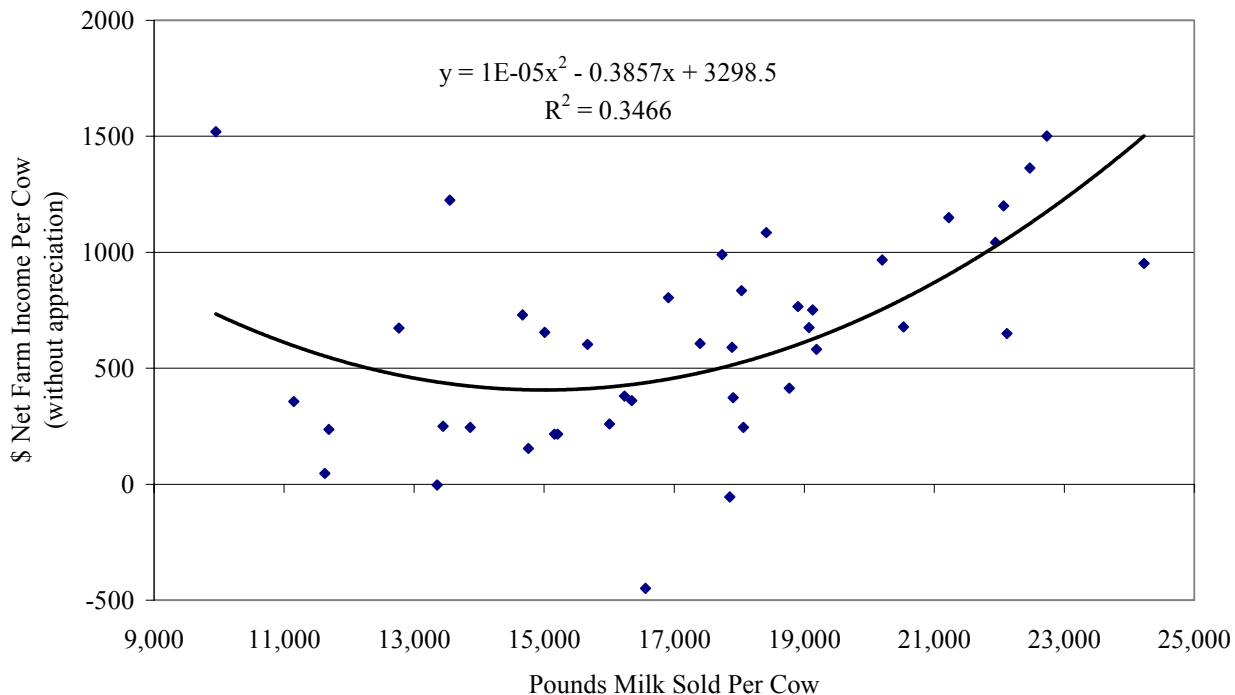
NET FARM INCOME
Intensive Grazing Dairy Farms, 2005

Item	42 Grazing Dairy Farms ¹¹	Average Top 30% Farms ¹¹
Total accrual receipts	\$ 313,620	\$ 363,328
Appreciation: Livestock	11,489	26,062
Machinery	3,015	2,097
Real Estate	11,469	7,618
Other Stock & Certificates	<u>689</u>	<u>290</u>
Total Including Appreciation	\$ 340,283	\$ 399,395
Total accrual expenses	<u>- 259,517</u>	<u>- 279,734</u>
Net Farm Income (with appreciation)	\$ 80,766	\$ 119,660
Net Farm Income Per Cow (with appreciation)	\$ 854	\$ 1,045
Net Farm Income (without appreciation)	\$ 54,103	\$ 83,594
Net Farm Income Per Cow (without appreciation)	\$ 572	\$ 730

¹¹See page 1 for a description of these groups of farms.

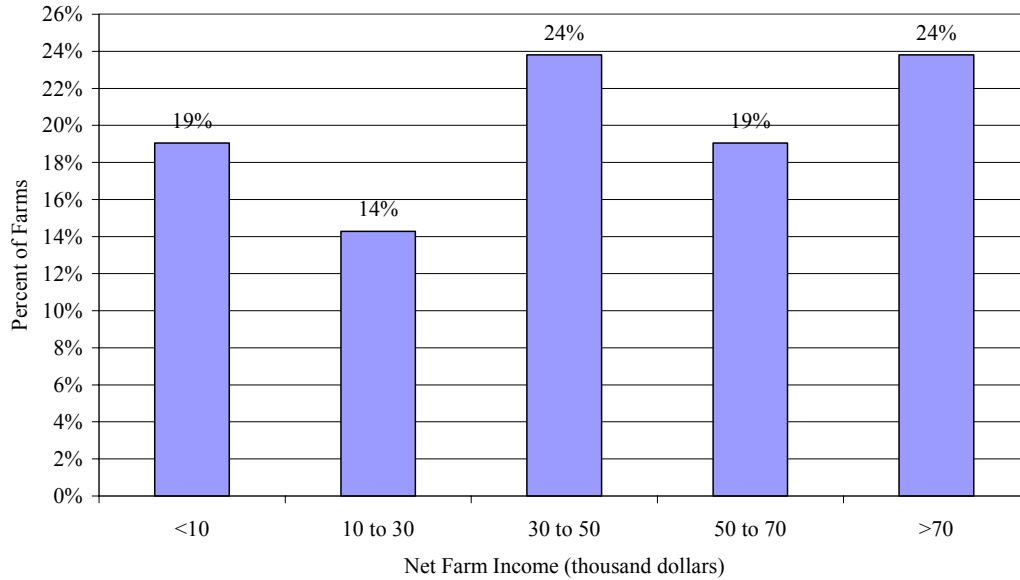
The chart below shows the relationship between net farm income per cow (without appreciation) and pounds of milk sold per cow. Higher net farm incomes can be achieved across a range of production levels as a result of different management systems, such as grazing, being utilized by the participating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

NET FARM INCOME PER COW AND MILK PER COW
42 Intensive Grazing Farms, 2005



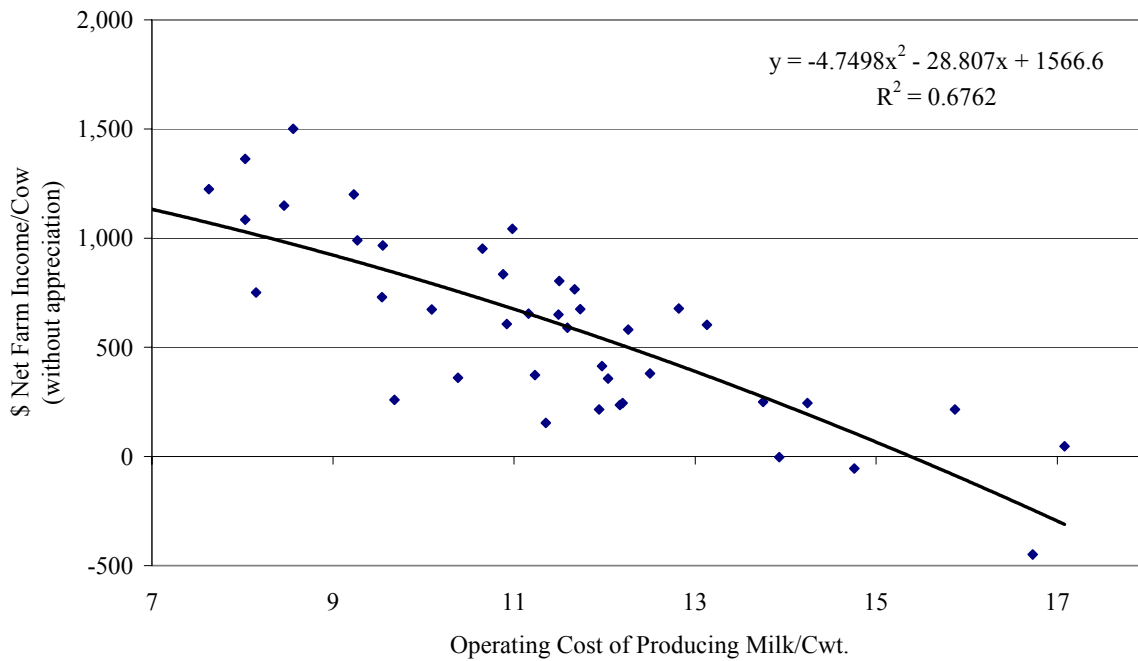
Net farm income without appreciation averaged \$54,103 on these 42 farms in 2005. The range in net farm income without appreciation was from less than \$-21,000 to more than \$360,000. Net farm income was less than \$30,000 on 33 percent of the farms, between \$30,000 and \$70,000 on 43 percent of the farms, while 24 percent showed net farm incomes of \$70,000 or more.

DISTRIBUTION OF NET FARM INCOME WITHOUT APPRECIATION
42 Intensive Grazing Farms, 2005



The importance of cost control and its impact on farm profitability are illustrated in the chart below. As the operating cost of producing milk per hundredweight increased, net farm income per cow fell.

NET FARM INCOME/COW & OPERATING COST OF PRODUCING MILK/CWT.
42 Intensive Grazing Farms, 2005



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 family labor unpaid and the opportunity cost of using 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

Intensive Grazing Dairy Farms, 2005

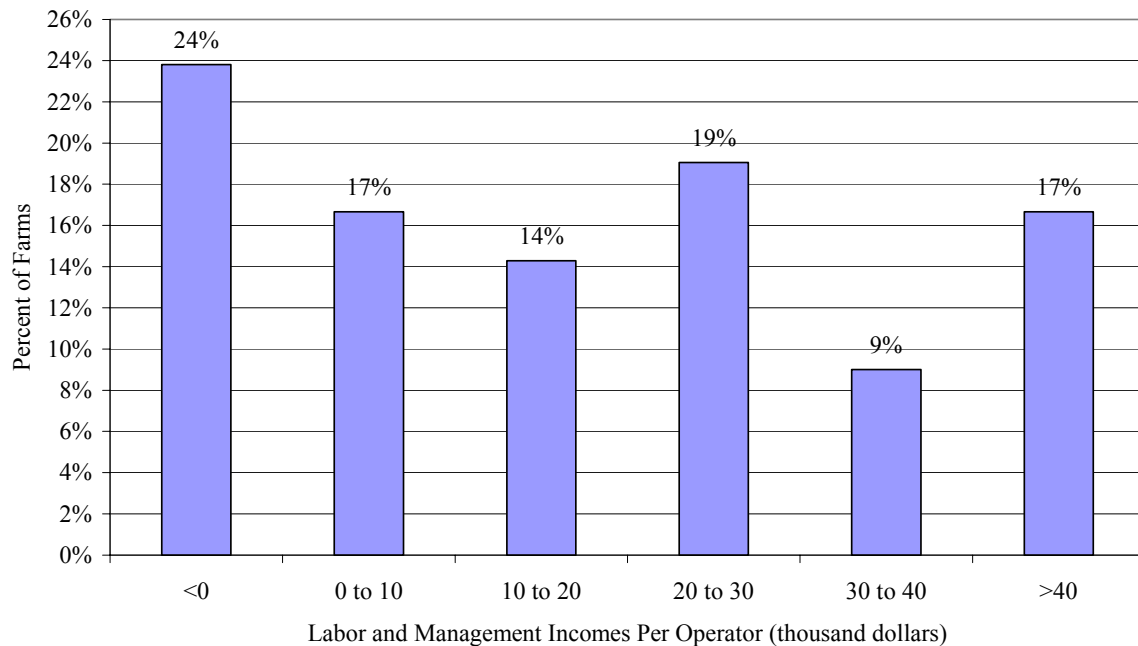
Item	42 Grazing Dairy Farms ¹²	Average Top 30% Farms ¹²
Net farm income without appreciation	\$ 54,103	\$ 83,594
Family labor unpaid @ \$2,200 per month	- 4,955	- 5,212
Interest on average equity capital @ 5% real rate	- 25,650	- 24,988
Labor & Management Income per Farm	\$ 23,498	\$ 53,393
Labor & Management Income per Operator/Manager	\$ 17,801	\$ 46,429
Labor & Management Income per Operator per Cow	\$ 187	\$ 404

¹²See page 1 for a description of these groups of farms.

Labor and management income per operator averaged \$17,801 on these 42 farms in 2005. The range in labor and management income per operator was from less than \$-50,000 to more than \$257,000. Returns to labor and management were less than \$0 on 24 percent of the farms. Labor and management incomes per operator were between \$0 and \$30,000 on 50 percent of the farms while 26 percent showed labor and management incomes of \$30,000 or more per operator.

DISTRIBUTION OF LABOR & MANAGEMENT INCOMES PER OPERATOR

42 Intensive Grazing Farms, 2005



The distribution of labor and management incomes per operator on grazing farms is somewhat similar to the distribution for all farms across the state that participate in the DFBS project. A large percentage of farms fall near \$0 to \$20,000 with a considerable percentage less than zero. One comparison to make to the state distribution is the percentage of farms that were above \$20,000 labor and management income per operator. For the intensive grazing farms, 45% of the farms had returns that were over \$20,000, while for 215 farms across the state, 52% had returns greater than \$20,000 in 2005.

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. 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

Intensive Grazing Dairy Farms, 2005

Item	42 Grazing Dairy Farms ¹³	Average Top 30% Farms ¹³
Net farm income with appreciation	\$ 80,766	\$ 119,660
Family labor unpaid @\$2,200 per month	- 4,955	- 5,212
Value of operators' labor & management	<u>- 39,881</u>	<u>- 35,538</u>
Return on equity capital with appreciation	\$ 35,930	\$ 78,910
Interest paid	<u>+ 10,814</u>	<u>+ 15,067</u>
Return on total capital with appreciation	\$ 46,744	\$ 93,977
Return on equity capital without appreciation	\$ 9,267	\$ 42,843
Return on total capital without appreciation	\$ 20,081	\$ 57,910
Rate of return on average equity capital:		
with appreciation	7.0%	15.8%
without appreciation	1.8%	8.6%
Rate of return on average total capital:		
with appreciation	6.6%	12.1%
without appreciation	2.8%	7.5%
Net farm income from operations ratio	0.17	0.23

¹³See page 1 for a description of these groups of farms.

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 2005, lease payments were discounted by 7.25 percent to obtain their present value.

Advanced government receipts are included as current liabilities. Government payments received in 2005 that are for participation in the 2006 program are the end year balance and payments received in 2004 for participation in the 2005 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.

2005 FARM BUSINESS & NONFARM BALANCE SHEET

42 Intensive Grazing Dairy Farms, 2005

Farm Assets			Farm Liabilities & Net Worth		
	Jan. 1	Dec. 31		Jan. 1	Dec. 31
<u>Current</u>			<u>Current</u>		
Farm cash, checking & savings	\$ 3,227	\$ 3,125	Accounts payable	\$ 10,933	\$ 10,352
Accounts receivable	18,159	19,603	Operating debt	6,148	11,599
Prepaid expenses	228	261	Short Term	178	261
Feed & supplies	<u>45,744</u>	<u>46,990</u>	Advanced govt. receipts	0	0
Total Current	\$ 67,358	\$ 69,979	Current Portion:		
			Intermediate	10,326	12,680
			Long Term	<u>5,025</u>	<u>5,652</u>
			Total Current	\$ 32,610	\$ 40,543
<u>Intermediate</u>			<u>Intermediate</u>		
Dairy cows:			Structured debt		
owned	\$ 113,803	\$ 119,822	1-10 years	\$ 71,111	\$ 67,694
leased	404	206	Financial lease		
Heifers	61,844	77,631	(cattle/machinery)	1,175	2,652
Bulls & other livestock	2,868	3,274	Farm Credit stock	<u>2,136</u>	<u>1,995</u>
Mach. & equip. owned	118,527	131,146	Total Intermediate	\$ 74,422	\$ 72,341
Mach. & equip. leased	771	2,446			
Farm Credit stock	2,136	1,995			
Other stock/certificate	<u>5,389</u>	<u>6,447</u>			
Total Intermediate	\$ 305,741	\$ 342,967			
<u>Long Term</u>			<u>Long Term</u>		
Land & buildings:			Structured debt		
owned	\$ 305,094	\$ 331,907	>10 years	\$ 83,765	\$ 96,786
leased	<u>0</u>	<u>146</u>	Financial lease		
Total Long Term	\$ 305,094	\$ 332,053	(structures)	<u>0</u>	<u>146</u>
			Total Long Term	\$ 83,765	\$ 96,932
Total Farm Assets	\$ 678,193	\$ 744,999	Total Farm Liab.	\$190,797	\$ 209,817
			FARM NET WORTH	\$ 487,396	\$ 535,182

Nonfarm Assets, Liabilities & Net Worth (Average of 20 farms reporting)

Assets			Liabilities & Net Worth		
	Jan. 1	Dec. 31		Jan. 1	Dec. 31
Personal cash, checking & savings	\$ 12,443	\$ 13,383	Nonfarm Liabilities	\$ 381	\$ 2,829
Cash value life insurance	6,013	6,607			
Nonfarm real estate	15,250	18,750			
Auto (personal share)	5,450	5,500			
Stocks & bonds	23,656	37,247			
Household furnishings	10,050	10,050			
All other nonfarm assets	<u>9,207</u>	<u>9,367</u>			
Total Nonfarm Assets	\$ 82,070	\$ 100,905	NONFARM NET WORTH	\$ 81,689	\$ 98,076

Farm & Nonfarm Assets, Liabilities, and Net Worth¹⁴

	Jan. 1	Dec. 31
Total Assets	\$ 760,263	\$ 845,904
Total Liabilities	<u>191,178</u>	<u>212,646</u>
TOTAL FARM & NONFARM NET WORTH	\$ 569,085	\$ 633,258

¹⁴Assumes 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 dollars 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 that has been falling or is less than 1.5 warrants additional evaluation. An adequate amount of working capital will be related to the size of the farm business.

BALANCE SHEET ANALYSIS
Intensive Grazing Dairy Farms, 2005

Item	42 Grazing Dairy Farms ¹⁵		Average Top 30% Farms ¹⁵	
<u>Financial Ratios - Farm:</u>				
Percent equity	72%		66%	
Debt/asset ratio: total	0.28		0.34	
long-term	0.29		0.41	
intermediate/current	0.27		0.30	
Leverage Ratio	0.39		0.53	
Current Ratio	1.73		1.08	
Working Capital:	\$29,435, As % of Expenses	11%	(\$5,789)	2%
<u>Farm Debt Analysis:</u>				
Accounts payable as % of total debt	5%		7%	
Long-term liabilities as a % of total debt	46%		50%	
Current & inter. liabilities as a % of total debt	54%		50%	
Cost of term debt (weighted average)	6.1%		5.5%	
	42 Grazing Dairy Farms ¹⁵		Average Top 30% Farms ¹⁵	
	Per Cow	Per Tillable Acre Owned	Per Cow	Per Tillable Acre Owned
<u>Farm Debt Levels:</u>				
Total farm debt	\$ 2,243	\$ 1,362	\$ 2,449	\$ 1,596
Long-term debt	1,036	629	1,215	792
Intermediate & long term	1,809	1,099	1,844	1,201
Intermediate & current debt	1,207	733	1,234	804

¹⁵ See page 1 for a description of these groups of farms.

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
42 Intensive Grazing Dairy Farms, 2005

Item	Real Estate		Machinery & Equipment	
Value beginning of year		\$ 305,094		\$ 118,527
Purchases	\$ 32,946 ¹⁶		\$ 27,541	
Gift & inheritance	+ 0		+ 392	
Lost capital	- 10,156			
Sales	- 0		- 651	
Depreciation	- 7,446		- 17,678	
Net investment		= 15,344		= 9,604
Appreciation		+ 11,469		+ 3,015
Value end of year		\$ 331,907		\$ 131,146

¹⁶\$11,449 land and \$21,497 building 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)
Intensive Grazing Dairy Farms, 2005

Item	42 Grazing Dairy Farms ¹⁷	Average Top 30% Farms ¹⁷
Beginning of year farm net worth	\$ 487,395	\$ 455,733
Net farm income w/o appreciation	\$ 54,103	\$ 83,594
+Nonfarm cash income	+ 5,170	+ 4,767
-Personal withdrawals & family expenditures excluding nonfarm borrowings	<u>- 39,214</u>	<u>- 35,357</u>
RETAINED EARNINGS	+\$ 20,059	+\$ 53,003
Nonfarm noncash transfers to farm	\$ 392	\$ 0
+Cash used in business from nonfarm capital	+ 10,413	+ 5,895
-Note or mortgage from farm real estate sold (nonfarm)	<u>- 0</u>	<u>- 0</u>
CONTRIBUTED/ WITHDRAWN CAPITAL	+\$ 10,805	+\$ 5,895
Appreciation	\$ 26,663	\$ 36,067
-Lost capital	<u>- 10,156</u>	<u>- 12,351</u>
CHANGE IN VALUATION EQUITY	+\$ 16,507	+\$ 23,716
IMBALANCE/ERROR	<u>- -416</u>	<u>- -2,706</u>
End of year net worth ¹⁸	=\$535,182	=\$541,053
<hr/>		
<u>Change in Net Worth</u>		
Without appreciation	\$ 21,124	\$ 49,253
With appreciation	\$ 47,787	\$ 85,320

¹⁷See page 1 for a description of these groups of farms.

¹⁸May 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. You should be aware that all profitability measures may be affected by this error.

ANNUAL CASH FLOW STATEMENT
42 Intensive Grazing Dairy Farms, 2005

Item	Average	
<u>Cash Flow from Operating Activities</u>		
Cash farm receipts	\$ 302,530	
- Cash farm expenses	232,271	
- Extraordinary expense	<u>1,421</u>	
= Net cash farm income		\$ 68,838
Personal withdrawals & family expenses including nonfarm debt payments	\$ 40,480	
- Nonfarm income	<u>5,170</u>	
- Net cash withdrawals from the farm		<u>\$ 35,310</u>
= Net Provided by Operating Activities		\$ 33,528
<u>Cash Flow From Investing Activities</u>		
Sale of assets: machinery	\$ 651	
+ real estate	0	
+ other stock & cert.	<u>27</u>	
= Total asset sales		\$ 678
Capital purchases: expansion livestock	\$ 3,638	
+ machinery	27,541	
+ real estate	32,946	
+ other stock & cert.	<u>397</u>	
- Total invested in farm assets		<u>\$ 64,521</u>
= Net Provided by Investment Activities		\$ -63,843
<u>Cash Flow From Financing Activities</u>		
Money borrowed (intermediate & long term)	\$ 43,727	
+ Money borrowed (short term)	492	
+ Increase in operating debt	5,451	
+ Cash from nonfarm capital used in business	10,413	
+ Money borrowed - nonfarm	<u>1,267</u>	
= Cash inflow from financing		\$ 60,946
Principal payments (intermediate & long term)	\$ 30,738	
+ Principal payments (short term)	409	
+ Decrease in operating debt	<u>0</u>	
- Cash outflow for financing		<u>\$ 31,148</u>
= Net Provided by Financing Activities		\$ 29,798
<u>Cash Flow From Reserves</u>		
Beginning farm cash, checking & savings		\$ 3,227
- Ending farm cash, checking & savings		<u>3,125</u>
= Net Provided from Reserves		\$ 102
Imbalance (error)		<u>\$ -416</u>

Repayment Analysis

A valuable use of cash flow analysis is to compare the debt payments planned for the last year with the amount actually paid. The measures listed below provide a number of different perspectives on the repayment performance of the business. However, the critical question to many farmers and lenders is whether planned payments can be made in 2006. The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to planned 2006 debt payments shown below.

FARM DEBT PAYMENTS PLANNED

Same Intensive Grazing Dairy Farms, 2004 & 2005

Debt Payments	Same 25 Grazing Dairy Farms			Same 12 Farms in Top 30% Farms		
	2005 Payments		Planned 2006	2005 Payments		Planned 2006
	Planned	Made		Planned	Made	
Long term	\$ 13,705	\$ 15,002	\$ 16,282	\$ 15,289	\$ 18,283	\$ 16,824
Intermediate term	20,917	32,700	14,848	26,908	38,009	17,774
Short term	151	608	312	225	175	50
Operating (net reduction)	496	2,973	731	583	436	1,271
Accounts payable (net reduction)	8	2,045	240	0	958	0
Total	\$ 35,277	\$ 53,328	\$ 32,413	\$ 43,005	\$ 57,861	\$ 35,919
Per cow	\$ 343	\$ 518		\$ 365	\$ 492	
Per cwt. 2005 milk	\$ 2.08	\$ 3.15		\$ 2.28	\$ 3.06	
Percent of total 2005 farm receipts	11%	16%		12%	16%	
Percent of 2005 milk receipts	12%	19%		14%	19%	

The coverage ratios measure the ability of the farm business to meet its planned debt payment schedule. The ratios show the percentage of payments planned for 2005 (as of December 31, 2004) that could have been made with the amount available for debt service in 2005. Farmers who did not participate in DFBS in 2004 have their 2005 coverage ratios based on planned debt payments for 2006.

COVERAGE RATIOS

Same Intensive Grazing Dairy Farms, 2004 & 2005

Item	Average	Item	Average
Same 25 Grazing Dairy Farms, 2004 & 2005			
(A)=Amount Available for Debt Service	\$ 50,894	(A')=Repayment Capacity	\$ 55,452
(B)=Debt Payments Planned for 2005	\$ 35,277	(B)=Debt Payments Planned for 2005	\$ 35,277
(A/B)=Cash Flow Coverage Ratio for 2005	1.44	(A'/B)=Debt Coverage Ratio for 2005	1.57

Same 12 Farms in Top 30% Farms, 2004 & 2005			
(A)=Amount Available for Debt Service	\$ 73,133	(A')=Repayment Capacity	\$ 91,845
(B)=Debt Payments Planned for 2005	\$ 43,005	(B)=Debt Payments Planned for 2005	\$ 43,005
(A/B)=Cash Flow Coverage Ratio for 2005	1.70	(A'/B)=Debt Coverage Ratio for 2005	2.14

ANNUAL CASH FLOW WORKSHEET

Intensive Grazing Dairy Farms, 2005

Item	42 Grazing Dairy Farms		Average Top 30% Farms	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average no. of cows	95		115	
Total cwt. of milk sold		15,868		18,525
<u>Accrual Operating Receipts</u>				
Milk	\$ 2,755	\$ 16.41	\$ 2,626	\$ 16.23
Dairy cattle	290	1.73	306	1.89
Dairy calves	81	0.49	107	0.66
Other livestock	14	0.08	25	0.16
Crops	-3	-0.02	-2	-0.01
Misc. Receipts	180	1.07	111	0.69
Total	\$ 3,317	\$ 19.76	\$ 3,172	\$ 19.61
<u>Accrual Operating Expenses</u>				
Hired labor	\$ 306	\$ 1.82	\$ 259	\$ 1.60
Dairy grain & concentrate	670	3.99	626	3.87
Dairy roughage	82	0.49	89	0.55
Nondairy feed	0	0.00	0	0.00
Professional nutritional services	1	0.01	1	0.01
Mach. hire, rent & lease	68	0.41	47	0.29
Mach. repair & vehicle expense	173	1.03	135	0.83
Fuel, oil & grease	91	0.54	73	0.45
Replacement livestock	25	0.15	2	0.01
Breeding	34	0.20	28	0.17
Vet & medicine	67	0.40	61	0.37
Milk marketing	158	0.94	132	0.81
Bedding	19	0.11	13	0.08
Milking supplies	57	0.34	41	0.25
Cattle lease	2	0.01	6	0.04
Custom boarding	22	0.13	14	0.09
bST expense	7	0.04	2	0.01
Livestock professional fees	14	0.09	6	0.04
Other livestock expense	35	0.21	30	0.18
Fertilizer & lime	93	0.55	139	0.86
Seeds & plants	29	0.17	25	0.15
Spray & other crop expense	22	0.13	14	0.08
Crop professional fees	2	0.01	2	0.01
Land, bldg., fence repair	50	0.30	57	0.35
Taxes	73	0.43	62	0.38
Real estate rent & lease	58	0.35	37	0.23
Insurance	44	0.26	34	0.21
Utilities	81	0.48	71	0.44
Miscellaneous	29	0.17	32	0.20
Total Less Interest Paid	\$ 2,314	\$ 13.79	\$ 2,037	\$ 12.60
<u>Net Accrual Operating Income</u>		<u>Total</u>		<u>Total</u>
(without interest paid)	\$	94,869	\$	129,999
- Change in livestock & crop invent. ¹⁹		9,646		24,183
- Change in accounts receivable		1,444		-1,377
- Change in feed & supply inventory ²⁰		2,356		5,090
+ Change in accounts payable ²¹		-442		-909
NET CASH FLOW	\$	80,982	\$	101,194
- Net family withdrawals	-	34,021	-	30,517
Available for Farm	\$	46,961	\$	70,678
- Farm debt payments	-	45,300	-	58,727
Available for Farm Investment	\$	1,661	\$	11,951
- Capital purchases	\$	64,521	\$	74,282
Additional Capital Needed	\$	62,860	\$	62,331

¹⁹Includes change in advance government receipts. ²⁰Includes change in prepaid expenses. ²¹Excludes 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 Intensive Grazing Dairy Farms, 2005

Item	42 Grazing Dairy Farms ²³			Average Top 30% Farms ²³		
<u>Land</u>	<u>Owned</u>	<u>Rented</u>	<u>Total</u>	<u>Owned</u>	<u>Rented</u>	<u>Total</u>
Tillable	154	110	264	178	119	297
Nontillable	36	14	50	15	19	34
Other nontill.	100	9	109	97	0	97
Total	290	133	423	290	138	428
<u>Crop Yields</u>	<u>Farms</u>	<u>Acres²²</u>	<u>Prod/Acre</u>	<u>Farms</u>	<u>Acres²²</u>	<u>Prod/Acre</u>
Hay crop	38	158	1.9 tn DM	13	132	2.0 tn DM
Corn silage	27	53	14.9 tn 5.2 tn DM	8	52	16.6 tn 6.0 tn DM
Other forage	5	18	1.6 tn DM	2	19	1.7 tn DM
Total forage	38	198	2.5 tn DM	13	167	2.8 tn DM
Corn grain	4	49	119 bu	0	0	0 bu
Oats	0	0	0 bu	0	0	0 bu
Wheat	2	20	28 bu	0	0	0 bu
Other crops	9	50		4	71	
Tillable pasture	25	110		11	117	
Idle	9	19		4	23	
Total Tillable Acres	42	264		13	297	

²²This column represents the average acreage for the farms producing that crop. For the 42 New York dairy farms, average acreages including those farms not producing were hay crop 143, corn silage 34, corn grain 2, oats 1, wheat 1, tillable pasture 65, and idle 4.

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 Intensive Grazing Dairy Farms, 2005

Item	38 Grazing Dairy Farms ²³	Average Top 30% Farms ²³
Total tillable acres per cow	2.86	2.60
Total forage acres per cow	1.99	1.45
Harvested forage dry matter, tons per cow	5.03	4.04

²³See page 1 for a description of these groups of farms. Excludes farms that do not harvest forages.

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. Intensive grazing was used by all farms reported in the below tables.

CROP RELATED ACCRUAL EXPENSES
Intensive Grazing Dairy Farms Reporting, 2005

Item	Total Per Till. Acre	All Corn Per Acre	Corn Silage Per Ton DM	Corn Grain Per Dry Sh. Bu.	Hay Crop		Pasture	
					Per Acre	Per Ton DM	Per Till. Pasture Acre	Per Total Pasture Acre
All Grazing Farms								
No. of farms reporting	38 ²⁴	11			11		7	
Ave. number of acres	285	80			196		4	64
Fert. & lime	\$ 33.91	\$ 66.89	\$ 11.83	\$ 0.11	\$ 24.56	\$ 13.06	\$ 12.59	\$ 29.03
Seeds & plants	10.48	36.08	7.15	0.08	8.91	5.33	1.33	0.35
Spray & other	<u>7.89</u>	<u>29.38</u>	<u>6.47</u>	<u>0.08</u>	<u>0.86</u>	<u>0.50</u>	<u>0.00</u>	<u>0.00</u>
TOTAL	\$ 52.28	\$ 132.35	\$ 25.45	\$ 0.27	\$ 34.33	\$ 18.89	\$ 13.92	\$ 29.38
Average Top 30% Farms								
No. of farms reporting	13	2			3		3	
Ave. number of acres	297	38			144		9	59
Fert. & lime	\$ 53.36	\$ 89.31	\$ 14.41	\$ 0.00	\$ 51.58	\$ 29.02	\$ 29.37	\$ 42.38
Seeds & plants	9.55	44.60	9.75	0.00	5.33	2.33	3.11	0.82
Spray & other	<u>5.27</u>	<u>47.53</u>	<u>9.19</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>
TOTAL	\$ 68.18	\$ 181.44	\$ 33.35	\$ 0.00	\$ 56.91	\$ 31.35	\$ 32.48	\$ 43.20

²⁴Excludes farms that do not harvest forages.

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
Intensive Grazing Dairy Farms, 2005

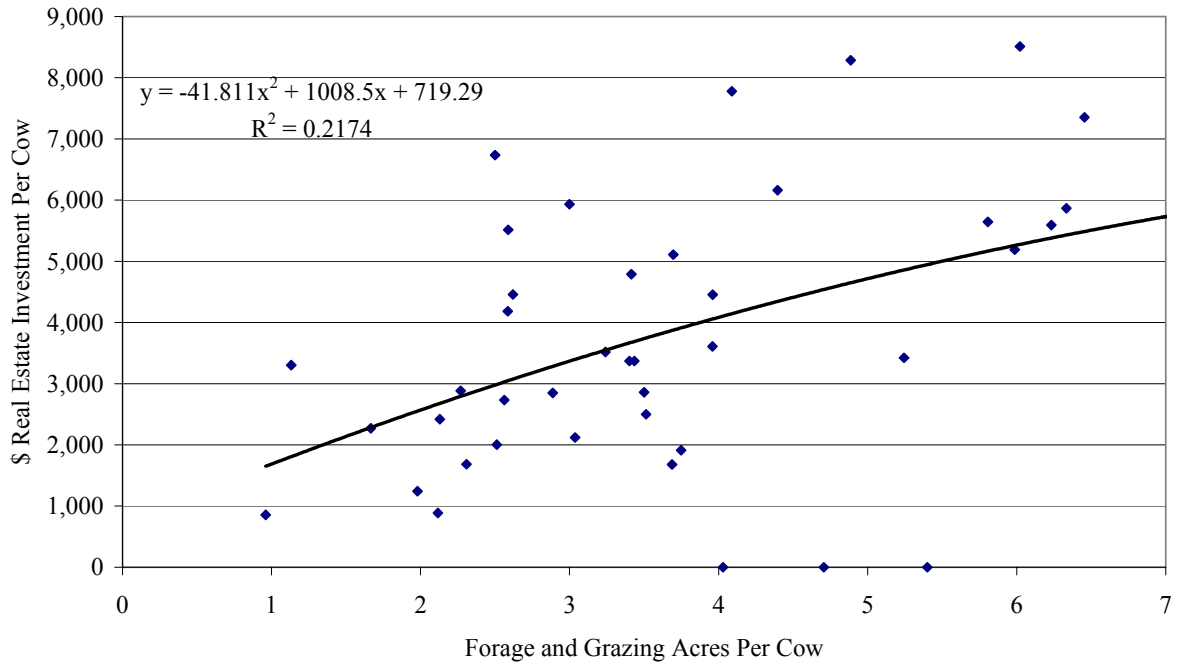
Machinery Expense	38 Grazing Dairy Farms ²⁵		Average Top 30% Farms ²⁵	
	Total Expenses	Per Tillable Acre	Total Expenses	Per Tillable Acre
Fuel, oil & grease	\$ 9,131	\$ 32.05	\$ 8,350	\$ 28.08
Mach. repair & vehicle exp.	17,665	62.01	15,440	51.92
Machine hire, rent & lease	7,077	24.84	5,434	18.27
Interest (5%)	6,777	23.79	6,375	21.44
Depreciation	<u>18,672</u>	<u>65.54</u>	<u>14,567</u>	<u>48.99</u>
Total	\$ 59,322	\$ 208.23	\$ 50,166	\$ 168.70

²⁵See page 1 for a description of these groups of farms. Excludes farms that do not harvest forages.

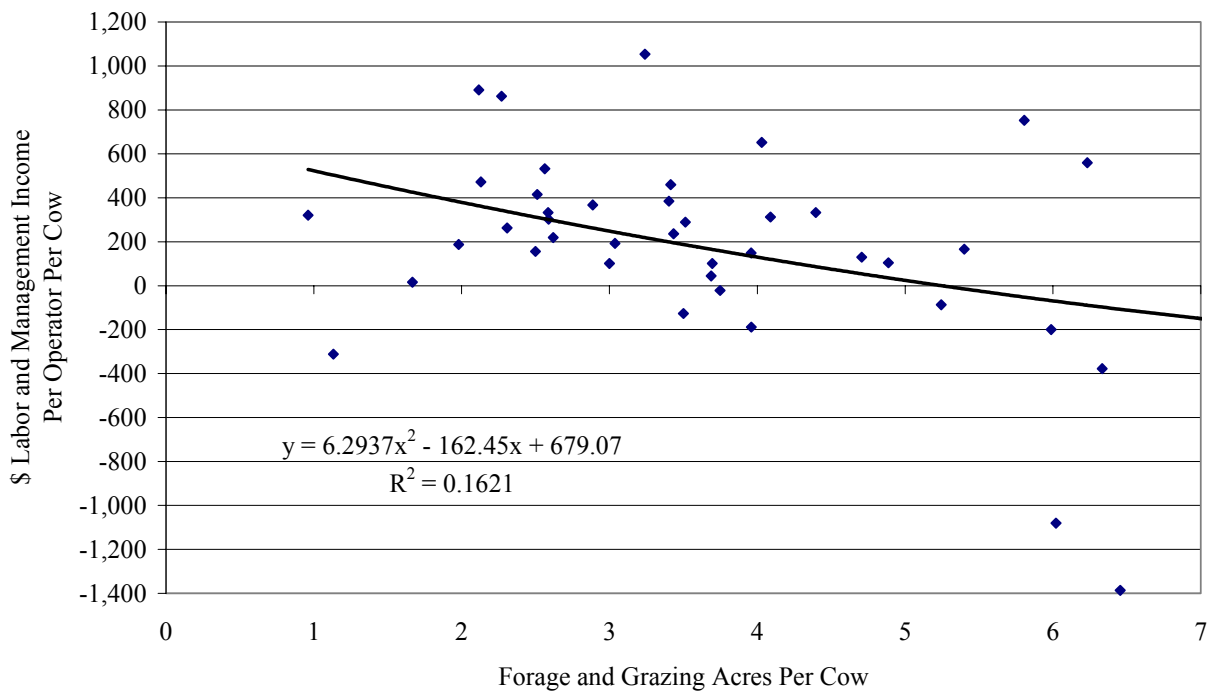
Cropping Analysis (continued)

The charts below show the relationship between the stocking rate (forage and grazing acres per cow) and labor and management income per operator per cow and real estate investment per cow. Stocking rate is total tillable acres plus nontillable pasture acres less corn grain acres, all divided by the average number of cows.

REAL ESTATE INVESTMENT/COW & FORAGE AND GRAZING ACRES/COW
42 Intensive Grazing Farms, 2005



LABOR AND MANAGEMENT INCOME/OPERATOR/COW & FORAGE AND GRAZING ACRES/COW
42 Intensive Grazing Farms, 2005



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 20 through 23.

DAIRY HERD INVENTORY Intensive Grazing Dairy Farms, 2005

Item	Dairy Cows		Bred Heifers		Open Heifers		Calves	
	No.	Value	No.	Value	No.	Value	No.	Value
42 Grazing Dairy Farms²⁶								
Beg. year (owned)	92	\$ 113,802	24	\$ 29,926	26	\$ 21,522	20	\$ 10,395
+ Change w/o apprec.		487		8,968		-1,988		2,849
+ Appreciation		<u>5,532</u>		<u>2,480</u>		<u>874</u>		<u>2,604</u>
End year (owned)	90	\$ 119,822	31	\$ 41,375	24	\$ 20,408	24	\$ 15,848
End including leased	94							
Average number	95		76	(all age groups)				
Average Top 30% Farms²⁶								
Beg. year (owned)	103	\$ 128,423	27	\$ 34,316	29	\$ 26,414	28	\$ 16,485
+ Change w/o apprec.		5,854		20,228		-8,675		6,696
+ Appreciation		<u>11,605</u>		<u>5,694</u>		<u>1,203</u>		<u>7,538</u>
End year (owned)	106	\$145,882	41	\$ 60,238	21	\$ 18,942	37	\$ 30,719
End including leased	116							
Average number	115		94	(all age groups)				

²⁶ See page 1 for a description of these groups of farms.

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.

MILK PRODUCTION Intensive Grazing Dairy Farms, 2005

Item	42 Grazing Dairy Farms ²⁷	Average Top 30% Farms ²⁷
Total milk sold, pounds	1,586,813	1,852,540
Milk sold per cow, pounds	16,783	16,174
Average milk plant test, percent butterfat	3.81%	3.84%

²⁷ See page 1 for a description of these groups of farms.

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

ANIMALS LEAVING THE HERD Intensive Grazing Dairy Farms, 2005

Item	42 Grazing Dairy Farms		Average Top 30% Farms	
	Number	Percent ²⁸	Number	Percent ²⁸
Cows sold for beef	19	20.1	21	18.1
Cows sold for dairy	5	5.5	3	2.4
Cows died	5	5.2	5	4.8
Culling rate ²⁹		25.3		22.8

²⁸Percent of average number of cows in the herd. ²⁹Cows 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**
Intensive Grazing Dairy Farms, 2005

Item	42 Grazing Dairy Farms ³⁰		Average Top 30% Farms ³⁰	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Accrual Cost of Producing Milk				
Operating costs	\$ 1,904	\$ 11.35	\$ 1,657	\$ 10.24
Purchased inputs costs	\$ 2,182	\$ 13.00	\$ 1,896	\$ 11.72
Total Costs	\$ 2,928	\$ 17.45	\$ 2,470	\$ 15.27
Accrual Receipts From Milk				
Net milk receipts	\$ 2,755	\$ 16.41	\$ 2,626	\$ 16.23
Net Farm Income	\$ 2,617	\$ 15.47	\$ 2,740	\$ 15.42
without Appreciation	\$ 572	\$ 3.41	\$ 730	\$ 4.50
with Appreciation	\$ 854	\$ 5.09	\$ 1,045	\$ 6.46

³⁰ See page 1 for a description of these groups of farms.

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
Intensive Grazing Dairy Farms, 2005

Item	42 Grazing Dairy Farms ³⁰		Average Top 30% Farms ³⁰	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Purchased dairy grain & concentrate	\$ 670	\$ 3.99	\$ 626	\$ 3.87
Purchased dairy roughage	82	0.49	89	0.55
Total Purchased Dairy Feed	\$ 752	\$ 4.48	\$ 715	\$ 4.42
Purchased grain & concentrate as % of milk receipts		26%		25%
Purchased feed & crop expense	\$ 896	\$ 5.34	\$ 894	\$ 5.53
Purchased feed & crop expense as % of milk receipts		34%		33%
Breeding	\$ 34	\$ 0.20	\$ 28	\$ 0.17
Veterinary & medicine	67	0.40	61	0.37
Milk marketing	158	0.94	132	0.81
Bedding	19	0.11	13	0.08
Milking supplies	57	0.34	41	0.25
Cattle lease	2	0.01	6	0.04
Custom boarding	23	0.13	14	0.09
bST expense	7	0.04	2	0.01
Livestock professional fees	14	0.09	6	0.04
Other livestock expense	35	0.21	30	0.18

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
Intensive Grazing Dairy Farms, 2005

Item	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
<u>42 Grazing Dairy Farms</u> ³¹				
Farm capital	\$ 263,554	\$ 7,526	\$ 2,700	\$ 4,621
Real estate		3,369		2,069
Machinery & equipment	46,832	1,337	480	

Ratios:

Asset Turnover Ratio	Operating Expense	Interest Expense	Depreciation Expense
0.48	0.71	0.03	0.08

Average Top 30% Farms³¹

Farm capital	\$ 296,577	\$ 6,758	\$ 2,603	\$ 4,345
Real estate		2,870		1,845
Machinery & equipment	48,851	1,113	429	

Ratios:

Asset Turnover Ratio	Operating Expense	Interest Expense	Depreciation Expense
0.52	0.66	0.04	0.07

³¹ See page 1 for a description of these groups of farms.

Capital and Labor Efficiency Analysis (continued)**LABOR FORCE INVENTORY AND ANALYSIS**

Intensive Grazing Dairy Farms, 2005

Labor Force	Months	Age	Years of Education	Value of Labor & Management
<u>42 Grazing Dairy Farms</u>				
Operator number 1	12.4	44	13	\$ 30,821
Operator number 2	4.2	39	12	9,060
Family paid	3.4			
Family unpaid	2.3			
Hired	<u>10.1</u>			
Total	32.4	/ 12 = 2.70 Worker Equivalent 1.32 Operator/Manager Equivalent		
<u>Average Top 30% Farms</u>				
Total Labor Force	31.4	/ 12 = 2.61 Worker Equivalent		
Operator's Labor		1.15 Operator/Manager Equivalent		

Labor Efficiency	<u>42 Grazing Dairy Farms</u>		<u>Average Top 30% Farms</u>	
	Total	Per Worker	Total	Per Worker
Cows, average number	95	35	115	44
Milk sold, pounds	1,586,813	587,165	1,852,540	709,106
Tillable acres	264	98	297	114

Labor Costs	<u>42 Grazing Dairy Farms</u>		<u>Average Top 30% Farms</u>	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Value of operator(s) labor (\$2,200/month)	\$ 387	\$ 2.31	\$ 297	\$ 1.83
Family unpaid (\$2,200/month)	52	0.31	45	0.28
Hired	<u>306</u>	<u>1.82</u>	<u>259</u>	<u>1.60</u>
Total Labor	\$ 745	\$ 4.44	\$ 601	\$ 3.71
Machinery Cost	<u>\$ 586</u>	<u>\$ 3.49</u>	<u>\$ 438</u>	<u>\$ 2.71</u>
Total Labor & Machinery	\$ 1,331	\$ 7.93	\$ 1,039	\$ 6.42
Hired labor expense per hired worker equivalent		\$25,645		\$26,281
Hired labor expense as % of milk sales		11.1%		9.9%

COMPARATIVE ANALYSIS OF THE FARM BUSINESS

Progress of the Farm Business

Comparing your business with average data from regional 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.

PROGRESS OF THE FARM BUSINESS Same Intensive Grazing Dairy Farms, 2004 & 2005³²

Selected Factors	Same 25 Grazing Dairy Farms		Same 12 Farms in Top 30% Farms	
	2004	2005	2004	2005
<u>Size of Business</u>				
Average number of cows	106	103	114	118
Average number of heifers	73	85	84	98
Milk sold, pounds	1,676,923	1,695,652	1,800,321	1,888,750
Worker equivalent	2.83	2.72	2.67	2.64
Total tillable acres	263	275	284	301
<u>Rates of Production</u>				
Milk sold per cow, pounds	15,868	16,469	15,735	16,052
Hay DM per acre, tons	2.8	2.2	2.6	2.0
Corn silage per acre, tons	15.2	14.8	15.8	15.6
<u>Labor Efficiency</u>				
Cows per worker	37	38	43	45
Milk sold/worker, pounds	592,552	623,401	674,278	715,435
<u>Cost Control</u>				
Grain & concentrate purchased as % of milk sales	24%	23%	24%	24%
Dairy feed & crop expense per cwt. milk	\$ 5.48	\$ 5.32	\$ 5.99	\$ 5.55
Labor & machinery costs/cow	\$ 1,207	\$ 1,215	\$ 1,065	\$ 1,018
Operating cost of producing cwt. of milk	\$ 11.68	\$ 11.54	\$ 11.16	\$ 10.38
<u>Capital Efficiency³³</u>				
Farm capital per cow	\$ 6,664	\$ 7,514	\$ 6,138	\$ 6,692
Machinery & equipment per cow	\$ 1,145	\$ 1,317	\$ 989	\$ 1,084
Asset turnover ratio	0.51	0.48	0.56	0.52
<u>Profitability</u>				
Net farm income without appreciation	\$ 64,620	\$ 61,439	\$ 83,459	\$ 83,596
Net farm income with appreciation	\$ 92,318	\$ 94,609	\$ 112,689	\$ 121,535
Labor & management income per operator/manager	\$ 25,038	\$ 21,934	\$ 46,431	\$ 48,988
Rate of return on equity capital with appreciation	9.5%	9.2%	17.2%	16.4%
Rate of return on all capital with appreciation	8.1%	8.1%	12.4%	12.5%
<u>Financial Summary</u>				
Farm net worth, end year	\$ 510,734	\$ 574,212	\$ 459,739	\$ 545,369
Debt to asset ratio	0.31	0.29	0.37	0.35
Farm debt per cow	\$ 2,172	\$ 2,336	\$ 2,429	\$ 2,453

³²Farms participating both years.

³³Average for the year.

RECEIPTS AND EXPENSES PER COW AND PER CWT.
Same 25 Intensive Grazing Dairy Farms, 2004 & 2005

Item	2004		2005	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	106		103	
Cwt. Of Milk Sold		16,769		16,957
<u>ACCRUAL OPERATING RECEIPTS</u>				
Milk	\$ 2,756	\$17.37	\$ 2,747	\$16.68
Dairy cattle	208	1.31	308	1.87
Dairy calves	55	0.34	88	0.53
Other livestock	7	0.04	18	0.11
Crops	33	0.21	-21	-0.13
Miscellaneous receipts	<u>101</u>	<u>0.64</u>	<u>141</u>	<u>0.86</u>
Total Receipts	\$ 3,160	\$19.91	\$ 3,280	\$19.92
<u>ACCRUAL OPERATING EXPENSES</u>				
Hired labor	\$ 270	\$ 1.70	\$ 282	\$ 1.71
Dairy grain & concentrate	658	4.14	645	3.91
Dairy roughage	98	0.62	89	0.54
Nondairy feed	0	0.00	1	0.00
Professional nutritional services	1	0.01	1	0.00
Machine hire/rent/lease	78	0.49	65	0.39
Machinery repair & vehicle expense	162	1.02	158	0.96
Fuel, oil & grease	65	0.41	82	0.50
Replacement livestock	12	0.07	30	0.18
Breeding	31	0.19	34	0.21
Veterinary & medicine	62	0.39	73	0.44
Milk marketing	158	0.99	168	1.02
Bedding	20	0.12	17	0.10
Milking supplies	49	0.31	61	0.37
Cattle lease	5	0.03	3	0.02
Custom boarding	19	0.12	18	0.11
bST expense	7	0.05	8	0.05
Livestock professional fees	12	0.08	13	0.08
Other livestock expense	36	0.23	39	0.24
Fertilizer & lime	74	0.47	101	0.61
Seeds & plants	18	0.11	23	0.14
Spray/other crop expense	18	0.11	17	0.11
Crop professional fees	4	0.02	1	0.01
Land, building, fence repair	48	0.30	61	0.37
Taxes	59	0.37	74	0.45
Real estate rent/lease	48	0.30	55	0.34
Insurance	34	0.22	47	0.28
Utilities	69	0.43	77	0.47
Interest paid	108	0.68	127	0.77
Other professional fees	13	0.08	12	0.07
Miscellaneous	<u>19</u>	<u>0.12</u>	<u>15</u>	<u>0.09</u>
Total Operating Expenses	\$ 2,254	\$14.21	\$ 2,396	\$14.55
Expansion Livestock	2	0.01	37	0.23
Extraordinary Expense	48	0.30	19	0.12
Machinery Depreciation	149	0.94	154	0.93
Real Estate Depreciation	<u>95</u>	<u>0.60</u>	<u>77</u>	<u>0.47</u>
Total Expenses	\$ 2,548	\$16.06	\$ 2,683	\$16.30
Net Farm Income Without Appreciation	\$ 611	\$ 3.85	\$ 597	\$ 3.62

RECEIPTS AND EXPENSES PER COW AND PER CWT.
Same 12 Farms in Top 30% Intensive Grazing Dairy Farms, 2004 & 2005

Item	2004		2005	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	114		118	
Cwt. Of Milk Sold		18,003		18,887
<u>ACCRUAL OPERATING RECEIPTS</u>				
Milk	\$ 2,722	\$17.30	\$ 2,614	\$16.29
Dairy cattle	275	1.74	315	1.96
Dairy calves	65	0.41	110	0.69
Other livestock	15	0.10	27	0.17
Crops	33	0.21	-25	-0.16
Miscellaneous receipts	79	0.50	116	0.72
Total Receipts	\$ 3,189	\$20.27	\$ 3,158	\$19.67
<u>ACCRUAL OPERATING EXPENSES</u>				
Hired labor	\$ 237	\$ 1.51	\$ 267	\$ 1.66
Dairy grain & concentrate	661	4.20	622	3.87
Dairy roughage	127	0.81	93	0.58
Nondairy feed	0	0.00	0	0.00
Professional nutritional services	1	0.01	1	0.01
Machine hire/rent/lease	80	0.51	46	0.29
Machinery repair & vehicle expense	151	0.96	136	0.85
Fuel, oil & grease	59	0.37	72	0.45
Replacement livestock	8	0.05	2	0.02
Breeding	25	0.16	29	0.18
Veterinary & medicine	66	0.42	63	0.39
Milk marketing	126	0.80	132	0.82
Bedding	15	0.09	12	0.08
Milking supplies	41	0.26	39	0.24
Cattle lease	8	0.05	6	0.04
Custom boarding	15	0.09	15	0.09
bST expense	2	0.01	2	0.01
Livestock professional fees	12	0.08	6	0.04
Other livestock expense	33	0.21	31	0.19
Fertilizer & lime	114	0.72	138	0.86
Seeds & plants	19	0.12	24	0.15
Spray/other crop expense	15	0.09	12	0.08
Crop professional fees	7	0.05	2	0.01
Land, building, fence repair	57	0.36	59	0.37
Taxes	51	0.33	61	0.38
Real estate rent/lease	29	0.19	30	0.18
Insurance	30	0.19	34	0.21
Utilities	66	0.42	70	0.44
Interest paid	129	0.82	135	0.84
Other professional fees	15	0.10	12	0.07
Miscellaneous	19	0.12	21	0.13
Total Operating Expenses	\$ 2,218	\$14.10	\$ 2,173	\$13.54
Expansion Livestock	4	0.03	36	0.23
Extraordinary Expense	25	0.16	28	0.18
Machinery Depreciation	117	0.74	121	0.75
Real Estate Depreciation	95	0.61	88	0.55
Total Expenses	\$ 2,459	\$15.64	\$ 2,446	\$15.25
Net Farm Income Without Appreciation	\$ 729	\$ 4.64	\$ 710	\$ 4.43

Grazing 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

42 Intensive Grazing Dairy Farms, 2005

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) ³⁴	(12)	(12)	(12)	(11)	(11)	(14)	(14)
5.48	255	4,167,544	22,163	3.4	23	54	865,855
2.88	92	1,606,555	18,968	2.3	18	37	674,099
2.21	58	1,094,815	17,537	1.8	16	30	542,173
1.81	47	820,475	15,451	1.4	14	24	397,833
1.41	34	478,951	12,377	1.0	9	17	260,709

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)	
\$454	19%	\$304	\$915	\$625	\$3.99	
612	22	439	1,344	825	4.67	
707	26	601	1,571	953	5.66	
827	28	728	1,740	1,030	6.16	
970	35	1,014	2,141	1,301	7.55	

Value and Cost of Milk Production			Profitability			
Milk Receipts Per Cow	Operating Cost Milk Prod. Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income with Appreciation	Net Farm Income w/o Appreciation	Labor & Mgmt. Income Per Operator	Change in Net Worth with Appreciation
(12)	(12)	(12)	(4)	(4)	(4)	(8)
\$3,607	\$7.16	\$14.47	\$230,324	\$139,822	\$77,146	\$203,347
3,084	10.30	16.77	78,439	65,159	30,438	40,490
2,827	11.47	18.34	57,017	47,266	17,613	25,376
2,476	12.24	20.34	38,176	25,686	4,431	7,423
2,043	14.94	25.03	13,594	2,574	-21,575	-25,609

³⁴Page 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. Two areas that were examined this year were the source of dairy replacements and the breakdown of the milk income and marketing expenses. Following is a summary of this information.

SOURCE OF DAIRY REPLACEMENTS 53 New York Dairy Farms, 2005

<u>Animals Entering Herd</u>	<u>Average</u>
Number calving in 2005 for first time	139
Animals purchased, percent ³⁵	11%
Animals raised by farm, percent ³⁶	89%
<u>Current Heifer Inventory</u>	
Raised on dairy, percent	86%
Raised by a custom grower, percent	14%

³⁵Animals purchased are animals purchased from a different farm and were not the farm's genetics.

³⁶Animals 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, 139 animals calved for the first time in 2005. The breakdown of these animals for source was 11 percent purchased and 89 percent raised by the farm. Of the current heifer inventory, 86 percent were raised on the dairy and 14 percent were being 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, 25 intensive grazing 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 new line item in this section is the expenses associated with utilizing forward contracting or hedging programs to market milk, such as commission or broker fees. The fifth area is income from the compact program or 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. Your net farm price can be found on page 12 of your farm's DFBS report.

The table on page 42 reports the averages for these different areas. The table on page 43 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 fourths. Numbers for the different areas will not add to the totals for that quartile 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.

AVERAGE³⁷ MILK INCOME AND MARKETING REPORT
25 Intensive Grazing Dairy Farms, 2005

	Pounds	Percent	Price/Pound	Total	\$/Cwt of Milk
BASE FARM PRICE					
Butterfat	59,493.84	3.86%	\$ 1.69	\$ 100,498.53	\$ 6.52
Protein	48,207.47	3.13%	\$ 2.42	\$ 116,670.16	\$ 7.57
Solids	94,940.47	6.16%	\$ 0.11	\$ 10,658.58	\$ 0.69
Total Component Contribution					\$14.78
PPD	1,541,107.89			\$ 13,021.58	\$ 0.84
Base Farm Price					\$ 15.62
Premiums					
Quality				\$ 1,257.37	\$ 0.08
Volume				\$ 1,414.42	\$ 0.09
Market Premiums				\$ 8,042.79	\$ 0.52
Total Premiums					\$ 0.69
BASE FARM PRICE + PREMIUM					\$ 16.31
Deductions					
Promo				\$ 2,419.05	\$ 0.16
Hauling + Stop Charges				\$ 11,663.68	\$ 0.76
Market Fees & Coop Dues				\$ 1,333.74	\$ 0.09
Total Deductions					\$ 1.01
BASE FARM PRICE + PREMIUMS - DEDUCTIONS					\$ 15.30
Marketing Programs					
Futures Contracts, Forward Contracting, Etc.				\$ 0.00	\$ 0.00
Total Marketing Income					\$ 0.00
Patronage Dividends				\$ 652.32	\$ 0.04
NET PRICE RECEIVED ON FARM, ALL SOURCES					\$ 15.34
PPD - Hauling, \$ per cwt.					\$ 0.08
PPD - Hauling + Market Premiums, \$ per cwt.					\$ 0.60
Net Marketing Value (PPD + Total Premiums – Total Deductions), \$ per cwt.					\$ 0.52

³⁷Each calculation of an average is independent of all 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.

MILK PRICE INFORMATION BY QUARTILE^{38, 39}
 (Each Category Sorted Independently)
 25 Intensive Grazing Dairy Farms, 2005

	Lowest Quartile	←————→	Highest Quartile	
Butterfat, %	3.53	3.67	3.80	4.10
Protein, %	2.97	3.03	3.11	3.26
Other Solids, %	5.14	5.65	5.68	6.12
Butterfat, \$ per Cwt.	6.03	6.29	6.50	7.11
Protein, \$ per Cwt.	7.24	7.43	7.71	8.12
Other solids, \$ per Cwt.	0.67	0.69	0.71	0.73
Total Component Value per Cwt.	\$14.00	\$14.46	\$14.83	\$15.94
PPD, \$ per Cwt.	0.57	0.70	0.79	1.07
Base Farm Price per Cwt.	\$14.75	\$15.26	\$15.65	\$16.67
Quality, \$ per Cwt.	.04	.12	.22	.56
Volume, \$ per Cwt.	.00	.01	.08	.28
Market premium, \$ per Cwt.	-.08	.13	.25	.58
Total Premium, \$ per Cwt.	.15	.35	.61	1.04
Base Farm Price + Premiums per Cwt.	\$15.08	\$15.59	\$16.34	\$17.43
Promotion, \$ per Cwt.	.13	.15	.20	.30
Hauling, \$ per Cwt.	.48	.60	.67	.96
Market fees & coop dues per Cwt.	.00	.00	.06	.13
Total Marketing Expenses per Cwt.	\$.72	\$.82	\$.91	\$1.22
Base + Premiums – Deductions per Cwt.	\$14.20	\$14.66	\$15.41	\$16.53
Futures contract, forward contracting, \$ per Cwt.	.00	.00	.00	.00
Total Marketing Income, \$ per Cwt.	\$.00	\$.00	\$.00	\$.00
Patronage Dividends, \$ per Cwt.	\$.00	\$.00	\$.01	\$.19
Net Price Received From All Sources, \$ per Cwt.	\$14.21	\$14.74	\$15.51	\$16.55
PPD - hauling, \$ per Cwt.	-0.09	0.07	0.15	0.32
PPD - hauling + mkt premiums, \$ per Cwt.	-0.04	0.23	0.39	0.71
Net Marketing Value (PPD + Total Premiums – Total Deductions), \$ per Cwt.	-0.11	0.22	0.48	0.96

³⁸Each calculation of an average is independent of all others. Therefore, math operations on the detail will not result in the totals.

³⁹Holstein and Jersey herds are included.

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

Worksheet for Setting Goals (Continued)

II. Goals

What	How	When	Who is Responsible
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
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Summarize Your Business Performance

The Farm Business Chart on page 40 can be used to help identify strengths and weaknesses of your farm business. Identify three major strengths and three areas of your farm business that need improvement.

Strengths: _____

Needs improvement: _____

GLOSSARY AND LOCATION OF COMMON TERMS

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

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

Accrual Expenses - (defined on page 18)

Accrual Receipts - (defined on page 19)

Annual Cash Flow Statement - (defined on page 27)

Appreciation - (defined on page 20)

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.

bST Usage - An estimate of the percentage of herd, on average, that was injected with bovine somatotropin during the year.

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 28)

Cash Paid - (defined on page 17)

Cash Receipts - (defined on page 19)

Change in Accounts Payable - (defined on page 18)

Change in Accounts Receivable - (defined on page 19)

Change in Inventory - (defined on page 19)

Cost of Term Debt - 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, operating debt or advanced government receipts. This information is found on pages 8 & 9 of the data entry form.

Culling Rate - (defined on page 33)

Current Portion - (defined on page 23)

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.

Debt Coverage Ratio – (defined on page 28)

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

Debt to Asset Ratios - (defined on page 25)

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 28.

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.

Financial Lease - A long-term non-cancelable 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 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.

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.

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 22)

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 25)

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

Net Farm Income - (defined on page 20)

Net Farm Income from Operations Ratio – (defined on page 23)

Net Milk Receipts – Accrual milk receipts less milk marking 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 34)

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

Operator Resources/cwt. - The total value of labor contributed to the farm from all owner/operators. This measure is calculated by multiplying the number of months of labor provided by all owner/operators by \$2,200 and dividing by the number of cwt. produced during the year.

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 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 34)

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 23)

Return on Total Capital - (defined on page 23)

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

Stocking Rate – (defined on page 32)

Total Costs of Producing Milk - (defined on page 34)

Total Labor Cost/cwt. - The total cost of all labor used on the farm on a per cwt. basis. The value of unpaid labor at \$2,200 per month plus the value of operator(s) labor at \$2,200 per month plus total hired labor expense divided by the number of cwt. produced.

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)
2006-06	Dairy Farm Business Summary, Western and Central Plateau Region, 2005	(\$12.00)	Knoblauch, W., Putnam, L., Karszes, J., Grace, J., Munsee, D., Schuelke, J. and J. Petzen
2006-05	Dairy Farm Business Summary, Western and Central Plain Region, 2005	(\$12.00)	Knoblauch, W., Putnam, L., Karszes, J., Hanchar, J., Moag, G. and J. Sauter
2006-04	Dairy Farm Business Summary, Northern Hudson Region, 2005	(\$12.00)	Conneman, G., Putnam, L., Wickswat, C., Buxton, S., Smith, R. and J. Karszes
2006-03	Dairy Farm Business Summary, New York Large Herd Farms, 300 Cows or Larger, 2005	(\$16.00)	Karszes, J., Knoblauch, W. and L. Putnam
2006-02	Moving Families Forward by New York FarmNet (video) 26:44	(\$9.99)	Staehr, A.
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