DAIRY FARM BUSINESS SUMMARY

SEPTEMBER 2010 *E.B. 2010-10*

INTENSIVE GRAZING FARMS NEW YORK 2009

George Conneman
Jason Karszes
James Grace
Peggy Murray
A. Edward Staehr
A. Fay Benson
Nancy Glazier
Virginia Carlberg
Molly Ames
Jessica Anderson
Linda Putnam

Charles H. Dyson School of Applied Economics and Management
College of Agriculture and Life Sciences
Cornell University, Ithaca, New York 14853-7801

It is the Policy of Cornell University actively to support equality of educational and employment opportunity. No person shall be denied admission to any educational program or activity or be denied employment on the basis of any legally prohibited discrimination involving, but not limited to, such factors as race, color, creed, religion, national or ethnic origin, sex, age or handicap. The University is committed to the maintenance of affirmative action programs which will assure the continuation of such equality of opportunity.

The Dairy Farm Business Summary and Analysis Project is funded in part by:

NY *farm viability* INSTITUTE

Additional funding is provided by:

THE BANK OF CASTILE
Locally focused. A world of possibilities.℠

NBT BANK

For additional copies, please contact:

Linda Putnam
Cornell University
Charles H. Dyson School of Applied Economics and Management
305 Warren Hall
Ithaca, NY 14853-7801

E-mail: ldp2@cornell.edu
Fax: 607-255-1589
Voice: 607-255-8429
Or visit:
http://www.aem.cornell.edu/outreach/order.php

2009 DAIRY FARM BUSINESS SUMMARY
Intensive Grazing Farms
Table of Contents

Page

INTRODUCTION 1
- Program Objectives 1
- Format Features 1

PROGRESS OF THE FARM BUSINESS 2
- Profitability Measures 2

MYTHS OF GRAZING 5

INTENSIVE GRAZING SURVEY SUMMARY 6
- Breeds 7
- Supplemental Feeding 7
- Grazing Season Ration Details 7
- Frequency of Rotation 8
- Water Source 8
- Milking System 8
- Commercial Fertilizer 8
- Intensive Grazing Satisfaction Comments 9
- Grazing Trends 9
- Percent Forage from Pasture 9
- Intensive Grazing Farms vs. Non-grazing Farms 11

CASE STUDIES 11
- SS Milkyway Farms 12
- Grassland Dairy 12

SUMMARY OF GRAZING FARMS BY HERD SIZE 14

SUMMARY AND ANALYSIS OF THE FARM BUSINESS 16
- Business Characteristics 16
- Income Statement 16
- Profitability Analysis 18
- Farm and Family Financial Status 22
- Cash Flow Statement 26
- Repayment Analysis 27
- Cropping Analysis 29
- Dairy Analysis 32
- Capital and Labor Efficiency Analysis 34

COMPARATIVE ANALYSIS OF THE FARM BUSINESS 36
- Progress of the Farm Business 36
- Grazing Farm Business Chart 39

INCOME AND EXPENSE PROFILES 40

SUPPLEMENTARY INFORMATION 42

IDENTIFY AND SET GOALS 44

GLOSSARY AND LOCATION OF COMMON TERMS 46

INDEX 49

ACKNOWLEDGEMENT

This report was written by the Intensive Grazing Committee consisting of George Conneman, Professor Emeritus, Farm Management; Jason Karszes, Senior Extension Associate, PRO-DAIRY; James Grace, Extension Educator, Steuben, Chemung and Schuyler Counties; Molly Ames, Area Specialist, South Central New York Dairy Team; Ed Staehr, Senior Extension Associate, Applied Economics and Management; Fay Benson, Small Farms Educator, South Central New York Dairy Team; Peggy Murray, Extension Educator, Lewis County; Nancy Glazier, Extension Support Specialist, Northwest New York Team; Virginia Carlberg, Extension Educator, Chautauqua County; Jessica Anderson, Cornell University Work-Study Student; and Linda Putnam, Extension Support Specialist, Charles H. Dyson School of Applied Economics and Management. The committee appreciates the assistance from all the Cornell Cooperative Extension Educators that collected the Dairy Farm Business Summary data, as well as the Extension Educators that collected the grazing practices survey data. The case study provided by Scott and Lin Sawyer and Peggy Murray is appreciated. Thanks also to Brent Tillotson and John Hanchar, Regional Specialist, Northwestern New York Regional Dairy, Livestock, and Field Crops Program, for providing the case study of the Grassland Dairy, Inc.

2009 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.

The farms included in the study are a subset of New York State farms participating in the Dairy Farm Business Summary and Analysis Program (DFBS). Thirty-nine 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 percent of the forage consumed during the growing season was from grazing. Operators of these 39 farms were asked to complete a grazing practices survey. Sixteen of the farms did complete it. T**he study centered on 27 New York farms which were not organic farms and were not first year grazers. The "Non-Grazers" are 82 farms with similar herd size to the grazing farms and are compared to the average of the 27 grazing 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 (DFBS) Project in 2008 and 2009. 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 11. The third section, Case Studies, describes two 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 2009 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 can be helpful in analyzing performance[1] 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 20 farms that were grazing in both 2008 and 2009 and participated in the Dairy Farm Business Summary (DFBS) Project for both years.

These 20 farms increased in herd size from 160 cows in 2008 to 165 cows in 2009. Along with the increase in cow numbers, the average number of heifers increased from 127 to 131 head. Although the average number of cows increased the total pounds of milk sold per farm slightly decreased as production per cow fell 554 pounds from 16,289 in 2008 to 15,735 in 2009.

Worker equivalents remained essentially unchanged but with the increase in cow numbers, cows per worker equivalent increased from 47 to 49. However, pounds of milk sold per worker equivalent increased only 3,526 pounds to 770,184 pounds, due to the decrease in production per cow. Labor and machinery costs per cow decreased 13 percent from $1,365 to $1,185.

In 2009, some areas of New York State had above average rainfall and other areas had normal rainfall. Overall pasture conditions were good throughout the summer. For these grazing farms, corn yields decreased from 17.7 to 15.2 tons per acre, while hay yields decreased from 2.5 to 2.2 tons per acre.

The amount of investment per cow decreased from 2008's value of $8,309 to $8,153 in 2009. This was due to a decrease in value of dairy cattle. Debt per cow in 2009 was $2,252 and in 2008 it was $2,267. Farm net worth decreased $50,450 to $969,172.

The major factor impacting farm profitability in 2009 was the decrease in the price of milk. It fell from $19.89 per hundredweight in 2008 to $14.12 in 2009, a 29 percent decrease. Grazers responded to this decrease by cutting expenses, where possible, in areas of their farm operation. Two major areas cut were grain and fertilizer. Grain expense decreased 16 percent from $5.63 to $4.73 per hundredweight. Fertilizer expense, helped by lower prices, decreased 27 percent, from $1.17 to $0.86 per hundredweight. Total operating expenses decreased $2.00 or 11 percent, from $17.89 to $15.89 per hundredweight. On a per cow basis, milk income decreased more than $1,000 per cow while expenses decreased only $413 per cow. This resulted in a decrease in profitability from a net farm income per cow in 2008 of $630 to a negative $25 in 2009.

The above factors, when combined, resulted in lower profitability for 2009.

Profitability Measures

- Net farm income without appreciation decreased from $100,492 to $-4,061.
- Net farm income per cow without appreciation decreased from $630 to $-25.
- Net farm income with appreciation decreased from $101,872 to $1,432.
- Labor and management income per operator decreased from $27,750 to $-39,895.
- Rate of return on equity capital without appreciation decreased from 3.2 percent to -7.2 percent.
- Rate of return on all capital with appreciation decreased from 3.5 percent to -4.2 percent.

For both grazers and conventional farms, the year 2009 was not a good year for dairy farmers. The 72 conventional farms with similar herd size as grazing farms, that participated in the DFBS the past two years, had a net farm income without appreciation of negative $123 per cow, compared to the grazer's net farm income without appreciation of negative $25 per cow.

---

[1] **The importance of trend analysis is to identify what areas changed, ask why they changed, and look at what you can do differently in the future to influence that change. 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 20 Grazing Dairy Farms, 2008 & 2009

Selected Factors	Average of 20 Farms 2008	Average of 20 Farms 2009	Percent Change
Size of Business			
Average number of cows	160	165	3.1
Average number of heifers	127	131	3.2
Milk sold, lbs.	2,598,970	2,595,519	-0.1
Worker equivalent	3.39	3.37	-0.6
Total nontillable and tillable pasture & hay acres	361	351	-2.8
Total nontillable pasture & tillable acres	439	425	-3.2
Rates of Production			
Milk sold per cow, lbs.	16,289	15,735	-3.4
Hay DM per acre, tons	2.5	2.2	-12.0
Corn silage per acre, tons	17.7	15.2	-14.1
Stocking rate	2.73	2.55	-6.6
Labor Efficiency & Costs			
Cows per worker	47	49	4.3
Milk sold per worker, lbs.	766,658	770,184	0.5
Hired labor cost per cwt.	$1.75	$1.74	-0.6
Hired labor cost per worker	$30,737	$29,936	-2.6
Hired labor cost as % of milk sales	8.8%	12.3%	40.0
Cost Control			
Grain & concentrate purchased as % of milk sales	28%	34%	21.4
Grain & concentrate per cwt. milk	$5.63	$4.73	-16.0
Dairy feed & crop expense per cwt. milk	$8.13	$6.70	-17.6
Labor & machinery costs per cow	$1,365	$1,185	-13.2
Total farm operating costs per cwt. sold	$17.89	$15.89	-11.2
Interest costs per cwt. milk	$0.58	$0.57	-1.7
Milk marketing costs per cwt. milk sold	$1.00	$0.96	-4.0
Fertilizer and lime expense per cwt. milk sold	$1.17	$0.86	-26.5
Operating cost of producing cwt. of milk	$14.28	$12.56	-12.0
Total costs of producing cwt. of milk	$20.58	$18.79	-8.7
Capital Efficiency (average for the year)			
Farm capital per cow	$8,309	$8,153	-1.9
Machinery & equipment per cow	$1,475	$1,485	0.7
Asset turnover ratio	0.46	0.34	-26.1
Income Generation			
Gross milk sales per cow	$3,240	$2,221	-31.5
Gross milk sales per cwt.	$19.89	$14.12	-29.0
Net milk sales per cwt.	$18.89	$13.16	-30.3
Dairy cattle sales per cow	$284	$239	-15.9
Dairy calf sales per cow	$23	$21	-8.7
Government receipts per cwt.	$0.23	$1.28	456.5
Profitability			
Net farm income without appreciation	$100,492	$-4,061	-104.0
Net farm income per cow without appreciation	$630	$-25	-104.0
Net farm income with appreciation	$101,872	$1,432	-98.6
Labor & mgt. income per operator/manager	$27,750	$-39,895	-243.8
Labor & mgt. income per oper./manager per cow	$173	$-242	-240.0
Rate of return on equity capital without apprec.	3.2%	-7.2%	-325.0
Rate of return on all capital without appreciation	3.5%	-4.2%	-220.0
Financial Summary			
Farm net worth, end year	$1,019,622	$969,172	-5.0
Debt to asset ratio	0.25	0.27	8.0
Farm debt per cow	$2,267	$2,252	-0.7

TEN YEAR COMPARISON: SELECTED BUSINESS FACTORS
New York Intensive Grazing Dairy Farms, 2000 to 2009

Item	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Number of farms	65	54	30	27	30	42	42	36	31	27
Cropping Program										
Total tillable acres	271	288	243	270	267	264	254	273	317	333
Tillable acres rented	133	142	125	126	96	110	145	132	159	146
Hay crop acres	139	152	119	149	133	143	145	162	176	186
Corn silage acres	44	37	22	28	38	34	41	39	47	51
Hay crop, tons DM/acre	2.7	2.2	2.2	3.7	2.9	1.9	2.2	2.0	2.3	2.2
Corn silage, tons/acre	12.0	15.5	12.4	15.3	15.3	14.9	15.5	17.6	16.9	15.6
Fertilizer & lime exp./tillable acre	$20	$22	$30	$21	$31	$31	$29	$45	$52	$41
Machinery cost/cow	$501	$528	$439	$447	$598	$586	$590	$688	$739	$567
Dairy Analysis										
Number of cows	93	94	94	100	104	95	101	110	127	144
Number of heifers	67	70	68	72	74	76	83	87	97	118
Milk sold, cwt.	15,860	15,396	15,687	15,637	17,744	15,868	17,168	18,243	21,111	22,862
Milk sold/cow, lbs.	17,107	16,295	16,618	15,684	17,144	16,783	17,054	16,627	16,593	15,884
Purchased dairy feed/cwt. milk	$3.88	$4.19	$4.21	$4.45	$4.76	$4.48	$4.41	$5.46	$6.77	$5.52
Purchased grain & concentrate as % of milk receipts	27%	23%	28%	29%	25%	26%	30%	23%	31%	35%
Purchased feed & crop exp/cwt.milk	$4.56	$4.94	$4.99	$5.06	$5.55	$5.34	$5.30	$6.59	$8.14	$6.66
Operating cost producing milk/cwt.	$10.17	$11.71	$9.76	$9.53	$11.83	$11.35	$10.58	$13.56	$14.84	$12.39
Veterinary & medicine exp./cow	$66	$67	$57	$59	$74	$67	$83	$85	$88	$64
Capital Efficiency										
Farm capital/cow	$6,445	$6,841	$5,870	$6,286	$7,300	$7,526	$7,667	$8,158	$8,244	$8,314
Real estate/cow	$2,791	$2,951	$2,389	$2,738	$3,475	$3,369	$3,249	$3,445	$3,382	$3,723
Machinery investment/cow	$1,316	$1,319	$1,109	$1,191	$1,287	$1,337	$1,289	$1,474	$1,504	$1,418
Asset turnover ratio	0.46	0.51	0.46	0.46	0.50	0.48	0.42	0.54	0.48	0.34
Labor Efficiency										
Worker equivalent	2.76	2.78	2.59	2.71	2.90	2.70	2.80	2.70	2.91	3.22
Operator/manager equivalent	1.35	1.40	1.24	1.36	1.50	1.32	1.39	1.28	1.35	1.49
Milk sold/worker, lbs.	574,630	553,819	605,677	577,020	611,862	587,165	614,066	675,657	726,309	709,259
Cows/worker	34	34	36	37	36	35	36	41	44	45
Labor cost/cow	$644	$717	$683	$681	$732	$746	$744	$705	$711	$674
Hired labor exp./hired worker equiv.	$20,024	$24,430	$24,009	$22,912	$25,966	$25,645	$26,504	$28,417	$32,729	$30,266
Profitability & Financial Analysis										
Labor & mgmt. income/operator	$1,693	$15,205	$2,482	$9,638	$22,397	$17,801	$1,606	$54,684	$19,786	$-34,934
Labor &mgmt income/operator/cow	$18	$162	$26	$96	$215	$187	$16	$498	$156	$-243
Net farm income/cow w/o apprec.	$310	$555	$322	$449	$652	$572	$383	$1,019	$568	$-6
Farm net worth, end year	$410,672	$477,037	$369,123	$454,465	$578,704	$535,182	$584,266	$706,999	$765,083	$830,593
Percent equity	67%	71%	66%	69%	73%	72%	74%	73%	71%	70%

MYTHS OF GRAZING

Since 1996 Cornell's Agricultural Economics and Management has collected Dairy Farm Business Summary information from grazing dairies. Professor George Conneman has participated with the project since that time. Over the years he has suggested to dairy farmers the possibility of converting their farm to a grazing farm. The responses he has received were sometimes legitimate and some were, as he called them, "The Myths of Grazing". Below are the list of myths and their appropriate responses.

MYTHS OF GRAZING	TRUTHS OF GRAZING
A high level of milk production per cow is not important for success of a Management Intensive Grazing (MIG) dairy.	True and False--As with confinement herds, production per cow is important, but more important for grazing herd's success is lowering the cost of production per hundredweight.
Grazing is the last thing a dairy farmer does before calling the auctioneer.	It is true that many grazing dairy farmers arrived at grazing through economic hard times, but this is due more to the inability of farmers to change without feeling economic pain. Many have found success once they decided to change.
A lower set of skills is required to make intensive grazing work.	Grazing dairies have all the same management issues that confinement herds have with the addition of keeping adequate amounts of pastures through seasons that vary. Management areas such as crop production, herd health, and labor are less stressful due to the adoption of grazing.
MIG is impractical for herds of greater than 100 cows.	There are many 300+ cow grazing herds, with the maximum in New York around 600 cows. The limiting factor is usually the amount of pasture needed close to the milking area since the cows need to walk for milking twice a day.
Machinery and feed costs are significantly lower on MIG farms.	The grazing season in New York is only 4-5 months long; this requires the farm to produce the same as a confinement herd the rest of the year. The machinery is doing less acreage per year which will reduce repairs and replacement costs. Substituting pasture for haylage in the cow's diet is beneficial due to the nutrient density of pasture.
Putting the cows out to pasture means that the farmer will spend more time chasing escaped cows and fixing fence.	Over the past 20 years new fencing technologies (mostly from New Zealand) have removed this fear. Many Soil and Water Districts have offered grants to pay for installing these systems.
It only takes grazing skills to make MIG work on dairies.	As stated earlier, a grazing dairy farmer has the same areas of management to deal with. Their grazing ability is important to make the system work but bottom line is they still operate as a confinement dairy 6-7 months a year.

INTENSIVE GRAZING SURVEY SUMMARY

From the survey data of the 16 selected grazing farms that completed the grazing practices survey, 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 one of the ways to compare diverse businesses that 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 groups comprised of the top 50 percent and the lower 50 percent scaled from the highest to lowest labor and management income per operator per cow.

SELECTED PRODUCTION AND PROFITABILITY MEASURES

Intensive Grazing Dairy Farms, 2009

	Average (16 farms)	Average of the Top 50% (8 farms)	Average of the Lower 50% (8 farms)
Labor and management income per operator per cow	$-308	$-93	$-604
Average number of cows	153	177	130
Milk sold per cow, pounds	14,531	13,739	15,613
Operating cost of producing milk per cwt.	$12.41	$11.85	$13.08
Total cost of producing milk per cwt.	$19.49	$17.58	$21.78

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, 2009

	Number of Farms Responding	Average of All Farms Answering Question	Average of the Top 50%	Average of the Lower 50%
Experience				
Average years of farming experience	16	31	31	31
Average years of grazing experience	14	14	13	15
Farm Characteristics				
Percent of farms with seasonal or semi-seasonal calving	16	44%	63%	25%
Percent of farms with a parlor milking system	16	31%	25%	38%
Pasture in the Ration				
Average percent forage from pasture	16	52%	63%	58%
Average length (days) of grazing season	16	136	134	139
Average pounds of grain fed while grazing	10	11.7	12.2	11.3
Average pounds of grain fed in winter	10	16.4	15.8	17.0
Average pounds of forage dry matter fed while grazing	11	10.9	11.9	10.0
Average pounds of forage dry matter from grazing	11	14.6	14.3	14.8
Average pounds of forage dry matter fed in winter	11	24.9	24.4	25.4
Pasture Management				
Percent rotated after each milking	16	50%	12%	88%
Percent rotated daily	16	25%	38%	12%
Percent rotated every other day	16	13%	25%	0%
Percent other rotation	16	12%	25%	0%
Percent applied commercial fertilizer to pasture	15	60%	75%	43%
Percent applied manure to pasture	15	60%	63%	57%
Percent applied lime to pasture	14	21%	12%	33%
Percent that clipped pasture	16	88%	75%	100%
Percent with a weed problem	11	55%	20%	83%
Percent with water in every paddock	16	75%	75%	75%
Percent with pasture re-seeded in past 10 years	14	43%	34%	54%
Percent that mechanically harvested pastures	14	37%	31%	42%
Most common pasture species				
First		Orchardgrass	Orchardgrass	Orchardgrass
Second		Ladino Clover	Native white Clover	Ladino Clover
Third		Native White Clover	Birdsfoot Trefoil	Native White Clover or Bluegrass

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

Breeds

Holstein was the most common breed with eight of the farms having 95 percent or greater Holstein animals. The second most common were Jersey which were on five farms. Farms with Holstein animals tended to have higher milk production but this year had lower profitability both per cow and per hundredweight.

FARMS SCALED BY BREED OF HERD
Intensive Grazing Farms, 2009

	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	8	20,437	$-539	$-2.64	23.0%
Farms that are less than 95% Holstein	8	12,529	$-198	$-1.58	18.0%

Supplemental Feeding

Eleven farms gave detailed ration data and the table below compares the eight farms that fed corn silage to the three that did not. Farms that incorporated corn silage into their grazing forages historically have higher milk production; however, not so this year. These farms did not always 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, 2009

	Top 50% (5 farms)		Lower 50% (6 farms)	
	Corn Silage (4)	No Corn Silage (1)	Corn Silage (4)	No Corn Silage (2)
Labor & management income per oper. per cow	$-172	Too	$-535	$-891
Milk sold per cow, pounds	19,119	Few	18,257	20,513
Grain fed in summer, pounds dry matter	12.2	To	13.5	14.9
Corn silage fed in summer, pounds dry matter	8.0	Report	7.4	-
Other forage fed in summer, pounds dry matter	4.5		3.0	0.0
Percent forage from pasture	58%		60%	51%

Grazing Season Ration Details

The five farms in the top 50 percent of profitability fed an average of 12.2 pounds dry matter of grain during the grazing season. Four farms fed corn silage at an average of 8.0 pounds dry matter.

The six farms in the lower 50 percent of profitability fed an average of 11.3 pounds dry matter of grain during the grazing season. Four of the farms fed corn silage at an average of 7.4 pounds dry matter.

Frequency of Rotation

Eight of the farms rotated their pastures for milk cows after each milking, four of the farms rotated pasture every day, two farms rotated pasture every other day, and two farms rotated pasture every third day. The table below compares the rotation frequency to milk production and labor and management income per operator per cow.

ROTATION FREQUENCY
Intensive Grazing Farms, 2009

	Top 50% (8 farms)		Lower 50% (8 farms)	
	Rotate At Least Once Per Day (4)	Other Rotation Schedule (4)	Rotate At Least Once Per Day (8)	Other Rotation Schedule (0)
Milk sold per cow, pounds	17,115	17,648	18,166	
Labor and management income per operator per cow	$42	$-209	$-839	

Water Source

Six farms provided the majority of water from a well while the remaining eight provided water from a natural source (pond-4 and spring-4).

WATER SOURCE
Intensive Grazing Farms, 2009

	Top 50% (8 farms)		Lower 50% (6 farms)	
	Well (4)	Other (4)	Well (2)	Other (4)
Milk sold per cow, pounds	17,215	18,579	14,163	18,485
Labor and management income per operator per cow	$-18	$-149	$-760	$-1,024

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 5 pit parlor systems (no flat parlors) and the remaining 11 farms used pipeline systems.

MILKING SYSTEM
Intensive Grazing Farms, 2009

	Top 50% (8 farms)		Lower 50% (8 farms)	
	Pipeline (6)	Parlor (2)	Pipeline (5)	Parlor (3)
Milk sold per cow, pounds	17,987	15,765	18,992	16,788
Labor and management income per operator per cow	$-80	$-94	$-1,068	$-459
Average number of cows	64	516	46	261

Commercial Fertilizer

Nine farms applied fertilizer to the paddocks during the growing season. The majority of farms applied urea and others applied a blended fertilizer. 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, 2009

	Top 50% (8 farms)		Lower 50% (8 farms)	
	Applied Fertilizer (6)	Did Not Apply Fertilizer (2)	Applied Fertilizer (3)	Did Not Apply Fertilizer (5)
Milk sold per cow, pounds	17,221	18,063	16,387	19,233
Labor and management income per operator per cow	$-84	$-82	$-919	$-791
Stocking rate, cows per acre	1.1	1.1	1.3	1.1
Percent forage from pasture	49%	61%	78%	54%
Most common product applied	Urea		Urea	

Intensive Grazing Satisfaction Comments

On a scale of 1 to 5, with 5 being the highest, 15 farms responded with the average rating of grazing satisfaction as 4.5 with 8 farms responding 5 (very satisfied) and 7 responding 4 (satisfied). When asked whether their lifestyle has improved with the adoption of rotational grazing, 12 farms responded with all saying "yes".

Grazing Trends

The table below compares key figures from 1996 (the first year of the intensive grazing summary), 2009, and a 14-year average (not the same farms all 14 years). Cow numbers have increased but milk sold per cow has decreased slightly in recent years due to participation of farms with mixed breeds. [3] Operating cost of producing milk per hundredweight in 2009 averaged $1.02 above the 14-year average as well as $1.10 above 1996. Net farm income per cow without appreciation was $486 lower in 2009 than the 14-year average.

2009 GRAZING INFORMATION COMPARED TO 1996 AND 1996 – 2009 AVERAGE
Intensive Grazing Farms, 1996 – 2009

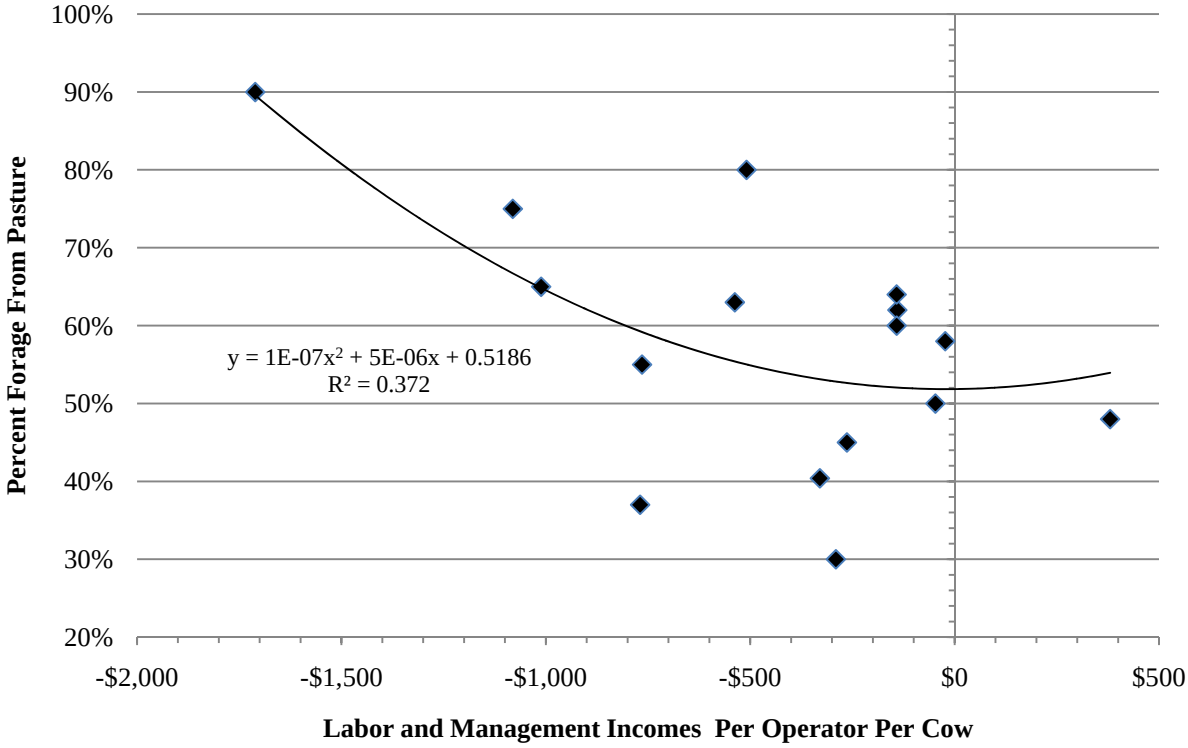
	59 Grazing Dairy Farms, 1996 Average	27 Grazing Dairy Farms, 2009 Average	Grazing Dairy Farms, 1996 – 2009 Average
Number of cows	78	144	99
Milk sold per cow, pounds[2]	17,270	15,884	16,881
Operating cost of producing milk per cwt.	$11.29	$12.39	$11.37
Net farm income per cow without apprec.	$409	$-6	$480
Grain and concentrate as % of milk receipts	30%	35%	27%
Grain and concentrate expense per cwt. milk	$4.41	$4.72	$4.16
Price of milk per cwt.	$14.78	$14.04	$15.60

[2] In 1996, similar size non-grazers sold 17,547 pounds of milk per cow and in 2009 similar size non-grazers sold 21,946 pounds per cow.

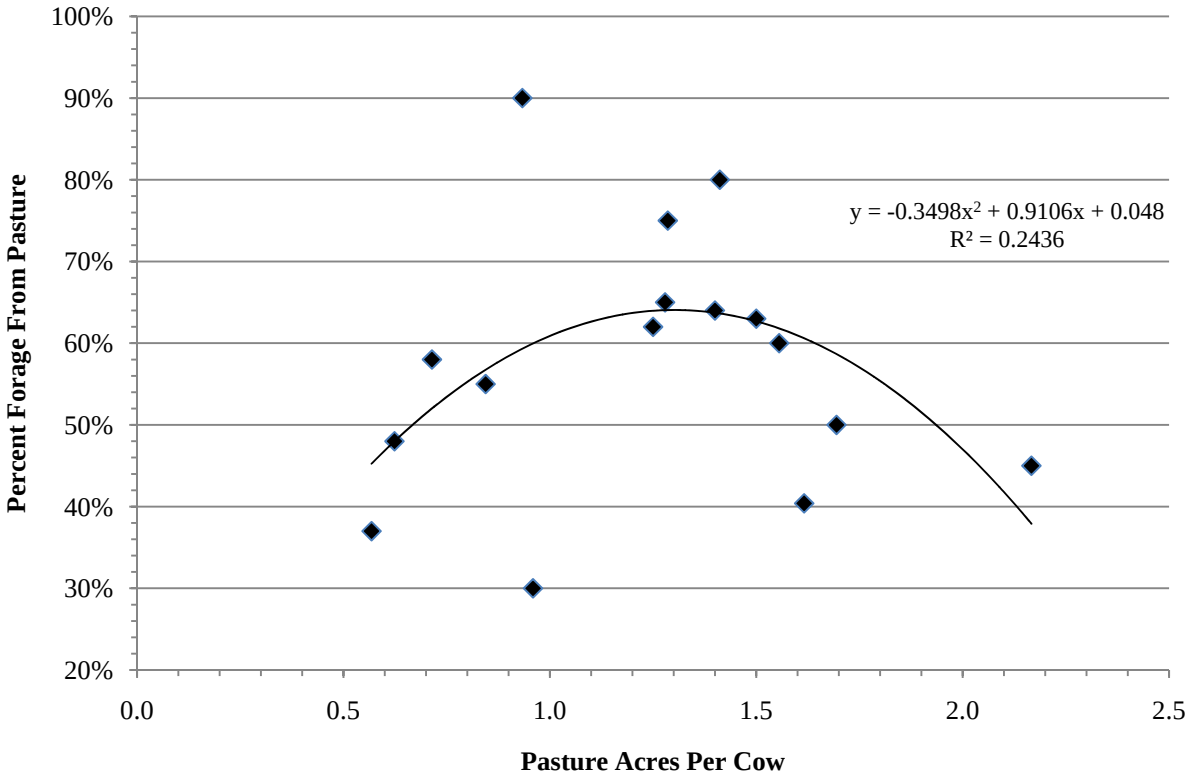
Percent Forage from Pasture

The following graphs compare the percent forage from pasture to labor and management incomes per operator per cow and pasture acres per cow.

PERCENT FORAGE FROM PASTURE VERSUS LABOR AND MANAGEMENT INCOMES PER OPERATOR PER COW
Intensive Grazing Farms, 2009



PASTURE ACRES PER COW VERSUS PERCENT FORAGE FROM PASTURE
Intensive Grazing Farms, 2009



INTENSIVE GRAZING FARMS VS. NON-GRAZING FARMS
New York State Dairy Farms, 2009

Item	All Intensive Grazing Farms[3]	Non-Grazing Farms[4]
Number of farms	27	82
Business Size & Production		
Number of cows	144	146
Number of heifers	118	123
Milk sold, pounds	2,286,177	3,204,376
Milk sold per cow, pounds	15,884	21,946
Milk plant test, % butterfat[5]	3.9%	3.7%
Cull rate	23%	33%
Tillable acres, total	333	391
Hay crop, tons DM per acre	2.2	2.7
Corn silage, tons per acre	15.6	17.1
Forage dry matter per cow, tons[6]	4.8	8.6
Labor & Capital Efficiency		
Worker equivalent	3.22	4.23
Milk sold per worker, pounds	709,259	758,283
Cows per worker	45	35
Farm capital per worker	$371,636	$340,127
Farm capital per cow	$8,314	$9,854
Farm capital per cwt. milk	$52	$45
Machinery and equipment per cow	$1,418	$1,860
Milk Production Costs & Returns		
Selected costs per cwt.:		
Hired labor	$1.66	$2.06
Grain & concentrate	$4.72	$5.24
Purchased roughage	$0.80	$0.36
Replacements purchased	$0.00	$0.09
Vet & medicine	$0.41	$0.58
Milk marketing	$0.99	$0.93
Other dairy expenses	$1.16	$1.52
Operating cost of producing milk per cwt.	$12.39	$13.07
Total labor cost per cwt.	$4.24	$3.97
Owner and operator resources per cwt.	$4.33	$3.26
Total cost of producing milk per cwt.	$18.79	$17.85
Average farm price per cwt.	$14.04	$13.71
Related Cost Factors		
Hired labor/cow	$264	$453
Total labor/cow	$674	$872
Purchased dairy feed/cow	$876	$1,229
Purchased grain & concentrate as % of milk receipts	35%	39%
Veterinary & medicine/cow	$64	$127
Machinery costs/cow	$567	$698
Feed & crop expenses/cwt.	$6.66	$6.56
Profitability Analysis		
Net farm income (with appreciation)	$3,419	$-26,272
Net farm income (without appreciation)	$-857	$-20,355
Net farm income per cow (without appreciation)	$-6	$-139
Net farm income per cwt. (without appreciation)	$-0.04	$-0.64
Labor & management income per operator	$-34,934	$-49,343
Labor & management income per operator per cow	$-243	$-338
Rates of return on:		
Equity capital with appreciation	-7.3%	-9.3%
All capital with appreciation	-4.0%	-5.0%

[3]Farms 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.

[4]Farms with similar herd size as the 27 rotational grazing farms.

[5]Average of farms reporting this data.

[6]Average of farms that grow forages.

CASE STUDIES

SS Milkyway Farms

SS Milkyway is a 190-cow herd located in the southern end of Lewis County near the Oneida County Border. It is owned by Scott and Lin Sawyer along with their daughter and son-in-law, Charity and Mark Savage. They have a 200-stall 6-row barn built in 1996 with a double-8 parlor built two years later. They use water mattresses and alley scrapers. They grow 240 acres of corn and 300 of hay with 80 acres of hay ground used for grazing. Twenty-five acres have first cutting taken off and then used for grazing. Besides the family, they have two full-time employees and one part-time employee in the summer.

Scott and Lin Sawyer have thought about grazing their 190-cow dairy herd for the past few years, but a trip Scott made to Australia with his son in 2008 really set things into motion. They started talking to their neighbors who have been successfully grazing for years. They watched their operation closely for the past couple of years.

In 2009, Scott and Lin brought their daughter and son-in-law into the operation and it seemed like a perfect time to make the transition. With Mark taking over the management of the herd, it gave Scott more time to implement and manage the grazing. Scott was looking for a new challenge and changing to grazing provided that.

The location and layout of their farm was not conducive to grazing – the cows and water lines go in eight different directions. Three quarters of a mile is the most the cows have to walk. Fellow grazers have been very helpful with the layout of the paddocks and laneways. Scott and Mark also attended tours and pasture walks – this proved to be very beneficial in the decision and implementing process. Buying the land across the road was also instrumental in the decision to graze.

They started with baby steps – in 2008, they started grazing heifers. Scott and Mark used 50 acres of pasture plus 15 acres of cropland. They set up five paddocks and moved heifers from paddock to paddock. In the spring of 2009, they started grazing 50 percent of his herd once a day. By the end of the season they were grazing all 190 head once a day. The year 2009 was a good year to graze in the North Country. Cool summers and adequate rainfall kept the paddocks green all season. Grazing in Southern Lewis County also has its challenges. On average it is 10 degrees colder than most parts of the state and snowfall comes early and stays late.

The cows are averaging 55 pounds of milk per day. Fifty percent of the dry matter intake comes from grazing. As a result the protein and energy at the feed bunk has been drastically reduced. Scott and Mark still feed a TMR to the cows once a day.

They have enjoyed the challenge that the grazing has presented. According to Scott, it's not less work, it's just different. Their next challenge will be field fertility and changing the seedings on the paddocks.

Scott and Mark are glad they made the switch to grazing. The cows look good, costs are lower, and the wear and tear on the equipment, waterbeds and alley scrappers have decreased. But his one suggestion is to always look outside the box.

Grazing At Grassland Dairy

The Farm Business

Material from this section draws from a June 2009, American Agriculturist article about Grassland Dairy by Tom Rivers. Tom titled the article "Milk Plunge Escapee." Some material is updated to 2010.

The Tillotsons (Brent, Polly, and their twin sons) own and operate a certified organic dairy farm in Pavilion, New York, Genesee County. Two thousand nine was the first full year of production. Today, between 100 and 110 Jersey cows are milked in a conventional swing parlor, and the farm has about 90 replacement animals. During the grazing season, dry cows and bred heifers obtain 100 percent of their forage needs from pasture, while milking cows obtain forage needs from pasture and a mixed ration. Milking cows are fed grain, while dry cows receive minerals.

Two hundred sixty acres of rented tillable land meet the forage needs of the herd. No corn silage is grown. All other required feeds are purchased -- corn grain for the milking herd, calf grains, and a mineral batch.

Brent notes that excellent forages, in the form of grown grasses consumed as pasture or as stored baleage, are key to achieving desired results. Rye grass is the primary forage crop, while clovers and orchard grass share the balance. "Clipping pastures 2 to 3 times a year to manage weed pressures," and "Not grazing pastures too tall, because they tend to get knocked down" are mentioned as important practices in Grassland Dairy's overall approach to producing quality forages.

Cows currently produce about 45 to 50 pounds of milk per day. Milk receipts are enhanced beyond a base organic price when butterfat, protein, and quality factors exceed certain levels. The herd currently averages 4.9 percent butterfat, 3.75 percent protein, and somatic cell counts of 120,000.

The decision to produce certified organic milk was driven by Brent's desire for

- a farm that met the family's financial goals, and
- a farm that did not require "too many employees, and too much capital investment."

Milk price volatility in the conventional milk market and the desire to avoid the volatility also affected the decision. Regarding Brent's decision to produce certified organic milk, the article states "… he's relieved – and thankful – he decided to go organic."

Current Practices Result from Challenges Faced

Weather Uncertainties

Brent cites adjusting to weather uncertainties, for example, the dry summer conditions of 2009 and the negative effects on grass growth, as a challenge. In 2009, the first full year of organic production, Brent found himself having to rethink the amount of pasture needed. The decision was to fence off all but 60 of the 260 acres, including extending waterers, to accomplish production goals. Where cows were expected to travel a half mile or less to pastures, the expanded pasture area meant that cows now travelled up to three quarters of a mile to a mile to access pastures.

Currently, 200 acres are fenced. Twenty 350 feet by 400 feet paddocks are for rotational grazing of dairy cows, while about 40 additional acres are for heifers. The balance is fenced, but not set up for paddocks. The current system provides needed flexibility during periods of poor pastures so that adequate forages are available during the season to meet production goals.
Brent emphasizes the importance of providing plenty of water. Water is available at every opening, about every 300 feet. "Animals aren't crowding around waterers when they arrive at a paddock."

Fly Pressures

Fly pressures while cows are on pasture, especially dry cows, and the potential negative consequences for herd health present challenges within the certified organic milk production framework. Regarding fly management, Brent emphasizes the role of allowable vaccinations – "Vaccination protocols – part of a proactive, preventive approach – are high on our list of practices."

Record Keeping

Record keeping associated with organic certification, including detailed records for animal, paddock movements by day, present challenges. Polly, the farm business' Financial Manager, and Brent do their best to understand the requirements. They work hard to keep records up to date, and try to stay informed about changes, for example, USDA's new organic pasture rule that was issued in early 2010. Their efforts are paying off -- Polly mentions that based upon certifiers' comments, they are doing a good job.

The Future

In the near future, the Tillotsons look to achieve and maintain a milking herd of about 120 cows maximum. A new heifer, dry cow barn with capacity for 100 animals is also a key piece for keeping the farm viable in terms of obtaining desired results in the future.

Important financial goals include reducing debt.

Brent will always be seeking opportunities to maintain and, or improve pastures via laneway and watering system maintenance and improvements, and via new seedings – all ryegrass is the goal.

A Final Thought

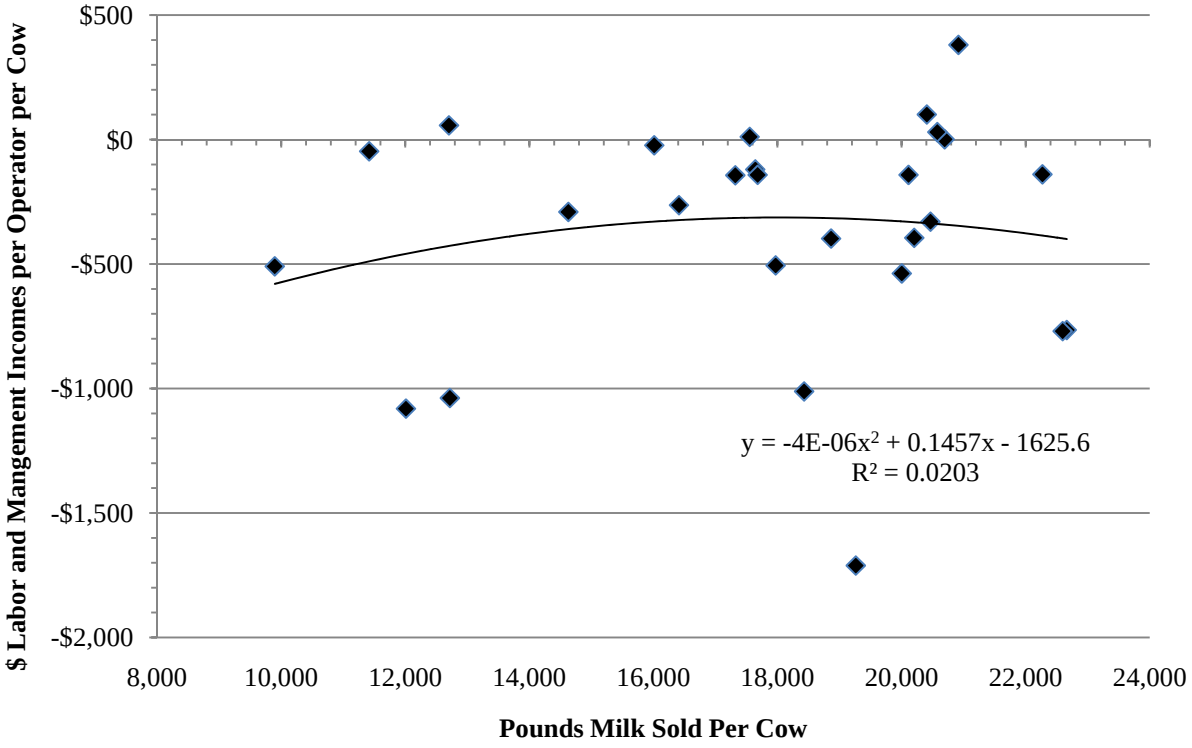
The Tillotson's herd of Jersey cows did not have to make the often difficult transition from conventional confinement housing to a pasture based system. Heifers were started on pasture well prior to the 2008 start date for the dairy, and all animals now entering the milking herd have been on pasture. However, Brent does recognize that in other situations animals need to be taken away from the bunk, learning to eat from pasture. Here, Brent shared the view of intensive grazing expert Don Wild, "Go out to lunch for a few days and let them bellow."

SUMMARY OF GRAZING FARMS BY HERD SIZE

There were 12 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 per cow by pounds of milk sold per cow. The table on the following page compares grazing farms by herd size group.

LABOR AND MANAGMENT INCOMES PER OPERATOR PER COW AND MILK PER COW

27 Intensive Grazing Farms, 2009



INTENSIVE GRAZING FARMS BY HERD SIZE GROUP

27 Intensive Grazing Dairy Farms, 2009

Item	53 Cows Or Less	54 to 124 Cows	125 Cows Or More
Number of farms	9	9	9
Business Size & Production			
Number of cows	47	84	301
Number of heifers	41	75	239
Milk sold, lbs.	889,903	1,435,902	4,532,726
Milk sold/cow, lbs.	18,890	17,139	15,064
Milk plant test, % butterfat (ave. of farms reporting)	3.7%	3.9	3.9%
Cull rate	31%	26%	21%
Tillable acres, total	130	232	638
Hay crop, tons DM/acre	2.2	2.0	2.2
Corn silage, tons/acre	15.7	16.4	15.3
Forage tons DM/cow (ave. of farms that grow forage)	6.3	6.7	4.0
Labor & Capital Efficiency			
Worker equivalent	1.96	2.57	5.14
Milk sold/worker, lbs.	453,454	559,079	882,139
Cows/worker	24	33	59
Farm capital/worker	$265,744	$299,781	$447,219
Farm capital/cow	$11,056	$9,196	$7,640
Farm capital/cwt. milk	$59	$54	$51
Milk Production Costs & Returns			
Selected costs/cwt.:			
Hired labor	$0.48	$1.03	$2.09
Grain & concentrate	4.90	4.60	4.72
Purchased roughage	0.18	1.42	0.73
Replacements purchased	0.00	0.01	0.00
Veterinary & medicine	0.45	0.32	0.42
Milk marketing	1.31	1.16	0.88
Other dairy expenses	1.44	1.31	1.08
Operating cost of producing milk/cwt.	11.41	11.71	12.79
Owner/operator resources/cwt.	6.80	4.54	3.78
Total labor cost/cwt.	6.25	5.45	3.47
Total cost of producing milk/cwt.	20.65	18.74	18.45
Average farm price/cwt.	13.35	13.92	14.22
Related Cost Factors			
Hired labor/cow	$90	$176	$315
Total labor/cow	1,180	934	522
Purchased dairy feed/cow	958	1,032	820
Purchased grain & concentrate as % of milk receipts	37%	33%	34%
Veterinary & medicine/cow	$85	$55	$64
Machinery costs/cow	$731	$604	$531
Feed & crop expense/cwt.	$5.96	$6.70	$6.79
Profitability Analysis			
Net farm income (without appreciation)	$5,521	$10,000	$-18,092
Net farm income/cow (without appreciation)	$117	$119	$-60
Net farm income/cwt. (without appreciation)	$0.62	$0.70	$-0.40
Labor & management income/operator	$-21,863	$-20,240	$-53,973
Labor & management income/operator/cow	$-465	$-242	$-179
Rates of return on:			
Equity capital with appreciation	-9.0%	-10.3%	-6.0%
All capital with appreciation	-7.5%	-4.5%	-3.0%

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
27 Intensive Grazing Dairy Farms, 2009

Type of Farm	Number
Dairy	27
Part-time dairy	0
Dairy cash-crop	0

Type of Ownership	Number
Owner	26
Renter	1

Type of Business	Number
Sole Proprietorship	16
Partnership	5
Limited Liability Corporation	4
Subchapter S Corporation	2
Subchapter C Corporation	0

Type of Barn	Number
Stanchion or Tie-Stall	12
Freestall	10
Combination	5

Milking Frequency	Number
2 times per day	26
3 times per day	0
Other	1

Milking System	Number
Bucket & carry	0
Dumping station	0
Pipeline	13
Herringbone-conventional exit	5
Herringbone-rapid exit	2
Parallel	3
Parabone	2
Rotary	0
Other	2

Production Records	Number
Testing Service	19
On-Farm System	4
Other	0
None	4

Business Record System	Number
Account Book	7
Accounting Service	2
On-farm computer software	18
Other	0

Breed	Percent
Holstein	77
Jersey	5
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 2009.

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

27 Intensive Grazing Dairy Farms, 2009

Expense Item	Cash Paid	-	Change in Inventory or Prepaid Expense	+	Change in Accounts Payable	=	Accrual Expenses
Hired Labor	$ 37,741		$ -212	<<	$ 6		$ 37,959
Feed							
Dairy grain & concentrate	96,879		-12,123		-1,191		107,812
Dairy roughage	18,549		-29		-250		18,329
Nondairy	164		4		0		160
Professional nutritional services	0		0	<<	0		0
Machinery							
Machinery hire, rent & lease	19,211		0	<<	-1,096		18,115
Machinery repairs & farm vehicle exp.	17,790		-26		453		18,269
Fuel, oil & grease	12,786		-169		52		13,007
Livestock							
Replacement livestock	37		0	<<	0		37
Breeding	4,652		-169		34		4,854
Veterinary & medicine	8,908		-137		217		9,262
Milk marketing	22,289		0	<<	402		22,691
Bedding	3,195		-74		-268		3,001
Milking supplies	7,683		-146		844		8,673
Cattle lease & rent	962		0	<<	0		962
Custom boarding	4,356		0	<<	0		4,356
bST expense	290		0		0		290
Livestock professional fees	1,251		-174	<<	0		1,425
Other livestock expense	3,068		43		285		3,310
Crops							
Fertilizer & lime	16,621		-1,747		-1,266		17,102
Seeds & plants	3,410		-1,482		233		5,124
Spray, other crop expense	2,001		-20		148		2,169
Crop professional fees	698		0	<<	1,050		1,749
Real Estate							
Land, building & fence repair	7,629		-41		-343		7,327
Taxes	9,881		0	<<	156		10,037
Rent & lease	7,542		0	<<	0		7,542
Other							
Insurance	8,013		-58	<<	-31		8,040
Utilities (farm share)	11,329		0	<<	74		11,404
Interest paid	14,930		0	<<	-563		14,366
Other professional fees	1,162		0	<<	0		1,162
Miscellaneous	2,896		9		204		3,091
Total Operating	$ 345,923		$ -16,550		$ -848		$ 361,625
Expansion livestock	885		-69	<<	0		954
Extraordinary expense	185		0	<<	593		778
Machinery depreciation							22,002
Building depreciation							15,882
TOTAL ACCRUAL EXPENSES							$ 401,241

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 2009 but not paid for. A decrease is subtracted because it represents payment for resources used before 2009.

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

27 Intensive Grazing Dairy Farms, 2009

Receipt Item	Cash Receipts	+	Change in Inventory	+	Change in Accounts Receivable	=	Accrual Receipts
Milk sales	$ 323,001				$ -2,004		$ 320,997
Dairy cattle	23,956		$ 12,411		-122		36,246
Dairy calves	2,347		452		0		2,799
Other livestock	4,514		4,984		0		9,497
Crops	562		-7,774		-30		-7,242
Government receipts	30,531		0		-221		30,310
Custom machine work	1,082				39		1,120
Gas tax refund	416				0		416
Other	6,264				-22		6,242
Less nonfarm noncash capital[8]		(-)	0			(-)	0
Total Receipts	$ 392,671		$ 10,073		$ -2,360		$ 400,384

[7]Change in advanced government receipts.

[8]Gifts or inheritances of cattle or crops included in inventory.

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

Changes in inventory of assets produced by the business are calculated by subtracting beginning of year values from end of year values excluding appreciation. Increases in livestock inventory caused by herd growth and/or quality are added, and decreases caused by herd reduction and/or quality are subtracted. Changes in inventories of crops grown are also included. An increase in advanced government receipts is subtracted from cash income because it represents income received in 2009 for the 2010 crop year in excess of funds earned for 2009. Likewise, a decrease is added to cash government receipts because it represents funds earned for 2009 but received in 2008.

Changes in accounts receivable are calculated by subtracting beginning year balances from end year balances. Payments in January for milk produced in December 2009 compared to January 2009 payments for milk produced in 2008 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 operators[9] 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.

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

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

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

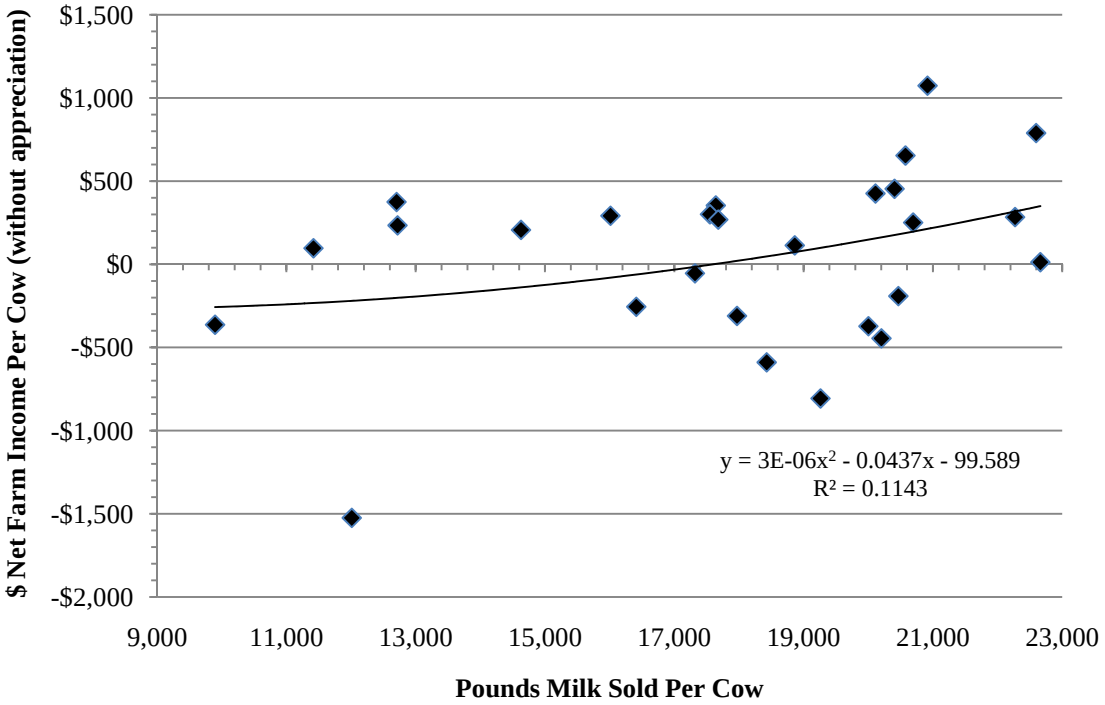
NET FARM INCOME
Intensive Grazing and Non-Grazing Dairy Farms, 2009

Item	27 Grazing Dairy Farms[10]	Average Non-Grazing Farms[10]
Total accrual receipts	$ 400,384	$ 538,052
Appreciation: Livestock	-17,361	-23,689
Machinery	5,263	4,348
Real Estate	13,797	12,811
Other Stock & Certificates	2,577	614
Total Including Appreciation	$ 404,660	$ 532,136
Total accrual expenses	- 401,241	- 558,408
Net Farm Income (with appreciation)	$ 3,419	$ -26,272
Net Farm Income Per Cow (with appreciation)	$ 24	$ -180
Net Farm Income (without appreciation)	$ -857	$ -20,355
Net Farm Income Per Cow (without appreciation)	$ -6	$ -139

[10]See page 1 for a description of these groups of farms.

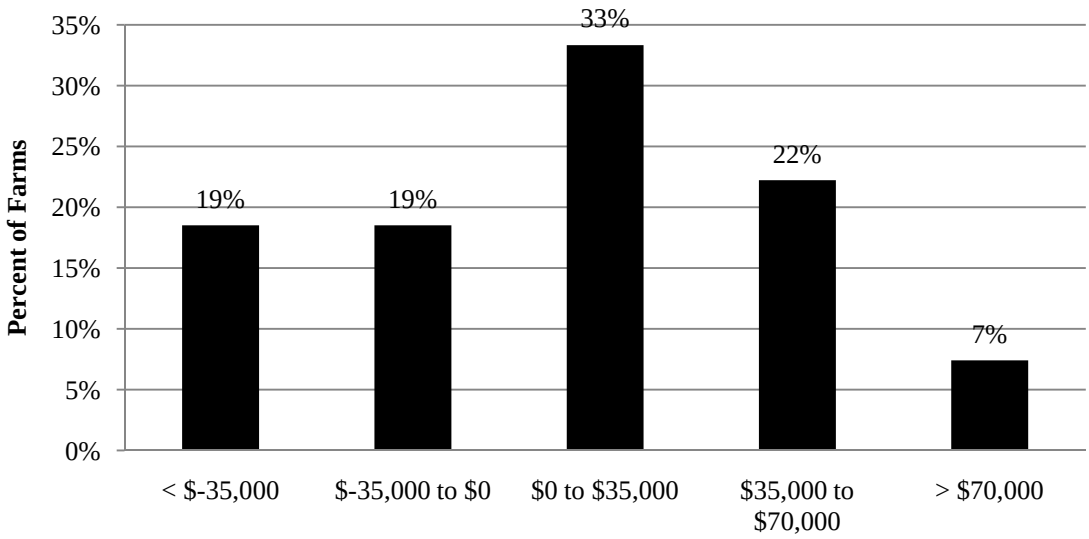
The chart below shows the relationship between net farm income per cow (without appreciation) and pounds of milk sold per cow. Higher new farm incomes can be achieved across a range of production levels as a result of different management systems, such as grazing, being utilized by the participating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

NET FARM INCOME PER COW AND MILK PER COW
27 Intensive Grazing Dairy Farms, 2009



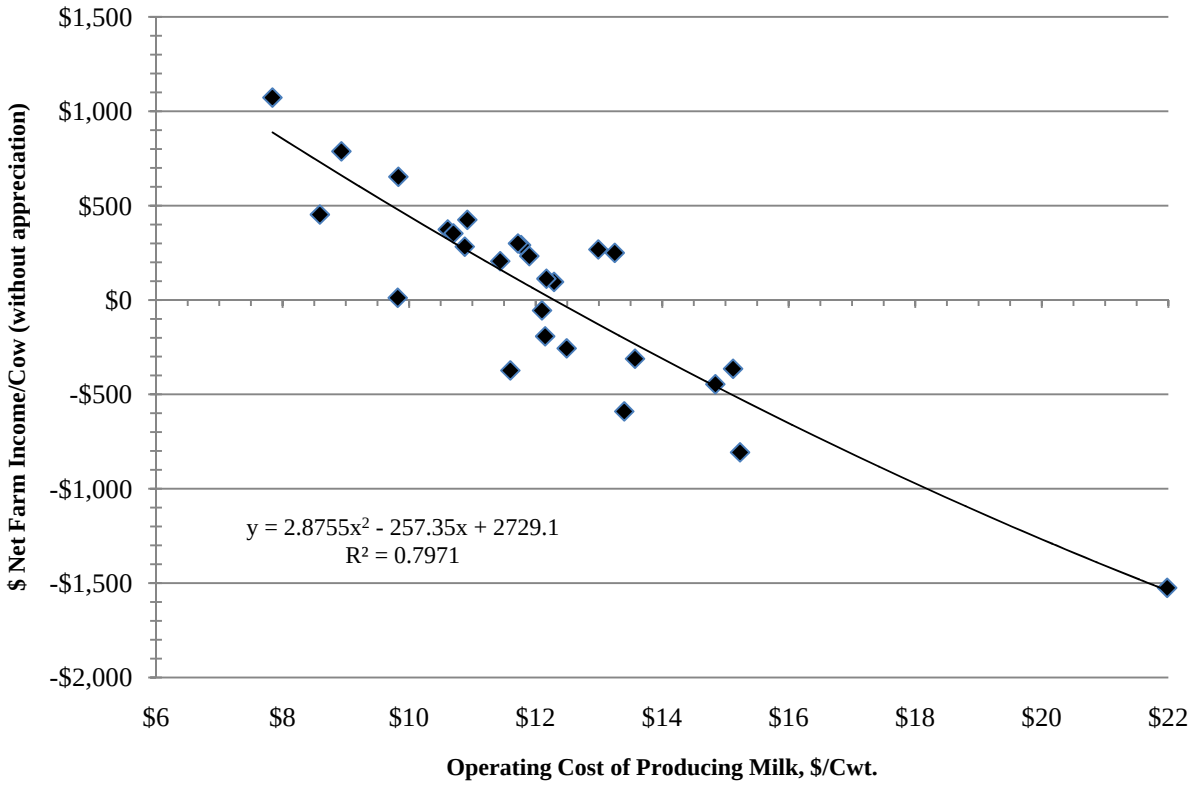
Net farm income without appreciation averaged $-857 on these 27 farms in 2009. The range in net farm income without appreciation was from less than $-156,400 to more than $89,300. Net farm income was less than $0 on 38 percent of the farms, between $0 and $70,000 on 55 percent of the farms, while 7 percent had net farm incomes of $70,000 or more.

DISTRIBUTION OF NET FARM INCOME WITHOUT APPRECIATION
27 Intensive Grazing Dairy Farms, 2009



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.
27 Intensive Grazing Dairy Farms, 2009



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.

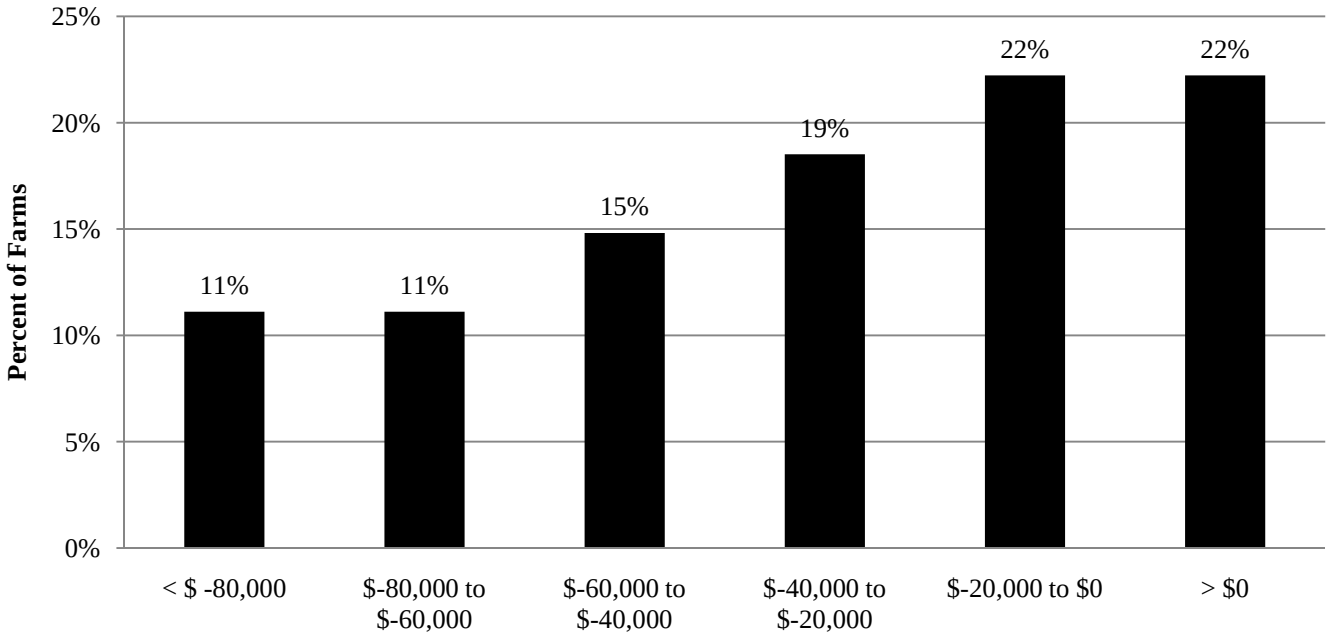
LABOR AND MANAGEMENT INCOME
Intensive Grazing and Non-Grazing Dairy Farms, 2009

Item	27 Grazing Dairy Farms[11]	Average Non-Grazing Farms[11]
Net farm income without appreciation	$ -857	$ -20,355
Family labor unpaid @ $2,500 per month	- 8,880	- 8,076
Interest on average equity capital @ 5% real rate	- 42,315	- 48,544
Labor & Management Income per Farm	$ -52,051	$ -76,975
Labor & Management Income per Operator/Manager	$ -34,934	$ -49,343
Labor & Management Income per Operator per Cow	$ -243	$ -338

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

Labor and management income per operator averaged $-34,934 on these 27 farms in 2009. The range in labor and management income per operator was from less than $-218,800 to more than $18,600. Returns to labor and management were less than $-60,000 on 22 percent of the farms. Labor and management incomes per operator were between $-60,000 and $-20,000 on 34 percent of the farms while 44 percent showed labor and management incomes of $-20,000 or more per operator.

DISTRIBUTION OF LABOR & MANAGEMENT INCOMES PER OPERATOR
27 Intensive Grazing Dairy Farms, 2009



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 considerable percentage of farms have labor and management incomes per operator less than zero. One comparison to make to the state distribution is the percentage of farms that were above zero labor and management income per operator. For the intensive grazing farms, 22 percent of the farms had returns that were over zero, while for 205 farms across the State, 8 percent had returns greater than zero in 2009.

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 and Non-Grazing Dairy Farms, 2009

Item		27 Grazing Dairy Farms[12]		Average Non-Grazing Farms[12]
Net farm income with appreciation	$	3,419	$	-26,272
Family labor unpaid @ $2,500 per month	-	8,880	-	8,076
Value of operators' labor & management	-	56,626	-	55,789
Return on equity capital with appreciation	$	-62,087	$	-90,137
Interest paid	+	14,366	+	18,868
Return on total capital with appreciation	$	-47,720	$	-71,269
Return on equity capital without appreciation	$	-66,363	$	-84,220
Return on total capital without appreciation	$	-51,996	$	-65,352
Rate of return on average equity capital:				
with appreciation		-7.3%		-9.2%
without appreciation		-7.8%		-8.7%
Rate of return on average total capital:				
with appreciation		-4.0%		-5.0%
without appreciation		-4.4%		-4.5%
Net farm income from operations ratio		-0.002		-0.04

[12]See 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 2009, lease payments were discounted by 8.15 percent to obtain their present value.

Advanced government receipts are included as current liabilities. Government payments received in 2009 that are for participation in the 2010 program are the end year balance and payments received in 2008 for participation in the 2009 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.

2009 FARM BUSINESS & NONFARM BALANCE SHEET

27 Intensive Grazing Dairy Farms, 2009

Farm Assets	Jan. 1	Dec. 31	Farm Liabilities & Net Worth	Jan. 1	Dec. 31
Current			Current		
Farm cash, checking & savings	$ 13,402	$ 12,952	Accounts payable	$ 27,130	$ 26,875
Accounts receivable	31,277	28,917	Operating debt	18,406	26,815
Prepaid expenses	658	145	Short Term	2,124	1,540
Feed & supplies	97,809	73,928	Advanced govt. receipts	0	0
			Current Portion:		
			Intermediate	6,818	21,319
			Long Term	9,280	10,559
Total Current	$ 143,146	$ 115,943	Total Current	$ 63,758	$ 87,109
Intermediate			Intermediate		
Dairy cows:			Structured debt		
owned	$ 182,865	$ 182,496	1-10 years	$ 114,005	$ 105,374
leased	0	0	Financial lease		
Heifers	115,571	111,442	(cattle/machinery)	270	953
Bulls & other livestock	10,431	15,415	Farm Credit stock	302	371
Mach. & equip. owned	202,832	204,020	Total Intermediate	$ 114,578	$ 106,698
Mach. & equip. leased	270	953			
Farm Credit stock	302	371			
Other stock/certificate	16,771	18,713			
Total Intermediate	$ 529,043	$ 533,411			
			Long Term		
Long Term			Structured debt		
Land & buildings:			>10 years	$ 166,269	$ 162,329
owned	$ 534,418	$ 537,376	Financial lease		
leased	0	0	(structures)	0	0
Total Long Term	$ 534,418	$ 537,376	Total Long Term	$ 166,269	$ 162,329
			Total Farm Liab.	$ 344,605	$ 356,136
Total Farm Assets	$1,206,607	$1,186,729	FARM NET WORTH	$ 862,002	$ 830,593

Nonfarm Assets, Liabilities & Net Worth (Average of 11 farms reporting)

Assets	Jan. 1	Dec. 31	Liabilities & Net Worth	Jan. 1	Dec. 31
Personal cash, checking & savings	$ 21,753	$ 22,007	Nonfarm Liabilities	$ 16,659	$ 16,825
Cash value life insurance	16,956	17,484			
Nonfarm real estate	46,818	46,818			
Auto (personal share)	11,273	10,727			
Stocks & bonds	37,934	48,115			
Household furnishings	11,455	11,636			
All other nonfarm assets	3,506	5,333			
Total Nonfarm Assets	$149,694	$162,121	NONFARM NET WORTH	$133,035	$145,295

Farm & Nonfarm Assets, Liabilities, and Net Worth[13]	Jan. 1	Dec. 31
Total Assets	$1,356,301	$1,348,850
Total Liabilities	361,264	372,961
TOTAL FARM & NONFARM NET WORTH	$ 995,037	$ 975,889

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

Balance sheet analysis involves examination of relative asset and debt levels for the business. Percent equity is calculated by dividing end of year net worth by end of year assets and multiplying by 100. The debt to asset ratio is compiled by dividing liabilities by assets. Low debt to asset ratios reflect business solvency and the potential capacity to borrow. The leverage ratio is the 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 and Non-Grazing Dairy Farms, 2009

Item		27 Grazing Dairy Farms[14]		Average Non-Grazing Farms [14]	
Financial Ratios - Farm:					
Percent equity		70%		65%	
Debt/asset ratio:	total	0.30		0.35	
	long-term	0.30		0.32	
	intermediate/current	0.30		0.38	
Leverage Ratio		0.43		0.54	
Current Ratio		1.33		1.44	
Working Capital:	$28,834; As % of Expenses	7%		$56,696	10%
Farm Debt Analysis:					
Accounts payable as % of total debt		8%		9%	
Long-term liabilities as a % of total debt		46%		40%	
Current & inter. liabilities as a % of total debt		54%		60%	
Cost of term debt (weighted average)		4.7%		4.5%	

	27 Grazing Dairy Farms[14]		Average Non-Grazing Farms [14]	
Farm Debt Levels:	Per Cow	Per Tillable Acre Owned	Per Cow	Per Tillable Acre Owned
Total farm debt	$ 2,513	$ 1,900	$ 3,371	$ 2,641
Long-term debt	1,146	866	1,350	1,057
Intermediate & long term	1,899	1,435	2,512	1,968
Intermediate & current debt	1,368	1,034	2,021	1,584

[14] 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

27 Intensive Grazing Dairy Farms, 2009

Item	Real Estate	Machinery & Equipment
Value beginning of year	$ 534,418	$ 202,832
Purchases	$ 9,506[15]	$ 16,126
Gift & inheritance	+ 2,222	+ 2,889
Lost capital	- 5,570	
Sales	- 1,115	- 1,088
Depreciation	- 15,882	- 22,002
Net investment	= -10,839	= -4,075
Appreciation	+ 13,797	+ 5,263
Value end of year	$ 537,376	$ 204,020

[15] $303 land and $9,203 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 and Non-Grazing Dairy Farms, 2009

Item	27 Grazing Dairy Farms[16]		Average Non-Grazing Farms[16]	
Beginning of year farm net worth		$ 862,001		$ 998,965
Net farm income w/o appreciation	$ -857		$ -20,355	
+Nonfarm cash income	+ 9,765		+ 7,680	
-Personal withdrawals & family expenditures excluding nonfarm borrowings	- 53,054		- 43,228	
RETAINED EARNINGS		+$ -44,146		+$ -55,903
Nonfarm noncash transfers to farm	$ 5,111		$ 4,090	
+Cash used in business from nonfarm capital	+ 6,130		+ 10,508	
-Note or mortgage from farm real estate sold (nonfarm)	- 0		- 0	
CONTRIBUTED/ WITHDRAWN CAPITAL		+$ 11,241		+$ 14,598
Appreciation	$ 4,276		$ -5,916	
-Lost capital	- 5,570		- 9,436	
CHANGE IN VALUATION EQUITY		+$ -1,294		+$ -15,352
IMBALANCE/ERROR		- -2,792		- -480
End of year net worth[17]		=$830,593		=$ 942,788
Change in Net Worth				
Without appreciation	$ -35,684		$ -50,260	
With appreciation	$ -31,407		$ -56,177	

[16]See page 1 for a description of these groups of farms.
[17]May not add due to rounding.

Cash Flow Statement

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

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

ANNUAL CASH FLOW STATEMENT
27 Intensive Grazing Dairy Farms, 2009

Item			Average	
Cash Flow from Operating Activities				
Cash farm receipts	$ 392,671			
- Cash farm expenses	345,923			
- Extraordinary expense	185			
= Net cash farm income		$ 46,563		
Personal withdrawals & family expenses				
including nonfarm debt payments	$ 54,124			
- Nonfarm income	9,765			
- Net cash withdrawals from the farm		$ 44,359		
= Net Provided by Operating Activities			$	2,204
Cash Flow From Investing Activities				
Sale of assets: machinery	$ 1,088			
+ real estate	1,115			
+ other stock & cert.	889			
= Total asset sales		$ 3,092		
Capital purchases: expansion livestock	$ 885			
+ machinery	16,126			
+ real estate	9,506			
+ other stock& cert.	253			
- Total invested in farm assets		$ 26,770		
= Net Provided by Investment Activities			$	-23,679
Cash Flow From Financing Activities				
Money borrowed (intermediate & long term)	$ 38,194			
+ Money borrowed (short term)	1,740			
+ Increase in operating debt	8,410			
+ Cash from nonfarm capital used in business	6,130			
+ Money borrowed - nonfarm	1,070			
= Cash inflow from financing		$ 55,544		
Principal payments (intermediate & long term)	$ 34,988			
+ Principal payments (short term)	2,324			
+ Decrease in operating debt	0			
- Cash outflow for financing		$ 37,312		
= Net Provided by Financing Activities			$	18,232
Cash Flow From Reserves				
Beginning farm cash, checking & savings		$ 13,402		
- Ending farm cash, checking & savings		12,952		
= Net Provided from Reserves			$	450
Imbalance (error)			$	-2,793

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 2010. The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to planned 2010 debt payments shown below.

FARM DEBT PAYMENTS PLANNED

Same Intensive Grazing and Non-Grazing Dairy Farms, 2008 & 2009

	Same 20 Grazing Dairy Farms			Same 72 Non-Grazing Dairy Farms		
	2009 Payments		Planned	2009 Payments		Planned
Debt Payments	Planned	Made	2010	Planned	Made	2010
Long term	$ 19,700	$ 23,052	$ 21,239	$ 22,287	$ 22,596	$ 21,713
Intermediate term	35,505	23,506	28,348	46,160	43,160	42,637
Short term	495	1,151	315	2,141	2,674	2,882
Operating (net reduction)	100	866	2,165	1,930	4,299	1,724
Accounts payable (net reduction)	0	2,070	0	0	3,420	4,854
Total	$ 55,800	$ 50,645	$ 52,067	$ 72,518	$ 76,148	$ 73,810
Per cow	$ 338	$ 307		$ 492	$ 517	
Per cwt. 2009 milk	$ 2.15	$ 1.95		$ 2.22	$ 2.33	
Percent of total 2009 farm receipts	12%	11%		14%	14%	
Percent of 2009 milk receipts	15%	14%		16%	17%	

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 2009 (as of December 31, 2008) that could have been made with the amount available for debt service in 2009. Farmers who did not participate in DFBS in 2008 have their 2009 coverage ratios based on planned debt payments for 2010.

COVERAGE RATIOS

Same Intensive Grazing and Non-Grazing Dairy Farms, 2008 & 2009

Item	Average	Item	Average
Same 20 Grazing Dairy Farms, 2008 & 2009			
(A)=Amount Available for Debt Service	$ 23,311	(A')=Repayment Capacity	$ 2,882
(B)=Debt Payments Planned for 2009	$ 55,800	(B)=Debt Payments Planned for 2009	$ 55,800
(A/B)=Cash Flow Coverage Ratio for 2009	0.42	(A'/B)=Debt Coverage Ratio for 2009	0.05
Same 72 Farms Non-Grazing Dairy Farms, 2008 & 2009			
(A)=Amount Available for Debt Service	$ 16,332	(A')=Repayment Capacity	$ 3,963
(B)=Debt Payments Planned for 2009	$ 72,518	(B)=Debt Payments Planned for 2009	$ 72,518
(A/B)=Cash Flow Coverage Ratio for 2009	0.23	(A'/B)=Debt Coverage Ratio for 2009	0.05

ANNUAL CASH FLOW WORKSHEET

Intensive Grazing and Non-Grazing Dairy Farms, 2009

Item	27 Grazing Dairy Farms		Average Non-Grazing Farms	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average no. of cows	144		146	
Total cwt. of milk sold		22,862		32,044
Accrual Operating Receipts				
Milk	$2,230	$14.04	$3,008	$13.71
Dairy cattle	252	1.59	230	1.05
Dairy calves	19	0.12	26	0.12
Other livestock	66	0.42	3	0.01
Crops	-50	-0.32	39	0.18
Misc. Receipts	265	1.67	378	1.72
Total	$2,782	$17.51	$3,685	$16.79
Accrual Operating Expenses				
Hired labor	$ 264	$ 1.66	$ 452	$ 2.06
Dairy grain & concentrate	749	4.72	1,149	5.24
Dairy roughage	127	0.80	80	0.36
Nondairy feed	1	0.01	1	0.00
Professional nutritional services	0	0.00	0	0.00
Mach. hire, rent & lease	126	0.79	101	0.46
Mach. repair & vehicle expense	127	0.80	177	0.81
Fuel, oil & grease	90	0.57	153	0.70
Replacement livestock	0	0.00	20	0.09
Breeding	34	0.21	54	0.25
Vet & medicine	64	0.41	126	0.58
Milk marketing	158	0.99	205	0.93
Bedding	21	0.13	61	0.28
Milking supplies	60	0.38	86	0.39
Cattle lease	7	0.04	3	0.01
Custom boarding	30	0.19	47	0.21
bST expense	2	0.01	33	0.15
Livestock professional fees	10	0.06	14	0.06
Other livestock expense	23	0.14	37	0.17
Fertilizer & lime	119	0.75	92	0.42
Seeds & plants	36	0.22	71	0.32
Spray & other crop expense	15	0.09	44	0.20
Crop professional fees	12	0.08	4	0.02
Land, bldg., fence repair	51	0.32	48	0.22
Taxes	70	0.44	67	0.30
Real estate rent & lease	52	0.33	47	0.22
Insurance	56	0.35	52	0.24
Utilities	79	0.50	109	0.50
Miscellaneous	30	0.19	39	0.18
Total Less Interest Paid	$2,413	$15.19	$3,372	$15.37
Net Accrual Operating Income	Total		Total	
(without interest paid)	$ 53,126		$ 45,674	
- Change in livestock & crop invent.[18]	10,073		15,144	
- Change in accounts receivable	-2,360		1,050	
- Change in feed & supply inventory[19]	-16,550		-7,073	
+ Change in accounts payable[20]	-284		14,730	
NET CASH FLOW	$ 61,678		$ 51,283	
- Net family withdrawals	40,061		34,368	
Available for Farm	$ 21,617		$ 16,915	
- Farm debt payments	56,612		75,571	
Available for Farm Investment	$-34,994		$ -58,656	
- Capital purchases	26,770		64,807	
Additional Capital Needed	$ 61,765		$123,463	

[18]Includes change in advance government receipts. [19]Includes change in prepaid expenses. [20]Excludes change in interest account payable.

Cropping Analysis

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

LAND RESOURCES AND CROP PRODUCTION
Intensive Grazing and Non-Grazing Dairy Farms, 2009

Item	27 Grazing Dairy Farms[22]			Average Non-Grazing Farms[22]		
Land	Owned	Rented	Total	Owned	Rented	Total
Tillable	187	146	333	192	199	391
Nontillable	33	23	56	52	8	60
Other nontill.	128	12	140	95	3	98
Total	348	181	529	339	211	549
Crop Yields	Farms	Acres[21]	Prod/Acre	Farms	Acres[21]	Prod/Acre
Hay crop	26	194	2.2 tn DM	77	256	2.7 tn DM
Corn silage	17	80	15.6 tn	71	110	17.1 tn
			5.2 tn DM			5.8 tn DM
Other forage	0	0	0.0 tn DM	8	28	1.8 tn DM
Total forage	26	247	2.8 tn DM	77	360	3.6 tn DM
Corn grain	2	50	116 bu	26	113	132 bu
Oats	2	21	77 bu	7	27	52 bu
Wheat	0	0	0 bu	3	43	60 bu
Other crops	5	25		18	41	
Tillable pasture	16	137		9	15	
Idle	6	19		16	23	
Total Tillable Acres	27	333		82	391	

[21]This column represents the average acreage for the farms producing that crop. For the 27 Intensive grazing dairy farms, average acreages including those farms not producing were hay crop 186, corn silage 51, corn grain 4, oats 2, wheat 0, tillable pasture 81, and idle 4.

Average crop acres and yields compiled for the grazing farms 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 and Non-Grazing Dairy Farms, 2009

Item	26 Grazing Dairy Farms[22]	Average Non-Grazing Farms[22]
Total tillable acres per cow	2.35	2.76
Total forage acres per cow	1.68	2.39
Harvested forage dry matter, tons per cow	4.75	8.59

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

Cropping Analysis (continued)

Crop input costs per tillable acre are reported in the table below. The chart below shows the relationship between total forage dry matter per acre and total crop input costs.

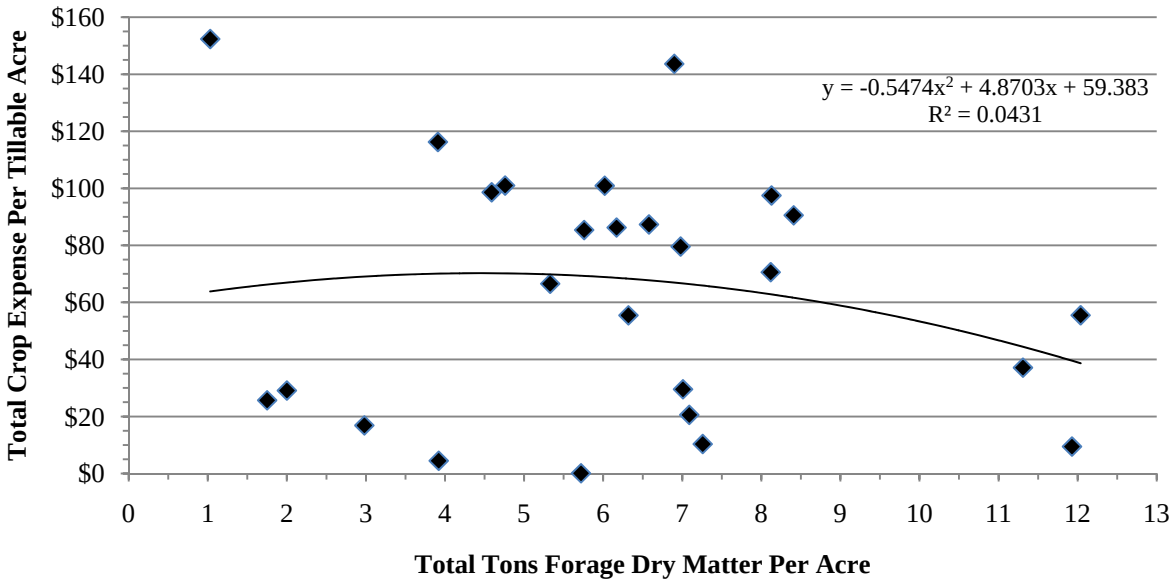
CROP RELATED ACCRUAL EXPENSES

Intensive Grazing and Non-Grazing Dairy Farms That Harvest Forages, 2009

Item	26 Grazing Dairy Farms[23]	Average Non-Grazing Farms[23]
	Total Per Tillable Acre	
Number of farms reporting	26	77
Average number of acres	344	416
Fertilizer & lime expense	$ 40.68	$ 30.69
Seeds & plants	15.00	24.05
Spray & other crop expenses	8.58	16.59
TOTAL	$ 64.26	$ 71.33

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

CROP EXPENSE PER ACRE AND TOTAL FORAGE PRODUCTION PER ACRE
26 Intensive Grazing Dairy Farms, 2009



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

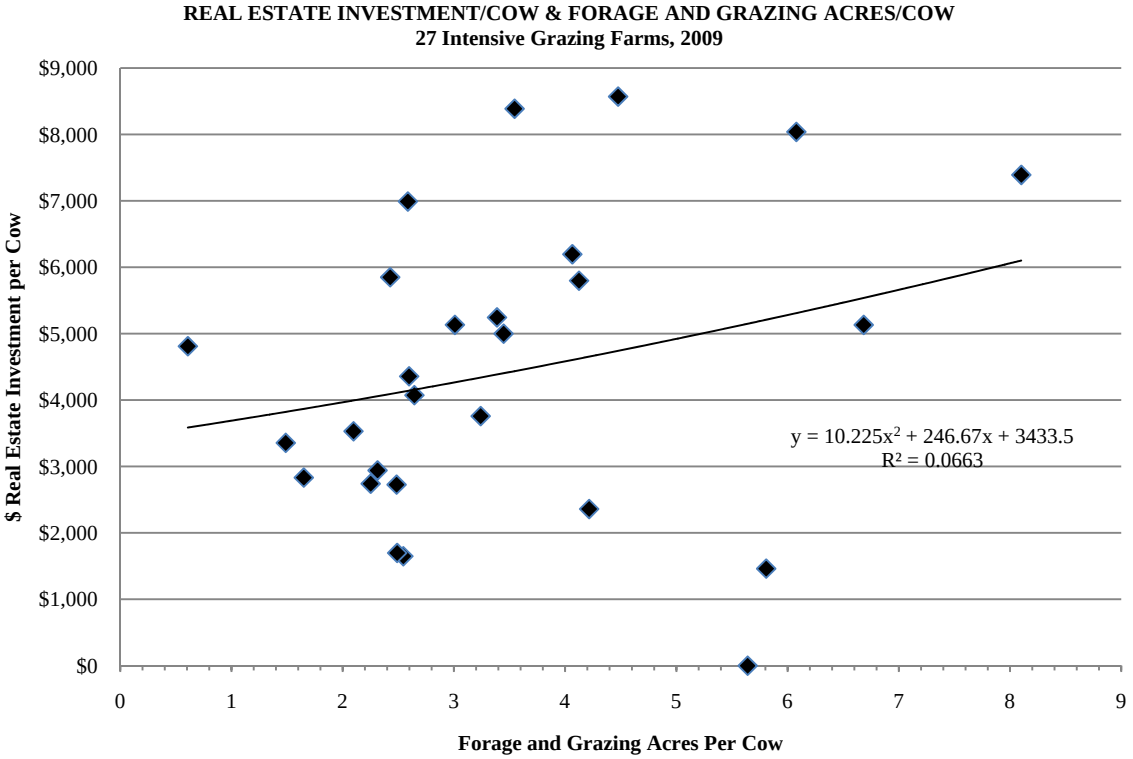
Intensive Grazing and Non-Grazing Dairy Farms That Harvest Forages, 2009

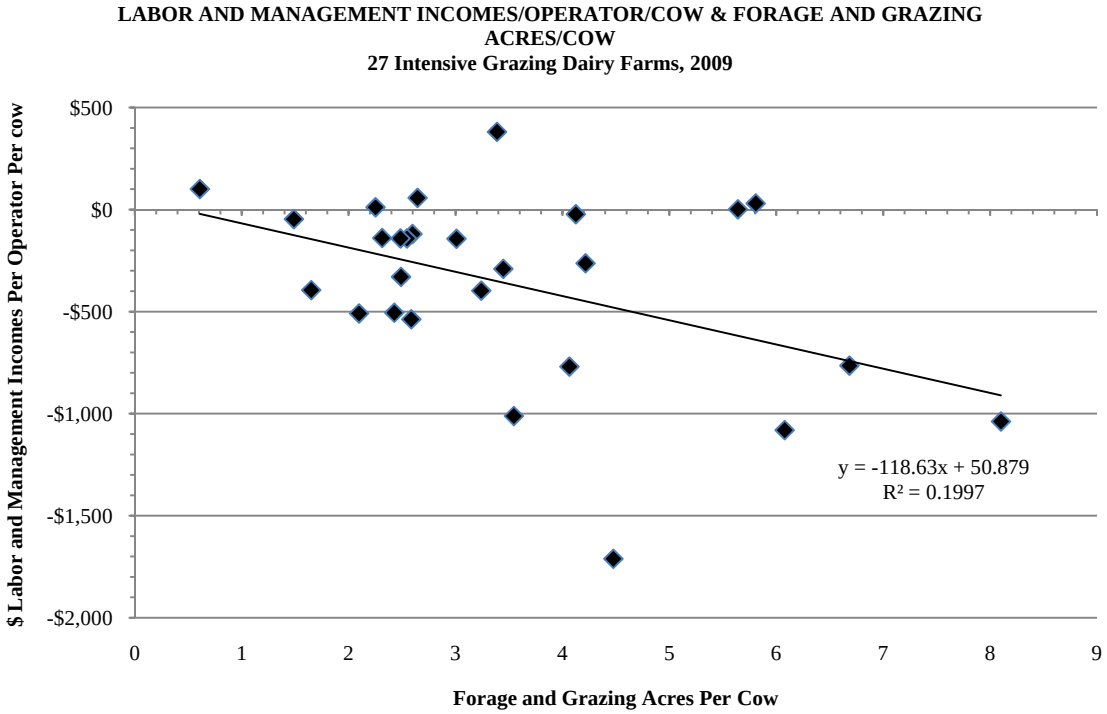
Machinery Expense	26 Grazing Dairy Farms[24] Total Expenses	26 Grazing Dairy Farms[24] Per Tillable Acre	Average Non-Grazing Farms[24] Total Expenses	Average Non-Grazing Farms[24] Per Tillable Acre
Fuel, oil & grease	$ 13,399	$ 38.94	$ 23,353	$ 56.11
Mach. repair & vehicle exp.	18,741	54.47	26,897	64.63
Machine hire, rent & lease	18,768	54.54	15,469	37.17
Interest (5%)	10,376	30.16	14,279	34.31
Depreciation	21,551	62.63	26,411	63.46
Total	$ 82,835	$240.74	$106,409	$255.68

[24]See 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.





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 19 through 22.

DAIRY HERD INVENTORY

Intensive Grazing and Non-Grazing Dairy Farms, 2009

	Dairy Cows		Bred Heifers		Open Heifers		Calves	
Item	No.	Value	No.	Value	No.	Value	No.	Value
27 Grazing Dairy Farms[25]								
Beg. year (owned)	134	$ 182,865	47	$ 64,233	41	$ 34,112	27	$ 17,226
+ Change w/o apprec.		10,109		3,698		-1,396		452
+ Appreciation		-10,478		-3,841		-1,564		-1,478
End year (owned)	141	$ 182,496	50	$ 64,091	40	$ 31,151	27	$ 16,200
End including leased	142							
Average number	144		118	(all age groups)				
Average Non-Grazing Farms[25]								
Beg. year (owned)	143	$ 213,245	40	$ 60,414	42	$ 39,812	35	$ 19,524
+ Change w/o apprec.		7,065		6,755		1,398		1,037
+ Appreciation		-13,257		-4,033		-3,334		-3,076
End year (owned)	149	$ 207,053	45	$ 63,137	44	$ 37,876	38	$ 17,485
End including leased	150							
Average number	146		123	(all age groups)				

[25] 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 and Non-Grazing Dairy Farms, 2009

Item	27 Grazing Dairy Farms[26]	Average Non-Grazing Farms[26]
Total milk sold, pounds	2,286,177	3,204,376
Milk sold per cow, pounds	15,884	21,946
Average milk plant test, percent butterfat	3.89%	3.72%

[26] 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 and Non-Grazing Dairy Farms, 2009

	27 Grazing Dairy Farms		Average Non-Grazing Farms	
Item	Number	Percent[27]	Number	Percent[27]
Cows sold for beef	28	19.7	38	25.7
Cows sold for dairy	7	5.0	1	0.9
Cows died	5	3.2	10	6.8
Culling rate[28]		23.0		33.0

[27]Percent of average number of cows in the herd. [28]Cows sold for beef plus cows died.

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

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

Intensive Grazing and Non-Grazing Dairy Farms, 2009

	27 Grazing Dairy Farms[29]		Average Non-Grazing Farms[29]	
Item	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Accrual Cost of Producing Milk				
Operating costs	$ 1,968	$ 12.39	$ 2,868	$ 13.07
Purchased inputs costs	$ 2,236	$ 14.08	$ 3,148	$ 14.34
Total Costs	$ 2,985	$ 18.79	$ 3,918	$ 17.85
Accrual Receipts From Milk	$ 2,230	$ 14.04	$ 3,008	$ 13.71
Net milk receipts	$ 2,073	$ 13.05	$ 2,804	$ 12.77
Net Farm Income without Appreciation	$ -6	$ -0.04	$ -139	$ -0.64
Net Farm Income with Appreciation	$ 24	$ 0.15	$ -180	$ -0.82

[29] 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 and Non-Grazing Dairy Farms, 2009

	27 Grazing Dairy Farms[29]		Average Non-Grazing Farms[29]	
Item	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Purchased dairy grain & concentrate	$ 749	$ 4.72	$ 1,149	$ 5.24
Purchased dairy roughage	127	0.80	80	0.36
Total Purchased Dairy Feed	$ 876	$ 5.52	$ 1,229	$ 5.60
Purchased grain & concentrate as % of milk receipts	35%		39%	
Purchased feed & crop expense	$ 1,058	$ 6.66	$ 1,441	$ 6.56
Purchased feed & crop expense as % of milk receipts	47%		48%	
Breeding	$ 34	$ 0.21	$ 54	$ 0.25
Veterinary & medicine	64	0.41	127	0.58
Milk marketing	158	0.99	205	0.93
Bedding	21	0.13	61	0.28
Milking supplies	60	0.38	86	0.39
Cattle lease	7	0.04	3	0.01
Custom boarding	30	0.19	47	0.21
bST expense	2	0.01	33	0.15
Livestock professional fees	10	0.06	14	0.06
Other livestock expense	23	0.14	37	0.17

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 and Non-Grazing Dairy Farms, 2009

Item	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
27 Grazing Dairy Farms[30]				
Farm capital	$ 371,636	$ 8,314	$ 3,594	$ 6,383
Real estate		3,723		2,858
Machinery & equipment	63,366	1,418	613	
Ratios:				
Asset Turnover Ratio	Operating Expense	Interest Expense	Depreciation Expense	
0.34	0.87	0.04	0.09	
Average Non-Grazing Farms[30]				
Farm capital	$ 340,127	$ 9,854	$ 3,676	$ 7,493
Real estate		4,292		3,264
Machinery & equipment	64,201	1,860	694	
Ratios:				
Asset Turnover Ratio	Operating Expense	Interest Expense	Depreciation Expense	
0.37	0.93	0.04	0.07	

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

Capital and Labor Efficiency Analysis (continued)

LABOR FORCE INVENTORY AND ANALYSIS
Intensive Grazing and Non-Grazing Dairy Farms, 2009

Labor Force	Months	Age	Years of Education	Value of Labor & Management
27 Grazing Dairy Farms				
Operator number 1	13.7	49	14	$ 38,135
Operator number 2	5.7	46	14	15,898
Operator number 3	0.7	49	16	2,593
Family paid	2.2			
Family unpaid	3.5			
Hired	12.9			
Total	38.7	/ 12 = 3.22 Worker Equivalent		
		1.49 Operator/Manager Equivalent		
Average Non-Grazing Farms				
Total Labor Force	50.7	/ 12 = 4.23 Worker Equivalent		
Operator's Labor		1.56 Operator/Manager Equivalent		

Labor Efficiency	27 Grazing Dairy Farms Total	27 Grazing Dairy Farms Per Worker	Average Non-Grazing Farms Total	Average Non-Grazing Farms Per Worker
Cows, average number	144	45	146	35
Milk sold, pounds	2,286,177	709,259	3,204,376	758,283
Tillable acres	333	103	391	93

Labor Costs	27 Grazing Dairy Farms Per Cow	27 Grazing Dairy Farms Per Cwt.	Average Non-Grazing Farms Per Cow	Average Non-Grazing Farms Per Cwt.
Value of operator(s) labor ($2,500/month)	$ 349	$ 2.20	$ 364	$ 1.66
Family unpaid ($2,500/month)	61	0.38	55	0.25
Hired	264	1.66	453	2.06
Total Labor	$ 674	$ 4.24	$ 872	$ 3.97
Machinery Cost	$ 567	$ 3.57	$ 698	$ 3.18
Total Labor & Machinery	$ 1,241	$ 7.81	$ 1,570	$ 7.15
Hired labor expense per hired worker equivalent	$30,266		$30,246	
Hired labor expense as % of milk sales	11.8%		15.0%	

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

Intensive Grazing and Non-Grazing Dairy Farms, 2008 & 2009[31]

	Same 20 Grazing Dairy Farms		Same 72 Non-Grazing Dairy Farms	
Selected Factors	2008	2009	2008	2009
Size of Business				
Average number of cows	160	165	142	147
Average number of heifers	127	131	115	124
Milk sold, pounds	2,598,970	2,595,519	3,172,001	3,266,389
Worker equivalent	3.39	3.37	4.09	4.19
Total tillable acres	370	359	365	378
Rates of Production				
Milk sold per cow, pounds	16,289	15,735	22,273	22,164
Hay DM per acre, tons	2.5	2.2	2.7	2.7
Corn silage per acre, tons	17.7	15.2	18.8	17.0
Labor Efficiency				
Cows per worker	47	49	35	35
Milk sold/worker, pounds	766,658	770,184	775,550	779,568
Cost Control and Milk Price				
Grain & concentrate purchased as % of milk sales	28%	34%	31%	38%
Dairy feed & crop expense per cwt. milk	$ 8.13	$ 6.70	$ 7.46	$ 6.61
Labor & machinery costs/cow	$ 1,365	$ 1,185	$ 1,718	$ 1,526
Operating cost of producing cwt. of milk	$ 14.28	$ 12.56	$ 15.66	$ 13.10
Milk receipts per cwt.	$ 19.89	$ 14.12	$ 19.34	$ 13.75
Capital Efficiency[32]				
Farm capital per cow	$ 8,309	$ 8,153	$ 9,649	$ 9,679
Machinery & equipment per cow	$ 1,475	$ 1,485	$ 1,773	$ 1,787
Asset turnover ratio	0.46	0.34	0.52	0.38
Profitability				
Net farm income without appreciation	$ 100,492	$ -4,061	$ 74,439	$ -18,169
Net farm income with appreciation	$ 101,872	$ 1,432	$ 95,249	$ -23,594
Labor & management income per operator/manager	$ 27,750	$ -39,895	$ 13,054	$ -47,606
Rate of return on equity capital with appreciation	3.3%	-6.7%	3.8%	-9.0%
Rate of return on all capital with appreciation	3.7%	-3.8%	4.1%	-4.7%
Financial Summary				
Farm net worth, end year	$1,019,622	$ 969,172	$ 977,321	$ 925,800
Debt to asset ratio	0.25	0.27	0.31	0.36
Farm debt per cow	$ 2,267	$ 2,252	$ 2,968	$ 3,371

[31]Farms participating both years.
[32]Average for the year.

RECEIPTS AND EXPENSES PER COW AND PER CWT.

Same 20 Intensive Grazing Dairy Farms, 2008 & 2009

	2008		2009	
Item	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	160		165	
Cwt. Of Milk Sold		25,990		25,955
ACCRUAL OPERATING RECEIPTS				
Milk	$3,240	$19.89	$2,221	$14.12
Dairy cattle	284	1.74	239	1.52
Dairy calves	23	0.14	21	0.13
Other livestock	63	0.39	75	0.47
Crops	149	0.92	-59	-0.38
Miscellaneous receipts	91	0.56	250	1.59
Total Receipts	$3,850	$23.64	$2,747	$17.46
ACCRUAL OPERATING EXPENSES				
Hired labor	$ 284	$ 1.75	$ 273	$ 1.74
Dairy grain & concentrate	917	5.63	745	4.73
Dairy roughage	151	0.93	116	0.74
Nondairy feed	2	0.01	1	0.01
Professional nutritional services	1	0.00	0	0.00
Machine hire/rent/lease	172	1.05	132	0.84
Machinery repair & vehicle expense	151	0.93	121	0.77
Fuel, oil & grease	146	0.90	89	0.56
Replacement livestock	3	0.02	0	0.00
Breeding	37	0.23	33	0.21
Veterinary & medicine	85	0.52	66	0.42
Milk marketing	162	1.00	151	0.96
Bedding	22	0.13	19	0.12
Milking supplies	51	0.32	59	0.37
Cattle lease	0	0.00	8	0.05
Custom boarding	7	0.04	36	0.23
bST expense	3	0.02	2	0.02
Livestock professional fees	11	0.07	8	0.05
Other livestock expense	16	0.10	16	0.10
Fertilizer & lime	190	1.17	136	0.86
Seeds & plants	38	0.23	39	0.25
Spray/other crop expense	24	0.15	14	0.09
Crop professional fees	4	0.02	6	0.04
Land, building, fence repair	60	0.37	55	0.35
Taxes	64	0.40	72	0.46
Real estate rent/lease	50	0.31	56	0.36
Insurance	48	0.29	56	0.36
Utilities	75	0.46	73	0.47
Interest paid	95	0.58	89	0.57
Other professional fees	11	0.07	9	0.06
Miscellaneous	35	0.22	23	0.14
Total Operating Expenses	$2,914	$17.89	$2,501	$15.89
Expansion Livestock	23	0.14	1	0.01
Extraordinary Expense	4	0.02	0	0.00
Machinery Depreciation	179	1.10	158	1.00
Real Estate Depreciation	101	0.62	111	0.71
Total Expenses	$3,221	$19.77	$2,771	$17.61
Net Farm Income Without Appreciation	$ 630	$ 3.87	$ -25	$ -0.16

RECEIPTS AND EXPENSES PER COW AND PER CWT.

Same 72 Non-Grazing Dairy Farms, 2008 & 2009

	2008		2009	
Item	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average Number of Cows	142		147	
Cwt. Of Milk Sold		31,720		32,664
ACCRUAL OPERATING RECEIPTS				
Milk	$4,308	$19.34	$3,048	$13.75
Dairy cattle	227	1.02	238	1.07
Dairy calves	37	0.17	26	0.12
Other livestock	7	0.03	3	0.01
Crops	161	0.72	37	0.17
Miscellaneous receipts	107	0.48	373	1.68
Total Receipts	$4,848	$21.77	$3,725	$16.81
ACCRUAL OPERATING EXPENSES				
Hired labor	$ 467	$ 2.10	$ 456	$ 2.06
Dairy grain & concentrate	1,321	5.93	1,170	5.28
Dairy roughage	102	0.46	86	0.39
Nondairy feed	0	0.00	1	0.00
Professional nutritional services	0	0.00	0	0.00
Machine hire/rent/lease	111	0.50	106	0.48
Machinery repair & vehicle expense	228	1.02	167	0.76
Fuel, oil & grease	228	1.02	146	0.66
Replacement livestock	38	0.17	22	0.10
Breeding	61	0.27	54	0.24
Veterinary & medicine	137	0.61	130	0.59
Milk marketing	221	0.99	207	0.93
Bedding	66	0.30	67	0.30
Milking supplies	89	0.40	79	0.36
Cattle lease	4	0.02	3	0.01
Custom boarding	61	0.27	52	0.24
bST expense	36	0.16	33	0.15
Livestock professional fees	14	0.06	13	0.06
Other livestock expense	38	0.17	38	0.17
Fertilizer & lime	120	0.54	87	0.39
Seeds & plants	64	0.29	72	0.33
Spray/other crop expense	50	0.23	46	0.21
Crop professional fees	5	0.02	4	0.02
Land, building, fence repair	64	0.29	49	0.22
Taxes	62	0.28	66	0.30
Real estate rent/lease	49	0.22	47	0.21
Insurance	48	0.21	51	0.23
Utilities	117	0.52	109	0.49
Interest paid	139	0.63	128	0.58
Other professional fees	19	0.09	15	0.07
Miscellaneous	31	0.14	24	0.11
Total Operating Expenses	$3,989	$17.91	$3,530	$15.93
Expansion Livestock	38	0.17	49	0.22
Extraordinary Expense	1	0.01	9	0.04
Machinery Depreciation	193	0.87	160	0.72
Real Estate Depreciation	104	0.47	100	0.45
Total Expenses	$4,325	$19.43	$3,848	$17.36
Net Farm Income Without Appreciation	$ 523	$ 2.35	$ -123	$ -0.56

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

27 Intensive Grazing Dairy Farms, 2009

Size of Business								Rates of Production		
Worker Equiv-alent	No. of Cows	No. of Heifers	Pounds Milk Sold	Hay Acres	All Pas-ture & Hay Acres	Nontillable Pasture & Tillable Acres	Stock-ing Rate	Pounds Milk Sold Per Cow	Tons Hay DM/ Acre	Tons Corn Silage Per Acre
(14)[33]	(12)	(12)	(12)	(11)	(11)	(11)	(11)	(12)	(11)	(11)
6.34	416	320	5,781,179	444	765	855	6.1	21,829	4.1	22
3.72	150	136	2,775,950	237	298	406	3.8	20,353	2.8	19
2.91	92	81	1,604,433	136	209	272	2.8	18,906	2.2	17
2.25	55	50	1,050,406	107	166	189	2.5	17,103	1.9	15
1.45	45	34	769,423	52	103	131	1.6	12,230	1.4	8

Labor Efficiency and Costs				Cost Control				
Cows Per Worker	Pounds Milk Sold Per Worker	Hired Labor Cost Per Worker	Hired Labor Cost as % of Milk Sales	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt.
(14)	(14)	(14)	(14)	(12)	(14)	(14)	(12)	(12)
70	1,099,830	$1,397	0%	24%	$404	$1,014	$818	$5.00
44	804,572	14,397	3	33	572	1,345	976	6.00
34	630,486	25,286	8	37	654	1,583	1,167	6.58
27	490,006	33,490	13	39	806	1,878	1,303	6.94
21	349,770	82,568	20	42	993	2,267	1,476	7.91

Value and Cost of Milk Production				Profitability			
Net Milk Receipts Per Cwt.	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	Labor & Mgmt. Income Per Oper. Per Cow
(12)	(12)	(12)	(12)	(4)	(4)	(4)	(4)
$14.00	$2,971	$9.27	$16.18	$62,898	$63,104	$7,216	$97
13.02	2,766	11.21	17.68	34,717	37,275	-6,194	-102
12.68	2,587	12.02	18.76	12,908	14,370	-21,570	-284
12.23	2,298	12.88	20.90	-6,962	-16,019	-45,822	-543
11.69	1,749	16.15	27.15	-69,754	-83,462	-106,099	-1,122

Profitability, continued			Capital Efficiency			Financial Summary		
Rate Return on Equity Capital Without Ap-preciation	Rate Return on All Capital Without Ap-preciation	Govern-ment Re-ceipts Per Cwt.	Farm Capital Per Cow	Machinery & Equip-ment Per Cow	Asset Turn-over Ratio	Debt to Asset Ratio	Farm Debt Per Cow	Change in Net Worth with Appreciation
(4)	(4)	(4)	(14)	(14)	(14)	(7)	(7)	(8)
-1%	1%	$1.80	$6,071	$598	0.59	0.00	$1	$40,469
-4	-2	1.61	8,090	1,242	0.38	0.08	700	9,098
-8	-5	1.48	9,400	1,859	0.33	0.24	2,116	-9,887
-12	-8	1.36	11,403	2,479	0.28	0.41	3,417	-41,803
-24	-12	0.67	14,143	3,829	0.21	0.61	5,246	-132,597

[33]Page number of the participant's DFBS where the factor is located.

INCOME AND EXPENSE PROFILES

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

RECEIPTS AND EXPENSES PER COW

27 Intensive Grazing Dairy Farms, 2009

	QUINTILE				
Item	1	2	3	4	5
Accrual Operating Receipts					
Milk	$2,971	$2,766	$2,587	$2,298	$1,749
Dairy cattle	498	298	209	143	8
Dairy calves	80	33	17	3	-67
Other livestock	128	3	0	0	-1
Crops	144	59	1	-37	-234
Miscellaneous receipts	518	379	328	276	184
Total Operating Receipts	$3,752	$3,362	$3,075	$2,758	$2,256
Accrual Operating Expenses					
Hired labor	$2	$74	$180	$277	$439
Dairy grain & concentrate	526	761	878	990	1,150
Dairy roughage	0	2	36	134	507
Nondairy feed	0	0	0	0	2
Professional nutritional services	0	0	0	0	0
Machinery hire/rent/lease	7	30	78	169	295
Mach. repair & farm vehicle exp.	83	118	168	225	311
Fuel, oil & grease	52	83	111	135	174
Replacement livestock	0	0	0	0	3
Breeding	15	31	49	66	84
Veterinary & medicine	30	46	74	104	130
Milk marketing	101	162	193	220	306
Bedding	0	4	30	41	67
Milking supplies	31	57	73	88	130
Cattle lease	0	0	0	0	23
Custom boarding	0	0	0	0	74
bST expense	0	0	0	0	39
Livestock professional fees	0	0	11	30	49
Other livestock expense	0	8	24	43	126
Fertilizer & lime	4	45	77	124	213
Seeds & plants	0	10	28	44	118
Spray/other crop expenses	0	2	15	34	68
Crop professional fees	0	0	0	2	62
Land, building, fence repair	10	29	38	73	171
Taxes	17	49	73	100	205
Real estate rent/lease	0	3	20	34	171
Insurance	26	38	48	71	151
Utilities	55	83	103	120	163
Interest	0	29	86	131	257
Other professional fees	0	1	7	13	43
Miscellaneous	4	13	18	24	38
Total Operating Expenses	$2,042	$2,504	$2,802	$2,941	$3,249
Expansion livestock	0	0	0	0	40
Extraordinary expense	0	0	0	0	49
Machinery depreciation	33	80	151	272	432
Building depreciation	5	25	63	108	223
Net Farm Income w/o Appreciation	$678	$320	$214	$-118	$-684

RECEIPTS AND EXPENSES PER CWT. OF MILK SOLD

27 Intensive Grazing Dairy Farms, 2009

Item	QUINTILE 1	2	3	4	5
Accrual Operating Receipts					
Milk	$14.97	$14.08	$13.63	$13.33	$12.96
Dairy cattle	3.27	1.59	1.15	0.78	-0.06
Dairy calves	0.52	0.21	0.10	0.02	-0.38
Other livestock	1.00	0.02	0.00	0.00	0.00
Crops	0.90	0.31	0.01	-0.23	-1.33
Miscellaneous receipts	2.71	2.14	1.86	1.63	1.14
Total Operating Receipts	$19.76	$17.83	$17.28	$16.25	$14.61
Accrual Operating Expenses					
Hired labor	$0.01	$0.37	$1.05	$1.73	$2.76
Dairy grain & concentrate	3.43	4.50	4.93	5.36	5.85
Dairy roughage	0.00	0.01	0.20	0.79	3.17
Nondairy feed	0.00	0.00	0.00	0.00	0.01
Professional nutritional services	0.00	0.00	0.00	0.00	0.00
Machinery hire/rent/lease	0.04	0.18	0.48	0.95	1.57
Mach. repair & farm vehicle exp.	0.47	0.69	0.95	1.26	1.86
Fuel, oil & grease	0.31	0.46	0.61	0.69	1.21
Replacement livestock	0.00	0.00	0.00	0.00	0.02
Breeding	0.09	0.18	0.25	0.36	0.46
Veterinary & medicine	0.16	0.29	0.44	0.55	0.74
Milk marketing	0.60	0.99	1.16	1.26	1.50
Bedding	0.00	0.03	0.16	0.21	0.37
Milking supplies	0.20	0.33	0.39	0.47	0.76
Cattle lease	0.00	0.00	0.00	0.00	0.13
Custom boarding	0.00	0.00	0.00	0.00	0.52
bST expense	0.00	0.00	0.00	0.00	0.19
Livestock professional fees	0.00	0.00	0.06	0.15	0.25
Other livestock expense	0.00	0.04	0.16	0.24	0.72
Fertilizer & lime	0.02	0.26	0.46	0.63	1.23
Seeds & plants	0.00	0.07	0.15	0.27	0.59
Spray/other crop expenses	0.00	0.01	0.08	0.20	0.37
Crop professional fees	0.00	0.00	0.00	0.01	0.36
Land, building, fence repair	0.06	0.17	0.22	0.37	1.05
Taxes	0.10	0.28	0.44	0.57	1.24
Real estate rent/lease	0.00	0.02	0.12	0.20	0.90
Insurance	0.14	0.21	0.29	0.40	1.00
Utilities	0.36	0.44	0.55	0.70	0.94
Interest	0.00	0.16	0.46	0.96	1.51
Other professional fees	0.00	0.01	0.04	0.08	0.22
Miscellaneous	0.02	0.07	0.09	0.15	0.26
Total Operating Expenses	$12.49	$14.07	$15.18	$16.09	$19.83
Expansion livestock	0.00	0.00	0.00	0.00	0.31
Extraordinary expense	0.00	0.00	0.00	0.00	0.27
Machinery depreciation	0.19	0.45	0.89	1.57	2.42
Building depreciation	0.02	0.14	0.34	0.69	1.28
Net Farm Income w/o Appreciation	$3.39	$1.89	$1.25	$-0.65	$-4.64

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

36 New York Dairy Farms, 2009

Animals Entering Herd	Average
Number calving in 2009 for first time	267
Animals purchased, percent[34]	3.9%
Animals raised by farm, percent[35]	96.1%
Current Heifer Inventory	
Raised on dairy, percent	86.4%
Raised by a custom grower, percent	13.5%

[34]Animals purchased are animals purchased from a different farm and were not the farm's genetics.
[35]Animals raised by farm are animals that were born on the farm and entered the herd, which includes animals raised by the farm or custom grower.

On the average farm, 267 animals calved for the first time in 2009. The breakdown of these animals for source was 3.9 percent purchased and 96.1 percent raised by the farm. Of the current heifer inventory, 86.4 percent were raised on the dairy and 13.5 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, 13 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 table. The table is divided into five 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 are included in market premiums. The fourth area looks at the expenses associated with marketing milk. The 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 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 five 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 43 reports the averages for these different areas.

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

AVERAGE[36] MILK INCOME AND MARKETING REPORT
13 Intensive Grazing Dairy Farms, 2009

	Pounds	Percent	Price/Pound	Total	$/Cwt of Milk
BASE FARM PRICE					
Butterfat	107,690	3.89	$ 1.29	$139,339	$ 5.03
Protein	86,927	3.14	$ 2.24	$194,865	$ 7.04
Solids	153,918	5.56	$ 0.07	$ 10,570	$ 0.38
Total Component Contribution					$12.45
PPD	2,770,262			$ 25,196	$ 0.91
Base Farm Price					$13.36
Premiums					
Quality				$ 3,699	$ 0.13
Volume				$ 7,770	$ 0.28
Market Premiums				$ 8,202	$ 0.30
Total Premiums					$ 0.71
BASE FARM PRICE + PREMIUM					$14.07
Deductions					
Promo				$ 4,147	$ 0.15
Hauling + Stop Charges				$17,833	$ 0.64
Market Fees & Coop Dues				$ 5,644	$ 0.20
Total Deductions					$ 1.00
BASE FARM PRICE + PREMIUMS - DEDUCTIONS					$13.07
Marketing Programs					
Futures Contracts, Forward Contracting, Etc.				$ 0.00	$ 0.00
Total Marketing Income					$ 0.00
Patronage Dividends				$ 6,436	$ 0.23
NET PRICE RECEIVED ON FARM, ALL SOURCES					**$13.30**
PPD - Hauling, $ per cwt.					$ 0.27
PPD - Hauling + Market Premiums, $ per cwt.					$ 0.57
Net Marketing Value (PPD + Total Premiums – Total Deductions), $ per cwt.					$ 0.62

[36]Each 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.

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 **S**pecific.
2. Goals should be **M**easurable.
3. Goals should be **A**chievable but challenging.
4. Goals should be **R**ewarding.
5. Goals should be **T**imed 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

Summarize Your Business Performance

The Farm Business Chart on page 39 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 17)

Accrual Receipts - (defined on page 18)

Annual Cash Flow Statement - (defined on page 26)

Appreciation - (defined on page 19)

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

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

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

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

Cash Flow Coverage Ratio - (defined on page 27)

Cash Paid - (defined on page 16)

Cash Receipts - (defined on page 18)

Change in Accounts Payable - (defined on page 17)

Change in Accounts Receivable - (defined on page 18)

Change in Inventory - (defined on page 18)

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 32)

Current Portion - (defined on page 22)

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 27)

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

Debt to Asset Ratios - (defined on page 24)

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 27.

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 21)

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 24)

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

Net Farm Income - (defined on page 19)

Net Farm Income from Operations Ratio – (defined on page 22)

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 33)

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

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

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

Owner/Operator Resources/cwt. - The total value of equity, management, and labor contributed to the farm from all owner/operators. This measure is calculated by adding the interest on equity capital to the value of labor and management for all owner/operators and dividing by the hundredweight produced during the year.

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 33)

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 22)

Return on Total Capital - (defined on page 22)

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 31)

Total Costs of Producing Milk - (defined on page 33)

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 $2,500 per month plus the value of operator(s) labor at $2,500 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.

INDEX

Page(s)

Accounts Payable 17,23
Accounts Receivable 18,23
Accrual Expenses 17,19
Accrual Receipts 18,19
Acreage 29
Advanced Government Receipts 22,23
Age 35
Amount Available for Debt Service 27
Annual Cash Flow Statement 26
Appreciation 19,25,33
Asset Turnover Ratio 34
Balance Sheet 23
Barn Type 16
Business Type 16
Capital Efficiency 34
Cash From Nonfarm Capital Used in the Business 26
Cash Flow Coverage Ratio 27
Cash Paid 16
Cash Receipts 18,26
Change in Accounts Payable 17
Change in Accounts Receivable 18
Change in Inventory 16,17
Change in Net Worth 25
Cost of Term Debt 24
Crop Expenses 17,30
Crop/Dairy Ratios 29
Culling Rate 32
Current Portion 22,23
Dairy (farm) 16
Dairy Cash-Crop (farm) 16
Debt Coverage Ratio 27
Debt per Cow 24
Debt to Asset Ratios 24
Depreciation 17,24
Depreciation Expense Ratio 34
Dry Matter 29
Education 35
Equity Capital 22
Expansion Livestock 17,26
Expenses 17
Farm Business Chart 39
Farm Debt Payments as Percent of Milk Sales 27
Farm Debt Payments Per Cow 27
Financial Lease 23

Page(s)

Income Statement 16
Inflows 26
Interest Expense Ratio 34
Labor & Mgmt. Income 21
Labor & Mgmt. Income Per Oper. 21
Labor Efficiency 35
Land Resources 29
Leverage Ratio 24
Liquidity 24
Lost Capital 24
Machinery Expenses 17,30
Milking Frequency 16
Milk Production 32
Milking System 16
Money Borrowed 26
Net Farm Income 19
Net Farm Income From Operations Ratio 22
Net Investment 24
Net Worth 23
Number of Cows 32
Operating Costs of Producing Milk 33
Operating Expense Ratio 34
Opportunity Cost 22
Other Livestock Expenses 17
Outflows 26
Part-Time Dairy (farm) 16
Percent Equity 24
Personal Withdrawals and Family Expenditures Including Nonfarm Debt Payments 26
Principal Payments 26
Profitability 18
Purchased Inputs Cost 33
Receipts 18
Record System 16
Repayment Analysis 27
Replacement Livestock 17
Retained Earnings 25
Return on Equity Capital 22
Return on Total Capital 22
Solvency 24
Stocking Rate 31
Total Costs of Producing Milk 33
Whole Farm Method 33
Worker Equivalent 34
Working Capital 24
Yields Per Acre 29

OTHER A.E.M. EXTENSION BULLETINS

EB No	Title	Fee (if applicable)	Author(s)
2010-09	Profiles of Successful Farm Transfers on Long Island		Staehr, A.
2010-08	Dairy Farm Business Summary, New York Small Herd Farms, 80 Cows or Fewer, 2009	($16.00)	Knoblauch, W., Putnam, L., Kiraly, M. and J. Karszes
2010-07	Dairy Farm Business Summary, Hudson and Central New York Region, 2009	($12.00)	Knoblauch, W., Putnam, L., Karszes, J., Buxton, S., Shoen, K., Hadcock, S., Kiraly, M., Hulle, L., Smith, R, Skellie, K., Conneman, G. and R. Overton
2010-06	Dairy Farm Business Summary, Northern NY Region, 2009	($12.00)	Knoblauch, W., Putnam, L., Karszes, J., Murray, P., Vokey, F., Prosper, J., Deming, A., Balbian, D., Buxton, S., Manning, J., Collins, B. and R. Overton
2010-05	Dairy Farm Business Summary, Western NY Region, 2009	($12.00)	Knoblauch, W., Putnam, L., Karszes, J., Hanchar, J., Grace, J., Carlberg, V., Petzen, J., Welch, D., Ames, M., Overton, R. and K. Skellie
2010-04	Dairy Farm Business Summary, New York Large Herd Farms, 300 Cows or Larger, 2009	($16.00)	Karszes, J., Knoblauch, W. and L. Putnam
2010-03	The Effectiveness of Farm-to-Chef Marketing of Local Foods: an Empirical Assessment from Columbia County, NY"		Schmit, T., Lucke, A. and S. Hadcock
2010-02	Business Planning for the Agriculture Sector: A guide to business plan development for Start-up to Mid-Size Operations	($12.00)	Perry, J. and R. Overton
2010-01	When to Exit Dairy Farming: The Value of Waiting		Tauer, L. and J. Dressler
2009-22	Marketing the Unique Story of Your Farm Business for Success		Schmit, T., Hulcoop, L. and R. Weybright
2009-21	Dairy Farm Business Summary, New York Dairy Farm Renters, 2008	($16.00)	Knoblauch, W. and L. Putnam
2009-20	New York Economic Handbook 2010	($10.00)	Extension Staff
2009-19	Fruit Farm Business Summary, Lake Ontario Region New York, 2008		White, G., DeMaree, A. and J. Neyhard

Paper copies are being replaced by electronic Portable Document Files (PDFs). To request PDFs of AEM publications, write to (be sure to include your e-mail address): Publications, Department of Applied Economics and Management, Warren Hall, Cornell University, Ithaca, NY 14853-7801. If a fee is indicated, please include a check or money order made payable to Cornell University for the amount of your purchase. Visit our Web site (*http:/ /aem.cornell.edu/outreach/materials.htm)* for a more complete list of recent bulletins.