DAIRY FARM BUSINESS SUMMARY

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INTENSIVE GRAZING FARMS NEW YORK 1996

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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 (DFBS). Seventy-six farms indicated that they grazed dairy cows at least three months and moved to a fresh paddock at least every three days. Operators of these 76 farms were asked to complete a grazing practices survey. Forty-three of the farms did complete it. The investigators chose to eliminate from the study those farms which owned no real estate and farms where less than 30 percent of the forage consumed by the cows during the grazing season was from grazing. Of the 59 remaining farms, surveys were obtained from 41. The investigators had special interest in practices used on farms with above average profitability. Therefore the study centered on 30 farms which were not first year grazers and on which at least 40 percent of forage consumed during the grazing season was grazed. These 30 farms were divided on the basis of net farm income (without appreciation) per cow above and below $390 which was the average for all farms participating in DFBS. Twenty-one farms with net farm income per cow above $390 are in the "More Profitable" group and nine farms with net farm income per cow below $390 comprise the "Less Profitable" group.

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 of this publication reports data from the grazing practices survey. A comparison of intensive grazing farms with non-grazing farms is included on page 5. The second section, Case Studies, describes two New York grazing farms. The next section summarizes grazing farms that had more than 100 cows.

The summary and analysis portion of this report follows the same general format as in the 1996 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. A DFBS Data Check-in Form can be used by non-DFBS participants to summarize their businesses.

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.

INTENSIVE GRAZING SURVEY SUMMARY

From the survey data of the 30 selected grazing farms, analysis of average production levels and profitability measures are shown as follows:

SELECTED PRODUCTION AND PROFITABILITY MEASURES
Intensive Grazing Dairy Farms, 1996

	21 More Profitable Dairy Farms	9 Less Profitable Dairy Farms
Pounds milk sold per cow	18,402	13,875
Net farm income/cow without appreciation	$729	$-141
Operating cost of producing milk per cwt.	$9.74	$13.68

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

GRAZING PRACTICES
Intensive Grazing Dairy Farms, 1996

	21 More Profitable Dairy Farms	9 Less Profitable Dairy Farms
Average percent forage from pasture	65	81
Average length of grazing season	183	184
Average pounds grain fed per cow per day	17.4	12.6
Average percent crude protein	19	15
Average time out after a.m. milking	8:00am	8:30am
Percent farms grazing at night	95	55
Percent farms using fertilizer	48	33
Average pounds fertilizer used per acre	110	58
Percent farms using lime	38	44
Percent farms stating weeds were problem	39	56
Average percent pasture reseeded last 10 years	43	28
Average percent pasture previously harvested	64	58
Average percent pasture harvested this year	39	20
Average number times pasture clipped	1.6	1
Percent farms providing shade	31	22
Most common pasture species		
First	orchard grass	native grass mix
Second	ladino clover	native clover, timothy, weeds
Third	native clover	ladino clover
Percent farms with water in every paddock	67	22
Average distance cows had to walk for water		
feet when closest to barn	256	304
feet when furthest from barn	687	1,825

Providing water in every paddock, rotating to a new paddock after each milking, and supplementing with corn silage and grain seemed to be practices that led to higher production per cow and greater profitability within the "more profitable" group. Some of the "less profitable" farms used these same practices. The tables below compare the more profitable group to the less profitable group and tend to confirm that those practices lead to higher profitability (or less loss). Successful managers of grazing farms need all of the skills for managing the herd in the barn during winter in addition to grazing management skills.

Water Availability

Study of the financial data to determine effect of water in every paddock on farm profitability shown above was further analyzed. The data from the high profitability group in the table below shows the importance of water availability, in terms of maximizing milk production and net farm income or minimizing operating costs, especially purchased grain and concentrates.

WATER AVAILABILITY
Intensive Grazing Farms, 1996

	21 More Profitable Dairy Farms		9 Less Profitable Dairy Farms	
	Water in Every Paddock?		Water in Every Paddock?	
	Yes (14)*	No (7)	Yes (2)	No (7)
Pounds milk sold per cow	19,111	16,404	13,619	13,599
Net farm income per cow without appreciation	$828	$588	$30	$-174
Purchased grain cost per cwt.	$3.76	$4.77	$4.66	$4.84
Operating cost of producing milk per cwt.	$9.41	$9.61	$12.74	$14.10

*Number of responses to survey question.

Supplemental Feeding

The table at the bottom of page 2 shows that the more profitable operations have a much lower percent forage coming from pasture than the less profitable operations. This demonstrates the importance of sufficient high quality supplemental forage. The table below compares milk production and net farm income on farms feeding corn silage and other forages. The three less profitable farms which fed corn silage had high costs of production per ton of dry matter. See the table, Crop Related Accrual Expenses, on page 19.

SUPPLEMENTAL FEEDING
Intensive Grazing Farms, 1996

	21 More Profitable Dairy Farms		9 Less Profitable Dairy Farms	
	Fed Any Corn Silage* (11)**	Fed Non-Corn Silage (10)	Fed Any Corn Silage (3)	Fed Non-Corn Silage (4)
Percent forage from pasture	56%	75%	70%	87%
Pounds milk sold per cow	19,160	17,161	13,388	13,711
Net farm income per cow without appreciation	$810	$678	$-197	$-95
Pounds grain fed per cow per day	18	16	12	12

*Any Corn Silage is either corn silage alone or a mix with baleage, hay, or hay crop silage.
**Number of responses to survey question.

Frequency of Rotation

In the more profitable group of grazers, 12 farmers rotated cows into fresh paddock once per day and 7 rotated cows into fresh paddocks after each milking. The table below compares rotation of cows onto a fresh paddock after each milking to high milk production and net farm income.

ROTATION FREQUENCY
Intensive Grazing Farms, 1996

	21 More Profitable Dairy Farms		9 Less Profitable Dairy Farms	
	Rotation		Rotation	
	After Each Milking (7)	Once a Day (12)	After Each Milking (4)	Once a Day (3)
Pounds milk sold per cow	20,918	16,921	14,216	12,928
Net farm income per cow w/o appreciation	$972	$630	$-86	$-358

Additional Notes on Survey Results

- All six of the more profitable farms that indicated problems with weeds stated the weeds were clipped regularly or spot-sprayed.
- The importance of feeding grain is shown in the table on page 2: the more profitable group fed 17.4 pounds of grain per cow per day and the less profitable group fed 12.6 pounds per cow per day. The most common grain form was mash, followed by TMR (total mixed ration).
- The corn silage feeders in the more profitable group fed a 21 percent crude protein concentrate and those in the less profitable group fed a 16 percent crude protein concentrate.
- Smooth steel high tensile wire was most commonly used for perimeter and lane fences while polywire was most commonly used for internal fences.
- The more profitable farms indicated that on the whole there were fewer health problems with grazing than confinement housing.
  - Problems with injuries, mastitis, calving, and feet and leg problems decreased for the majority of farmers.
  - Problems with flies and parasites increased for the majority of farmers.
  - Problems with heat detection and breedings per conception increased for some farmers and decreased for other about equally.

Farmers' Comments from the Survey

- "Flies - under control if treated."
- "Less time spent with the cows, lower feed costs, lower production, more variation."
- "Dry matter intake - don't know the amount and constantly changing."
- "Heat - more cows are in the barn away from the heat; more want to stay there."
- "Super intensive management is needed."
- "Satisfaction would be higher if pasture forages were more suitable for grazing."
- "Forage was harvested at a higher quality while pasturing versus mechanical."
- "Went through the rotation every 13 days."
- "Less health problems - a real joy!"
- "Still need some forage equipment as season is only half of the year."
- "We think cows come along better post-calving while on pasture except if very hot."

INTENSIVE GRAZING FARMS VS. NON-GRAZING FARMS
New York State Dairy Farms, 1996

Item	All Intensive Grazing Farms	Non-Grazing Farms*	Profitable Grazing Farms**	Profitable Non-Grazing Farms***
Number of farms	59	97	21	52
Business Size & Production				
Number of cows	78	75	79	75
Number of heifers	60	58	63	60
Milk sold, lbs.	1,349,129	1,323,630	1,446,729	1,370,251
Milk sold/cow, lbs.	17,270	17,547	18,402	18,364
Milk plant test, % butterfat	3.66%	3.72%	3.67%	3.72%
Tillable acres, total	255	240	239	250
Hay crop, tons DM/acre	2.5	2.4	2.8	2.6
Corn silage, tons/acre	13.9	14.0	15.9	14.5
Forage DM/cow, tons	6.6	8.0	6.0	8.2
Labor & Capital Efficiency				
Worker equivalent	2.70	2.53	2.59	2.43
Milk sold/worker, lbs.	499,677	523,174	558,583	563,889
Cows/worker	29	30	31	31
Farm capital/worker	$197,042	$217,660	$201,080	$224,573
Farm capital/cow	$6,821	$7,342	$6,592	$7,276
Farm capital/cwt. milk	$39	$42	$36	$40
Milk Production Costs & Returns				
Selected costs/cwt.:				
Hired labor	$1.39	$0.94	$1.18	$0.76
Grain & concentrate	$4.41	$4.75	$4.12	$4.24
Purchased roughage	$0.21	$0.24	$0.21	$0.09
Replacements purchased	$0.15	$0.25	$0.08	$0.08
Vet & medicine	$0.32	$0.35	$0.33	$0.33
Milk marketing	$0.58	$0.73	$0.55	$0.70
Other dairy expenses	$0.95	$1.06	$0.88	$0.95
Operating cost/cwt.	$11.29	$11.84	$9.74	$9.95
Total labor cost/cwt.	$3.73	$3.30	$3.34	$3.06
Operator resources/cwt.	$3.51	$3.47	$3.35	$3.61
Total cost/cwt.	$16.33	$17.05	$14.51	$15.24
Average farm price/cwt.	$14.78	$15.02	$14.75	$15.02
Return over total costs/cwt.	$-1.55	$-2.03	$0.24	$-0.22
Related Cost Factors				
Hired labor/cow	$240	$166	$217	$140
Total labor/cow	$646	$582	$612	$560
Purchased dairy feed/cow	$798	$880	$792	$791
Purchased grain & concentrate as % of milk receipts	30%	32%	28%	28%
Vet & medicine/cow	$56	$62	$60	$60
Machinery costs/cow	$432	$497	$424	$507
Feed & crop exp./cwt.	$5.48	$5.82	$5.11	$5.26
Profitability Analysis				
Net farm income (without appreciation)	$31,876	$24,607	$57,583	$51,900
Net farm income per cow (w/o apprec.)	$409	$328	$729	$692
Labor & management income/operator	$6,551	$-53	$28,316	$19,119
Rates of return on:				
Equity capital with appreciation	1.2%	-0.2%	8.1%	5.9%
All capital with appreciation	3.3%	2.2%	8.0%	6.3%

*Farms with similar herd size, production per cow, and location as the 59 rotational grazing farms.

**Farms with net farm income/cow without appreciation greater than the preliminary state average of $390, had been grazing at least two years, and forage from pasture at least 40 percent.

***Farms with similar herd size and production per cow as the 21 profitable grazing farms and net farm income/cow without appreciation greater than $390.

CASE STUDIES

Howland Farm

Rob and Darlene Howland of Candor adopted intensive grazing in 1993 mainly to change the cropping system which had brought them much frustration in previous years. They were also attracted to the lower costs and increased free time that grazing advocates were promoting. With guidance from both Natural Resources Conservation Services and Farm Service Agency staff and what they learned from a *Pro-Dairy* Grazing course, a grazing plan was developed that included a fencing and watering system. The Howlands have learned a great deal since 1993 and have maintained high milk production at 22,911 pounds sold per cow in 1996.

Several changes and purchases have been made since switching to grazing. Rob stopped growing corn and alfalfa on wet land, where it had been so troublesome for eight out of the ten years he'd been there. In these eight years, numerous problems occurred, for example, the corn was planted late, or it was too muddy in the fall, or hay was being harvested too late resulting in poor quality. There simply wasn't time to tend to these extra crop acres and get barn chores done on time. Sixteen acres of the corn land was reseeded with alfalfa and timothy and ten acres was reseeded with orchardgrass. These 26 acres plus 29 acres reseeded to orchardgrass and Ladino Clover were added to 100 acres of native pasture. This formed the 155 acres on which 80 milking Holsteins and additional dry cows and heifers are grazed today.

A used four-wheeler was purchased after the first year of grazing when it was obvious how essential it was for retrieving cows, fixing fence, and dealing with water out in the pasture. Three small feeders were traded for a feeder with headlocks. This facilitated treating dry cows and heifers for flies while out in the pasture instead of spending time catching them and tying them up in the barn.

One other change that was made was buying a round baler and wrapper and selling the square bale equipment. Although they weren't bought specifically for grazing, Rob says "I wouldn't do without the round baler in terms of managing the pasture at the proper height." If the pasture is getting too tall, he will go in and take enough bales of baleage to keep ahead of the grass. He doesn't have to worry about the sun shining long enough to make dry hay or about uncovering the silo to add just a small amount of haylage. Although the equipment is efficient, it isn't cheap. In 1996 machinery costs were $544 per cow compared to $432 per cow for the 59 grazers.

An extensive watering system was developed that is capable of providing water at any point in the 155 acres of pasture. The first type consists of gravity flowing water out of three rebuilt ponds and one new pond, with the water piped from the pond through a dike to permanent tanks in the pasture. A pump pushes water from one pond over a knoll to moveable tubs. The second type consists of a well at the top of a hill with black plastic pipe running above ground along the fenceline with outlets to water tubs in the paddocks. The third type runs from a seasonal creek with a 1,300 gallon dry well buried below the creek bed.

Smooth steel high tensile wire was added to the existing barbed wire perimeter fence to enclose all paddocks. Laneways were made with high tensile wire. All internal fences are made with moveable hot tape. Very little pasture land is close to the barn and all is uphill from the barn. For some paddocks cows must walk ¼ mile up a steep hill. More paddocks, even further up and down more hills, are used for dry cows and heifers.

A complex feeding program which supplements the pasture forage enables the herd's high milk production. Milking is at 6:30 a.m. and 6:30 p.m., with each milking taking about two and a half hours. Thirty pounds of corn silage per cow per day is fed which is ready in the manger before the cows come in. When milking begins, an automated around-the-barn feeder which reads the cow number and feeds out programmed amounts of grain to each cow according to production is turned on. This makes two trips around the barn during each milking, completing the second when the last cow in the barn is being milked. The dry matter intake is balanced with 6 to 8 pounds of baleage per cow per day in May and 15 pounds from mid-June on. If pasture is short and dry due to drought, even more baleage is fed and the cows stay in the barn. This feeding program has been successful at achieving high milk production, but is expensive. In 1996 thirty-two percent of the milk receipts go to purchased grain and concentrates, while feed and crop expense is $5.66 per cwt.

Rob has worked diligently on improving the soil fertility and the quality of the pastures since switching to grazing. Before grazing, 100 acres in native pasture hadn't been limed or fertilized in at least 17 years, although it had seen some manure. In 1993, soil tests showed that pH was low, as was phosphorous and nitrogen, while potash was acceptable. Lime has been applied twice since that first test, at a rate of 25 to 30 tons per year for the 155 acres. Every year, 125 pounds of urea and 75 pounds of mono-ammonium phosphate are applied to all 155 acres of pasture. Soil testing every three years will continue and the same fertilizer program will be followed until the phosphorous levels are optimal. pH levels will be

maintained at 6.0 to 6.2. Twenty percent of the pastures are now reseeded with 70 percent orchard grass and 30 percent ladino clover, while 80 percent are native mixes.

The various challenges of grazing are dealt with as they come. A pour-on insecticide has brought great success in controlling flies. On especially hot days, the cows are brought in early and fed stored forage. The herd has been changed from fall-freshening to year-round, which alleviates the pressure of seeing a cow in heat and getting her bred immediately.

Rob has yet to see the "increased free time" that he looked forward to in 1993. He has one full-time employee and help from his wife and children and still finds himself working 15 hour days. He sees the work that comes with grazing different, but not any less. It is work, like bedding the cows down, that is more flexible and can be left for later if he is busy with hay. It is also work that is much safer for his children to perform than the more conventional work like spreading manure or operating large machinery.

With sound management and attention to detail, the Howlands have been very successful at grazing with high milk production. Despite higher than anticipated costs, they have an above average net farm income per cow of $755 without appreciation.

Battisti Farm

Michael Battisti has been grazing Holsteins in Madison County for five years. He made the switch to rotational grazing for a number of reasons. His primary concern was to reduce his high cull rate. With full confinement, breeding problems and teat injuries were numerous. Machinery costs were also very high. Since he began grazing, he has cut his machinery costs in half to the 1996 figure of $697 per cow. He has eliminated some tillage equipment and a harvestor silo as he no longer grows corn. Problems with breeding and injuries have dropped tremendously, as has his cull rate. Mike has improved his quality of life a great deal, mainly in terms of increased free time, with less time spent in the barn and in the hay field. Meanwhile milk production has remained high at 20,302 pounds per cow. This success was achieved while receiving nearly 100 percent of the herd's forage from pasture during the grazing season.

After making the switch to rotational grazing, a flatbarn parlor was built which enables close to eighty cows to be milked during the grazing season when the cows remain outside. Come November, cows are sold or culled in order to drop to the 63 cows for which stalls are available in the conventional barn. About 16 pounds per cow per day of a grain mixture composed of 80 percent high moisture corn with a protein supplement are fed before milking. The feeding program is kept simple and efficient by feeding all of the cows the same amount of grain. Mike's 1996 purchased grain and concentrate cost as a percentage of the milk receipts was 22 percent, where the average for the 59 grazers was 30 percent. Furthermore, his feed and crop expense was $4.24 per hundredweight compared to the $5.48 per cwt. for the 56 grazers.

The first year that the herd was rotationally grazed, the cows were still being fed some total mixed ration in the barn. Thus, when they were sent to pasture they were not grazing well. Mike realized that he was doing twice the work with both TMR feeding and moving cows between paddocks and not seeing any benefits. The following year, feeding in the barn was eliminated and a great improvement in the cows' grazing was seen. It took about a year to train the cows, especially the older cows who were accustomed to confinement. The heifers are grown on pasture, thus are well-trained by the time they freshen.

The first cows are milked between 4:15 a.m. and 4:30 a.m. and are out to pasture between 5:00 and 6:30 a.m. This gives them a good three or four hours of grazing before it gets hot. On extremely hot days in order to keep the dry matter intake high, fence will be moved often to provide the cows with fresh pasture. If they still aren't eating well, they are brought in at 3:00 in the afternoon to milk instead of the usual 4:00. This enables them to return to the pasture sooner when it is cooler. Leaving the cows in the barn isn't a consideration as there isn't adequate room and the stalls are small causing too many injuries.

The entire farm is fenced with smooth steel high tensile wire, which allows the cows, heifers, and weaned calves to graze all 220 acres of pasture. "Tumble wheels" are used, which facilitate moving interior fence, especially while the cows are grazing. Although the tumble wheels are costly, Mike feels they are definitely worthwhile for saving time and increasing dry matter intake.

Pastures have been improved through sound management over the years. Older pastures have been frost-seeded or broadcasted with seed. The majority of the pastures contain native grasses and white clover and some orchard grass and ladino clover. Mike likes the orchard grass the most for its high productivity and persistence. He doesn't bother with alfalfa due to its requirement of a long resting period between grazing.

The soils are good and lime is applied to maintain optimal pH. Mike's manure spreader sees minimal use throughout the grazing season as the cows are returning the manure to the pasture themselves. Liquid manure (from winter confinement) is spread from a slurry system after first cutting on the paddocks that see the least grazing time. Mike believes in taking care of the plant as well as the cow. The pastures are kept at a maximum of six to eight inches high. If a paddock is stressed and not ready for the cows, baleage is fed. If the pasture has gotten away from the cows, namely in the spring, it will either be clipped or harvested as haylage or baleage. Each paddock is usually clipped once or twice per year. In order to maintain cleanliness in the pastures, providing shade where cows would camp for long periods of time on hot days is avoided.

Water is provided in every paddock from a number of sources. The paddocks closest to the barn on that side of the road are supplied by the barn well through three-quarter inch black plastic. The more distant paddocks on the same side of the road and the majority of those on the opposite side are also supplied by the barn well through buried one and a half inch black plastic for increased flow of water. The paddocks that are too distant receive water from springs that fill a 1,000 gallon buried tank which then fills a stock tank. Water is hauled in wagons to other paddocks that are high on a hill. Most of the paddocks have 50 gallon drums cut in half as water tubs.

Mike enjoys the labor efficiency of the grazing system. He has a four-wheeler which he says is one of the most important things to have on a grazing farm. He can send one of his four children to retrieve the cows for milking while he lays the grain out in front of the stalls. Once the cows are in the barn, milking is basically a one-man job. Grain is placed in front of the six stalls in the flat-barn parlor only to encourage the first cows to come over to the parlor. After that, no grain is fed in the parlor in order to prevent cows that have been milked from waiting around for more grain. The cows go straight from the flat-barn parlor out of the barn and back to the pasture without a problem.

Mike would like to become more seasonal and possibly even not milk for a few months of the year. Heifers aren't bred after March until July 1 through November 1 when a Jersey bull is put in the pasture. This breeding schedule is maintained so that the heifers will calve during the grazing season and utilize the flat-barn parlor. After switching to grazing, using the bull was easier to breed the heifers when they were in remote pastures.

Environmental problems have diminished tremendously since starting rotational grazing. With the entire farm in pasture, erosion is no longer an issue and the rate of fertilizer application has decreased dramatically. Mike has worked hard to make grazing successful on his farm and he definitely enjoys the benefits. In 1996 his net farm income without appreciation per cow was above the state average of $390 at $590. He feels that if he could do it with all the obstacles on his farm, anyone can do it.

SUMMARY OF GRAZING FARMS WITH OVER 100 COWS

There were seven farms with more than 100 cows that indicated on the 1996 Dairy Farm Business Summary that they were grazers. Surveys were collected from five of these seven large grazing farms. The table on the following page compares these five grazing farms with 35 farms of similar size and location.

Grazing Practices Information Collected From the Surveys Follows:

- The five farms received an average of 48 percent of the forage from pasture during the grazing season.
- The average grazing length was 175 days.
- Four out of the five farms provided water in every paddock.
- Four out of five farms rotated cows after each milking; the fifth rotated once per day.
- Four out of five farms supplemented with corn silage alone or with hay and haylage.
- All farms fed a total mixed ration and an average of 18.4 pounds of grain per cow per day.
- The five farms reseeded an average of 74 percent of the pasture.
- Three out of the five farms applied an average of 124 pounds of fertilizer per acre and 40 percent of the farms applied lime.
- Generally, problems with flies, heat detection, and breedings per conception were more severe under grazing. Problems with mastitis and injuries were less severe and feet and leg problems went both ways.
- Orchardgrass and ladino clover were the most common pasture species.

INTENSIVE GRAZING FARMS WITH MORE THAN 100 COWS VS. NON-GRAZING FARMS OF SIMILAR SIZE, 1996

Item	Grazing Farms >100 Cows	Non-Grazing Farms
Number of farms	5	35
Business Size & Production		
Number of cows	156	155
Number of heifers	137	107
Milk sold, lbs.	2,875,735	3,005,796
Milk sold/cow, lbs.	18,387	19,432
Milk plant test, % butterfat	3.66%	3.71%
Tillable acres, total	479	387
Hay crop, tons DM/acre	3.4	3.0
Corn silage, tons/acre	17.0	16.6
Forage DM/cow, tons	6.4	7.6
Labor & Capital Effeciency		
Worker equivalent	4.43	4.63
Milk sold/worker, lbs.	649,150	649,200
Cows/worker	35	33
Farm capital/worker	$216,864	$212,557
Farm capital/cow	$6,158	$6,349
Farm capital/cwt. milk	$33	$33
Milk Production Costs & Returns		
Selected costs/cwt.:		
Hired labor	$1.78	$1.46
Grain & concentrate	4.11	4.56
Purchased roughage	0.02	0.31
Replacements purchased	0.08	0.44
Vet & medicine	0.45	0.39
Milk marketing	0.46	0.58
Other dairy expenses	0.92	1.03
Operating cost/cwt.	10.82	12.17
Total labor cost/cwt.	2.88	2.83
Operator resources/cwt.	2.68	2.56
Total cost/cwt.	14.30	16.02
Average farm price/cwt.	15.03	15.00
Return over total costs/cwt.	0.73	-1.02
Related Cost Factors		
Hired labor/cow	$329	$283
Total labor/cow	531	549
Purchased dairy feed/cow	760	885
Purchased grain & concentrate as % of milk receipts	27%	30%
Vet & medicine/cow	$84	$75
Machinery costs/cow	$397	$481
Feed & crop exp./cwt.	$5.17	$5.61
Profitability Analysis		
Net farm income (without appreciation)	$100,500	$49,635
Net farm income/cow (without appreciation)	$644	$320
Labor & management income/operator	$45,734	$9,314
Rates of return on:		
Equity capital with appreciation	8.6%	2.1%
All capital with appreciation	8.5%	4.6%

SUMMARY AND ANALYSIS OF THE FARM BUSINESS

Business Characteristics

Planning the optimal management strategies is a crucial component of operating a successful farm. Various combinations of farm resources, enterprises, business arrangements, and management techniques are used by the dairy farmers in this region. The following table shows important farm business characteristics and the number of farms with each characteristic.

BUSINESS CHARACTERISTICS
59 Intensive Grazing Dairy Farms, 1996

Type of Farm	Number
Dairy	59
Part-time dairy	0
Dairy cash-crop	0

Type of Ownership	Number
Owner	59
Renter	0

Type of Business	Number
Sole Proprietorship	46
Partnership	12
Corporation	1

Type of Barn	Number
Stanchion or Tie-Stall	42
Freestall	13
Combination	4

Milking Frequency	Number
2 times per day	55
3 times per day	1
Other	3

Milking System	Number
Bucket & carry	0
Dumping station	3
Pipeline	43
Herringbone parlor	9
Other parlor	4

Production Records	Number
DHIC	35
Owner-Sampler	7
Other	7
None	10

bST Usage	Number
Used on <25% of herd	5
Used on 25-75% of herd	12
Used on >75% of herd	2
Stopped using in 1996	0
Not used in 1996	40

Business Record System	Number
Account Book	21
Agrifax (mail-in only)	3
On-farm computer	31
Other	4

The averages used in this report were compiled using data from all the participating dairy farms in this region unless noted otherwise. There are full-time dairy farms, part-time farms, dairy cash-crop 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 1996.

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

59 Intensive Grazing Dairy Farms, 1996

Expense Item	Cash Paid	-	Change in Inventory or Prepaid Expense	+	Change in Accounts Payable	=	Accrual Expenses
Hired Labor	$ 18,953		$ 6	<<	$ -235		$ 18,711
Feed							
Dairy grain & concentrate	61,107		627		-1,024		59,456
Dairy roughage	3,144		83		-271		2,789
Nondairy	209		0		0		209
Machinery							
Machinery hire, rent & lease	3,469		0	<<	-118		3,351
Machinery repairs & farm vehicle exp.	12,113		45		263		12,331
Fuel, oil & grease	4,366		111		82		4,338
Livestock							
Replacement livestock	2,067		0	<<	-51		2,017
Breeding	2,479		-10		54		2,544
Veterinary & medicine	4,387		29		-16		4,341
Milk marketing	7,888		0	<<	-3		7,885
Bedding	1,035		63		-11		962
Milking supplies	4,930		22		121		5,029
Cattle lease & rent	10		0	<<	0		10
Custom boarding	181		0	<<	0		181
Other livestock expense	4,089		-7		30		4,126
Crops							
Fertilizer & lime	5,089		235		-41		4,813
Seeds & plants	3,474		167		-80		3,227
Spray, other crop expense	3,686		6		-6		3,674
Real Estate							
Land, building & fence repair	3,903		17		32		3,919
Taxes	5,346		52	<<	161		5,455
Rent & lease	3,299		0	<<	-347		2,952
Other							
Insurance	3,883		0	<<	-44		3,840
Utilities (farm share)	6,424		0	<<	-24		6,400
Interest paid	13,495		0	<<	-1		13,494
Miscellaneous	2,511		-27		25		2,563
Total Operating	$181,538		$ 1,420		$ -1,502		$ 178,616
Expansion livestock	789		0	<<			789
Machinery depreciation							8,998
Building depreciation							6,235
TOTAL ACCRUAL EXPENSES							$ 194,638

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 1996 but not paid for. A decrease is subtracted because it represents payment for resources used before 1996.

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

59 Intensive Grazing Dairy Farms, 1996

Receipt Item	Cash Receipts	+	Change in Inventory	+	Change in Accounts Receivable	=	Accrual Receipts
Milk sales	$ 199,795				$ -438		$ 199,358
Dairy cattle	7,480		$ 3,977		0		11,457
Dairy calves	1,372				0		1,372
Other livestock	1,771		171		0		1,942
Crops	2,345		2,506		209		5,060
Government receipts	4,157		45 *		25		4,227
Custom machine work	671				13		685
Gas tax refund	129				-2		127
Other	2,405				-3		2,402
Less nonfarm noncash capital**		(-)	115 **			(-)	115
Total Receipts	$ 220,126		$ 6,584		$ -196		$ 226,514

*Change in advanced government receipts.

**Gifts or inheritances of cattle or crops included in inventory.

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

Changes in inventory of assets produced by the business are calculated by subtracting beginning of year values from end of year values excluding appreciation. Increases in livestock inventory caused by herd growth and/or quality are added, and decreases caused by herd reduction and/or quality are subtracted. Changes in inventories of crops grown are also included. An increase in advanced government receipts is subtracted from cash income because it represents income received in 1996 for the 1997 crop year in excess of funds earned for 1996. Likewise, a decrease is added to cash government receipts because it represents funds earned for 1996 but received in 1995.

Changes in accounts receivable are calculated by subtracting beginning year balances from end year balances. Payments in January for milk produced in December 1996 compared to January 1996 payments for milk produced in 1995 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* 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.

* 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.

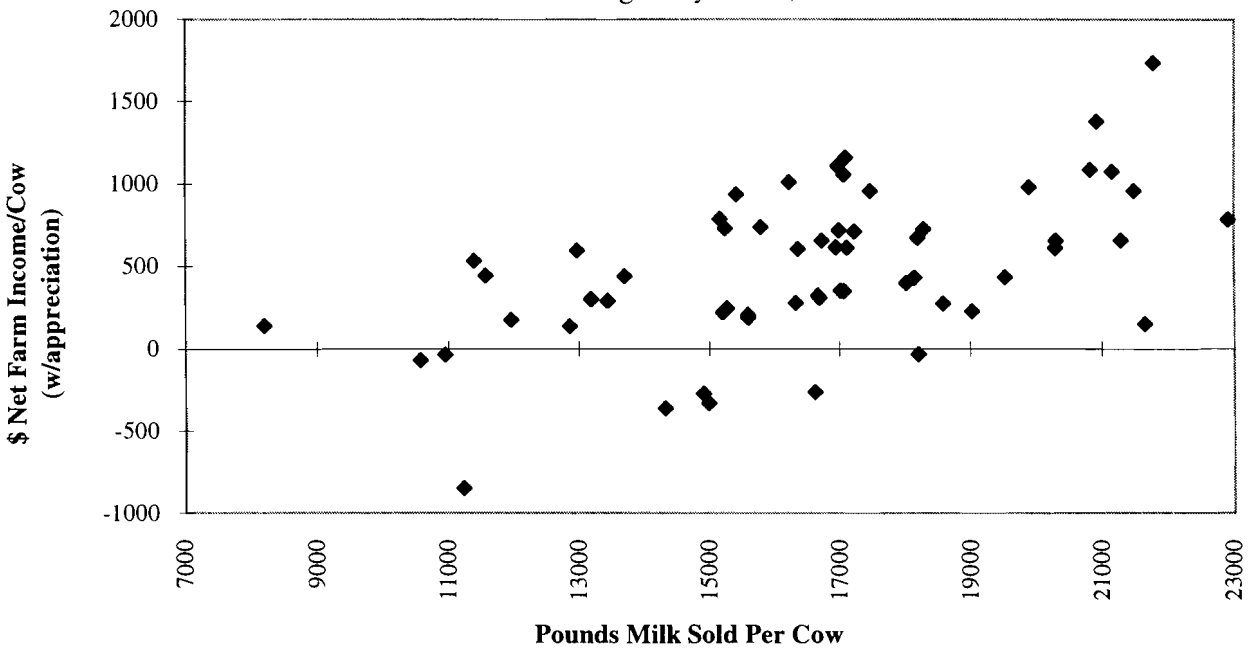
Net farm income is computed both with and without appreciation. Appreciation represents the change in values caused by annual changes in prices of livestock, machinery, real estate inventory, and stocks and certificates (other than Farm Credit). Appreciation is a major factor contributing to changes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

NET FARM INCOME
Intensive Grazing Dairy Farms, 1996

Item	59 New York Dairy Farms	21 More Profitable Farms	9 Less Profitable Farms
Total accrual receipts	$ 226,514	$ 248,705	$ 99,662
Appreciation: Livestock	910	1,607	587
Machinery	1,963	1,301	2,120
Real Estate	4,380	4,345	4,943
Other Stock & Certificates	124	-10	-61
Total Including Appreciation	$ 233,891	$ 255,948	$ 107,251
Total accrual expenses	- 194,638	- 191,122	- 105,466
Net Farm Income (with appreciation)	$ 39,253	$ 64,826	$ 1,785
Net Farm Income Per Cow (with appreciation)	$ 503	$ 821	$ 40
Net Farm Income (without appreciation)	$ 31,876	$ 57,583	$ -5,804
Net Farm Income Per Cow (without appreciation)	$ 409	$ 729	$ -129

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

NET FARM INCOME PER COW AND MILK PER COW
59 Intensive Grazing Dairy Farms, 1996



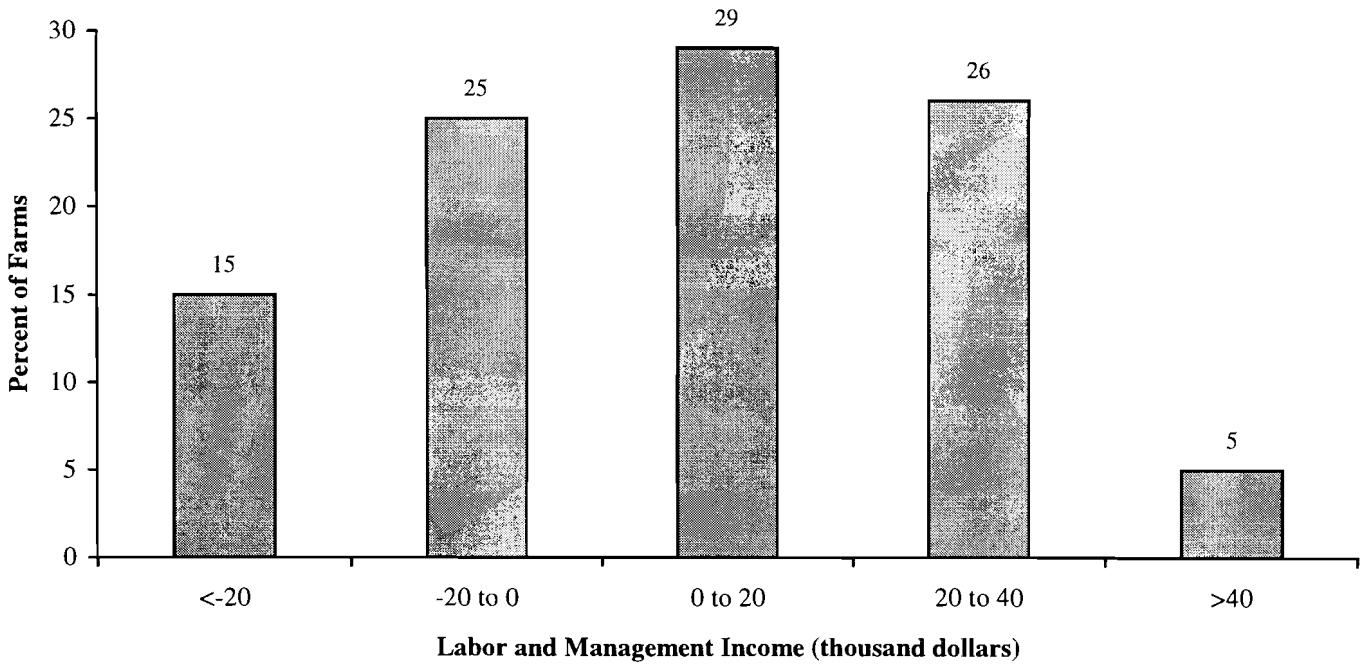
Labor and management income is the return which farm operators receive for their labor and management used in the farm business. Appreciation is not included as part of the return to labor and management because it results from ownership of assets rather than management of the farm business. Labor and management income is calculated by deducting a charge for family labor unpaid and the opportunity cost of using equity capital, at a real interest rate of five percent, from net farm income excluding appreciation. The interest charge of five percent reflects the long-term average rate of return above inflation that a farmer might expect to earn in comparable risk investments.

LABOR AND MANAGEMENT INCOME
Intensive Grazing Dairy Farms, 1996

Item	59 New York Dairy Farms	21 More Profitable Farms	9 Less Profitable Farms
Net farm income without appreciation	$ 31,876	$ 57,583	$ -5,804
Family labor unpaid @ $1,500 per month	- 5,400	- 5,550	- 4,500
Interest on average equity capital @ 5% real rate	- 17,697	- 17,204	- 7,658
Labor & Management Income per farm	$ 8,779	$ 34,829	$ -17,962
Labor & Management Income per Operator/Manager	$ 6,551	$ 28,316	$ -14,370

Labor and management income per operator averaged $6,551 on these 59 farms in 1996. The range in labor and management income per operator was from about $-55,000 to more than $100,000. Returns to labor and management were negative on 40 percent of the farms. Labor and management income per operator was between $0 and $40,000 on 55 percent of the farms while 5 percent showed labor and management incomes of $40,000 or more per operator.

DISTRIBUTION OF LABOR & MANAGEMENT INCOMES PER OPERATOR
59 Intensive Grazing Dairy Farms, 1996



Return on equity capital measures the net return remaining for the farmer's equity or owned capital after a charge has been made for the owner-operator's labor and management. The earnings or amount of net farm income allocated to labor and management is the opportunity cost of operators' labor and management estimated by the cooperators. Return on equity capital is calculated with and without appreciation. The rate of return on equity capital is determined by dividing the amount returned by the average farm net worth or equity capital. Return on total capital is calculated by adding interest paid to the return on equity capital and then dividing by average farm assets to calculate the rate of return on total capital.

RETURN ON EQUITY CAPITAL AND RETURN ON TOTAL CAPITAL
Intensive Grazing Dairy Farms, 1996

Item	59 New York Dairy Farms	21 More Profitable Farms	9 Less Profitable Farms
Net farm income with appreciation	$ 39,253	$ 64,826	$ 1,785
Family labor unpaid @$1,500 per month	- 5,400	- 5,550	- 4,500
Value of operators' labor & management	- 29,708	- 31,316	- 17,744
Return on equity capital with appreciation	$ 4,145	$ 27,960	$ -20,459
Interest paid	+ 13,494	+ 13,632	+ 6,206
Return on total capital with appreciation	$ 17,639	$ 41,592	$ -14,253
Return on equity capital without appreciation	$ -3,232	$ 20,717	$ -28,048
Return on total capital without appreciation	$ 10,262	$ 34,349	$ -21,842
Rate of return on average equity capital:			
with appreciation	1.2%	8.1%	-13.4%
without appreciation	-0.9%	6.0%	-18.3%
Rate of return on average total capital:			
with appreciation	3.3%	8.0%	-5.9%
without appreciation	1.9%	6.6%	-9.0%

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 1996, lease payments were discounted by 8.75 percent to obtain their present value.

Advanced government receipts are included as current liabilities. Government payments received in 1996 that are for participation in the 1997 program are the end year balance and payments received in 1995 for participation in the 1996 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.

1996 FARM BUSINESS & NONFARM BALANCE SHEET

Intensive Grazing Dairy Farms, 1996

Farm Assets	Jan. 1	Dec. 31	Farm Liabilities & Net Worth	Jan. 1	Dec. 31
Current			Current		
Farm cash, checking & savings	$ 3,405	$ 4,291	Accounts payable	$ 8,075	$ 6,573
Accounts receivable	14,114	13,918	Operating debt	4,901	4,538
Prepaid expenses	9	67	Short Term	461	1,653
Feed & supplies	34,264	38,132	Advanced govt. receipts	59	13
			Current Portion:		
			Intermediate	13,684	14,296
			Long Term	4,207	4,643
Total Current	$ 51,792	$ 56,408	Total Current	$ 31,387	$ 31,715
Intermediate			Intermediate		
Dairy cows:			Structured debt		
owned	$ 76,718	$ 79,029	1-10 years	$ 61,094	$ 58,298
leased	18	9	Financial lease		
Heifers	32,247	34,798	(cattle/machinery)	4,317	3,444
Bulls & other livestock	1,239	1,435	Farm Credit stock	2,134	2,021
Mach. & equip. owned	88,114	92,026	Total Intermediate	$ 67,545	$ 63,763
Mach. & equip. leased	4,299	3,435			
Farm Credit stock	2,134	2,021			
Other stock/certificate	4,306	4,506			
Total Intermediate	$ 209,075	$ 217,259			
			Long Term		
Long Term			Structured debt		
Land & buildings:			>10 years	$ 79,530	$ 80,278
owned	$ 257,679	$ 269,867	Financial lease		
leased	1,245	700	(structures)	1,245	700
Total Long Term	$ 258,924	$ 270,567	Total Long Term	$ 80,775	$ 80,978
			Total Farm Liab.	$ 179,707	$ 176,456
Total Farm Assets	$ 519,791	$ 544,234	FARM NET WORTH	$ 340,084	$ 367,778

Nonfarm Assets, Liabilities & Net Worth (Average of 43 farms reporting)

Assets	Jan. 1	Dec. 31	Liabilities & Net Worth	Jan. 1	Dec. 31
Personal cash, checking & savings	$ 1,928	$ 2,034	Nonfarm Liabilities	$ 3,958	$ 2,999
Cash value life insurance	8,245	6,552			
Nonfarm real estate	14,642	14,526			
Auto (personal share)	3,983	3,950			
Stocks & bonds	6,150	6,904			
Household furnishings	10,858	11,274			
All other nonfarm assets	1,767	2,459			
Total Nonfarm Assets	$ 47,573	$ 47,699	NONFARM NET WORTH	$ 43,615	$ 44,700

Farm & Nonfarm Assets, Liabilities, and Net Worth*	Jan. 1	Dec. 31
Total Assets	$ 567,364	$ 591,933
Total Liabilities	183,665	179,455
TOTAL FARM & NONFARM NET WORTH	$ 383,699	$ 412,478

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

BALANCE SHEET ANALYSIS
Intensive Grazing Dairy Farms, 1996

Item	59 New York Dairy Farms	21 More Profitable Farms	9 Less Profitable Farms
Financial Ratios - Farm:			
Percent equity	68%	67%	66%
Debt/asset ratio: total	0.32	0.33	0.34
long-term	0.30	0.31	0.26
intermediate/current	0.35	0.34	0.43
Farm Debt Analysis:			
Accounts payable as % of total debt	4%	2%	7%
Long-term liabilities as a % of total debt	46%	47%	41%
Current & inter. liabilities as a % of total debt	54%	53%	59%

	59 New York Dairy Farms		21 More Profitable Farms		9 Less Profitable Farms	
Farm Debt Levels:	Per Cow	Per Tillable Acre Owned	Per Cow	Per Tillable Acre Owned	Per Cow	Per Tillable Acre Owned
Total farm debt	$ 2,234	$ 1,063	$ 2,241	$ 1,035	$ 1,962	$ 803
Long-term debt	1,025	488	1,052	486	804	329
Intermediate & long term	1,832	872	1,899	877	1,365	559
Intermediate & current debt	1,209	575	1,190	550	1,158	474

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
59 Intensive Grazing Dairy Farms, 1996

Item	Real Estate	Machinery & Equipment
Value beginning of year	$ 257,679	$ 88,114
Purchases	$ 11,177*	$ 10,197
Gift & inheritance	+ 4,904	+ 1,248
Lost capital	- 1,527	
Sales	- 512	- 498
Depreciation	- 6,235	- 8,998
Net investment	= 7,808	= 1,949
Appreciation	+ 4,380	+ 1,963
Value end of year	$ 269,867	$ 92,026

*$4,384 land and $7,392 building and/or depreciable improvements.

The Statement of Owner Equity has two purposes. It allows (1) verification that the accrual income statement and market value balance sheet are consistent (in accountants terms, they reconcile) and (2) identification of the causes of change in equity that occurred on the farm during the year. The Statement of Owner Equity allows you to determine to what degree the change in equity was caused by (1) earnings from the business, and nonfarm income, in excess of withdrawals being retained in the business (called retained earnings), (2) outside capital being invested in the business or farm capital being removed from the business (called contributed/withdrawn capital) , (3) increases or decreases in the value (price) of assets owned by the business (called change in valuation equity), and (4) the error in the business cash flow accounting.

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

STATEMENT OF OWNER EQUITY (RECONCILIATION)
Intensive Grazing Dairy Farms, 1996

Item	59 New York Dairy Farms		21 More Profitable Farms		9 Less Profitable Farms	
Beginning of year farm net worth		$ 340,084		$ 323,495		$ 135,063
Net farm income w/o appreciation	$ 31,876		$ 57,583		$ -5,804	
+Nonfarm cash income	+ 8,913		+ 5,201		+ 13,516	
-Personal withdrawals & family expenditures excluding nonfarm borrowings	- 27,296		- 33,430		- 17,781	
RETAINED EARNINGS		+$ 13,493		+$ 29,354		+$ -10,069
Nonfarm noncash transfers to farm	$ 6,267		$ 4,019		$ 34,070	
+Cash used in business from nonfarm capital	+ 2,478		+ 1,273		+ 5,444	
-Note or mortgage from farm real estate sold (nonfarm)	- 0		- 0		- 0	
CONTRIBUTED/ WITHDRAWN CAPITAL		+$ 8,745		+$ 5,292		+$ 39,514
Appreciation	$ 7,377		$ 7,243		$ 7,589	
-Lost capital	- 1,527		- 1,181		- 333	
CHANGE IN VALUATION EQUITY		+$ 5,850		+$ 6,062		+$ 7,256
IMBALANCE/ERROR		- 394		- -458		- 517
End of year net worth*		=$367,778		=$364,661		=$171,247
Change in net worth w/appreciation		$ 27,694		$ 41,166		$ 36,184
Change in Net Worth						
Without appreciation		$ 20,317		$ 33,923		$ 28,595
With appreciation		$ 27,694		$ 41,166		$ 36,184

*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
59 Intensive Grazing Dairy Farms, 1996

Item			Average	
Cash Flow from Operating Activities				
	Cash farm receipts	$ 220,126		
-	Cash farm expenses	181,538		
=	Net cash farm income		$ 38,588	
	Personal withdrawals & family expenses including nonfarm debt payments	$ 27,554		
-	Nonfarm income	8,913		
-	Net cash withdrawals from the farm		$ 18,641	
=	Net Provided by Operating Activities			$ 19,947
Cash Flow From Investing Activities				
	Sale of assets: machinery	$ 498		
	+ real estate	512		
	+ other stock & cert.	1		
=	Total asset sales		$ 1,011	
	Capital purchases: expansion livestock	$ 789		
	+ machinery	10,197		
	+ real estate	11,177		
	+ other stock& cert.	77		
-	Total invested in farm assets		$ 22,240	
=	Net Provided by Investment Activities			$ -22,229
Cash Flow From Financing Activities				
	Money borrowed (intermediate & long term)	$ 21,521		
+	Money borrowed (short term)	1,631		
+	Increase in operating debt	0		
+	Cash from nonfarm capital used in business	2,478		
+	Money borrowed - nonfarm	258		
=	Cash inflow from financing		$ 25,888	
	Principal payments (intermediate & long term)	$ 22,519		
+	Principal payments (short term)	438		
+	Decrease in operating debt	365		
-	Cash outflow for financing		$ 23,322	
=	Net Provided by Financing Activities			$ 2,566
Cash Flow From Reserves				
	Beginning farm cash, checking & savings		$ 3,405	
-	Ending farm cash, checking & savings		4,291	
=	Net Provided from Reserves			$ -886
Imbalance (error)				$ 398

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 1997 The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to planned 1997 debt payments shown below.

FARM DEBT PAYMENTS PLANNED
Same Intensive Grazing Dairy Farms, 1995 & 1996

	Same 46 New York Farms			Same 18 More Profitable Farms			Same 8 Less Profitable Farms		
	1996 Payments		Planned	1996 Payments		Planned	1996 Payments		Planned
Debt Payments	Planned	Made	1997	Planned	Made	1997	Planned	Made	1997
Long term	$ 10,715	$ 11,005	$ 10,574	$ 12,140	$ 13,188	$ 11,423	$ 3,545	$ 3,752	$ 3,596
Intermediate term	18,500	23,267	18,271	20,121	29,134	20,060	10,343	10,568	11,748
Short term	604	594	1,654	216	425	756	0	40	1,188
Operating (net reduction)	1,757	4	2,001	1,927	1,450	1,450	3,402	0	4,197
Accounts Pay. (net reduction)	1,388	2,886	1,273	2,165	5,046	1,529	3,108	2,272	3,225
Total	$ 32,964	$ 37,756	$33,773	$ 36,569	$ 49,243	$ 35,218	$ 20,398	$ 16,632	$ 23,954
Per cow	$ 434	$ 497		$ 441	$ 593		$ 443	$ 362	
Per cwt. 1996 milk	$ 2.51	$ 2.88		$ 2.39	$ 3.22		$ 3.19	$ 2.60	
Percent of total 1996 farm receipts	15%	17%		14%	19%		20%	16%	
Percent of 1996 milk receipts	17%	19%		16%	22%		22%	18%	

The cash flow coverage ratio measures the ability of the farm business to meet its planned debt payment schedule. The ratio shows the percentage of payments planned for 1996 (as of December 31, 1995) that could have been made with the amount available for debt service in 1996. Farmers who did not participate in DFBS in 1995 have their 1996 cash flow coverage ratio based on planned debt payments for 1997.

CASH FLOW COVERAGE RATIO
Same Intensive Grazing Dairy Farms, 1995 & 1996

Item	Same 46 New York Farms	Same 18 More Profitable Farms	Same 8 Less Profitable Farms
Cash farm receipts	$ 213,761	$ 247,528	$ 101,896
- Cash farm expenses	173,333	190,705	101,332
+ Interest paid	12,342	13,983	6,443
- Net personal withdrawals from farm*	19,626	29,726	4,310
(A) = Amount Available for Debt Service	$ 33,144	$ 41,080	$ 2,697
(B) = Debt Payments Planned for 1996 (as of December 31, 1995)	$ 32,964	$ 36,569	$ 20,398
(A/B) = Cash Flow Coverage Ratio for 1996	1.01	1.12	0.13

*Personal withdrawals and family expenditures less nonfarm income and nonfarm money borrowed. If family withdrawals are excluded, or inaccurately included, the cash flow coverage ratio will be incorrect.

ANNUAL CASH FLOW WORKSHEET

Intensive Grazing Dairy Farms, 1996

Item	59 New York Dairy Farms		21 More Profitable Farms		9 Less Profitable Farms	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Average no. of cows	78		79		45	
Total cwt. of milk sold		13,491		14,467		6,147
Accrual Oper. Receipts						
Milk	$ 2,556	$ 14.78	$ 2,702	$ 14.75	$ 1,963	$ 14.37
Dairy cattle	147	0.85	219	1.20	150	1.10
Dairy calves	18	0.10	22	0.12	17	0.12
Other livestock	25	0.14	7	0.04	28	0.21
Crops	65	0.38	92	0.50	-17	-0.12
Misc. Receipts	95	0.55	111	0.60	73	0.54
Total	$ 2,904	$ 16.79	$ 3,148	$ 17.19	$ 2,215	$ 16.21
Accrual Operating Expenses						
Hired labor	$ 240	$ 1.39	$ 217	$ 1.18	$ 53	$ 0.39
Dairy grain & concentrate	762	4.41	754	4.12	648	4.74
Dairy roughage	36	0.21	38	0.21	163	1.19
Nondairy feed	3	0.02	0	0.00	20	0.14
Mach. hire, rent & lease	43	0.25	54	0.29	34	0.25
Mach. repair & vehicle exp.	158	0.91	148	0.81	172	1.26
Fuel, oil & grease	56	0.32	54	0.29	52	0.38
Replacement livestock	26	0.15	14	0.08	130	0.95
Breeding	33	0.19	37	0.20	18	0.13
Vet & medicine	56	0.32	60	0.33	46	0.33
Milk marketing	101	0.58	101	0.55	90	0.66
Bedding	12	0.07	9	0.05	10	0.08
Milking supplies	64	0.37	45	0.25	62	0.45
Cattle lease	0	0.00	0	0.00	1	0.01
Custom boarding	2	0.01	0	0.00	9	0.07
Other livestock exp.	53	0.31	70	0.38	33	0.24
Fertilizer & lime	62	0.36	66	0.36	32	0.23
Seeds & plants	41	0.24	29	0.16	19	0.14
Spray & other crop exp.	47	0.27	49	0.27	21	0.15
Land, bldg., fence repair	50	0.29	49	0.27	78	0.57
Taxes	70	0.40	75	0.41	64	0.47
Real estate rent & lease	38	0.22	25	0.14	18	0.13
Insurance	49	0.28	40	0.22	60	0.44
Utilities	82	0.47	80	0.44	103	0.75
Miscellaneous	33	0.19	26	0.14	35	0.26
Total Less Interest Paid	$ 2,117	$ 12.24	$ 2,041	$ 11.14	$ 1,968	$ 14.41
Net Accrual Operating Income	Total		Total		Total	
(without interest paid)	$ 61,507		$ 87,805		$ 11,113	
- Change in livestock & crop invent.*	6,584		13,169		1,913	
- Change in accounts receivable	-196		422		-181	
- Change in feed & supply inventory**	1,420		1,346		586	
+ Change in accounts payable***	-1,501		-4,276		-2,020	
NET CASH FLOW	$ 52,198		$ 68,592		$ 6,775	
- Net family withdrawals	- 18,383		- 28,229		- 4,265	
Available for Farm	$ 33,815		$ 40,363		$ 2,510	
- Farm debt payments	- 37,730		- 45,567		- 16,805	
Available for Farm Investment	$ -3,915		$ -5,204		$-14,295	
- Capital purchases	$ 22,240		$ 33,174		$ 4,179	
Additional Capital Needed	$ 26,155		$ 38,378		$ 18,474	

*Includes change in advance government receipts. **Includes change in prepaid expenses. ***Excludes change in interest account payable

Cropping Analysis

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

LAND RESOURCES AND CROP PRODUCTION
Intensive Grazing Dairy Farms, 1996

Item	59 New York Dairy Farms			21 More Profitable Farms			9 Less Profitable Farms		
Land	Owned	Rented	Total	Owned	Rented	Total	Owned	Rented	Total
Tillable	166	89	255	171	67	238	110	36	146
Nontillable	42	9	52	41	12	53	36	0	36
Other nontill.	106	6	112	95	14	109	90	0	90
Total	314	105	419	307	93	400	236	36	272
Crop Yields	Farms	Acres*	Prod/Acre	Farms	Acres*	Prod/Acre	Farms	Acres*	Prod/Acre
Hay crop	56	137	2.5 tn DM	21	118	2.8 tn DM	6	130	2.0 tn DM
Corn silage	44	53	13.9 tn	12	47	15.9 tn	5	28	11.3 tn
			4.5 tn DM			5.1 tn DM			3.2 tn DM
Other forage	10	21	2.8 tn DM	4	20	2.6 tn DM	0	0	0.0 tn DM
Total forage	56	182	3.0 tn DM	21	148	3.2 tn DM	6	153	2.1 tn DM
Corn grain	22	53	111 bu	9	54	122 bu	1	23	114 bu
Oats	5	14	48 bu	0	0	0 bu	1	6	58 bu
Wheat	4	34	42 bu	0	0	0 bu	0	0	0 bu
Other crops	9	29		4	41		0	0	
Tillable pasture	43	59		19	58		5	49	
Idle	17	42		5	31		4	29	
Total Tillable Acres	59	255		21	239		9	146	

*This column represents the average acreage for the farms producing that crop. For the 59 New York dairy farms, average acreages including those farms not producing were hay crop 130, corn silage 40, corn grain 20, oats 1, wheat 2, tillable pasture 43, and idle 12.

Average crop acres and yields compiled for the region are for the farms reporting each crop. Yields of forage crops have been converted to tons of dry matter using dry matter coefficients reported by the farmers. Grain production has been converted to bushels of dry grain equivalent based on dry matter information provided.

The following crop/dairy ratios indicate the relationship between forage production, forage production resources, and the dairy herd.

CROP/DAIRY RATIOS
Intensive Grazing Dairy Farms, 1996

Item	59 New York Dairy Farms	21 More Profitable Farms	9 Less Profitable Farms
Total tillable acres per cow	3.27	3.03	3.22
Total forage acres per cow	2.23	1.89	2.27
Harvested forage dry matter, tons per cow	6.59	6.03	4.87

Cropping Analysis (continued)

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

CROP RELATED ACCRUAL EXPENSES

Intensive Grazing Dairy Farms Reporting, 1996

Item	Total Per Till. Acre	All Corn Per Acre	Corn Silage Per Ton DM	Corn Grain Per Dry Sh. Bu.	Hay Crop Per Acre	Hay Crop Per Ton DM	Pasture Per Till Acre	Pasture Per Total Acre
All Grazing Farms								
No. of farms reporting	59	19			18		13	
Ave. number of acres	255	65			129		62	131
Fert. & lime	$ 18.87	$ 41.74	$ 9.75	$ 0.37	$ 16.00	$ 6.37	$ 32.02	$ 15.27
Seeds & plants	12.65	28.94	6.76	0.26	6.44	2.56	1.97	0.94
Spray & other	14.41	40.60	9.48	0.36	5.57	2.22	1.56	0.75
TOTAL	$ 45.93	$ 111.28	$ 25.99	$ 0.99	$ 28.01	$ 11.15	$ 35.55	$ 16.96
More Profitable Grazing Farms								
No. of farms reporting	21	9			9		7	
Ave. number of acres	239	69			131		66	138
Fert. & lime	$ 21.69	$ 42.65	$ 8.53	$ 0.35	$ 22.12	$ 8.78	$ 41.79	$ 20.13
Seeds & plants	9.56	27.20	5.44	0.23	6.62	2.63	0.56	0.27
Spray & other	16.22	39.12	7.82	0.33	9.34	3.71	2.59	1.25
TOTAL	$ 47.47	$ 108.97	$ 21.79	$ 0.91	$ 38.08	$ 15.12	$ 44.94	$ 21.65
Less Profitable Grazing Farms								
No. of farms reporting	9	3			2		4	
Ave. number of acres	145	40			130		31	66
Fert. & lime	$ 9.81	$ 40.43	$ 13.76	$ 0.37	$ 12.93	$ 9.95	$ 27.39	$ 12.86
Seeds & plants	5.83	29.35	9.99	0.27	7.92	6.09	8.19	3.85
Spray & other	6.46	39.35	13.40	0.36	0.00	0.00	0.52	0.24
TOTAL	$ 22.10	$ 109.13	$ 37.15	$ 1.00	$ 20.85	$ 16.04	$ 36.10	$ 16.95

Most machinery costs are associated with crop production and should be analyzed with the crop enterprise. Total machinery expenses include the major fixed costs (interest and depreciation), as well as the accrual operating costs. Although machinery costs have not been allocated to individual crops, they are shown below per total tillable acre.

ACCRUAL MACHINERY EXPENSES

Intensive Grazing Dairy Farms, 1996

Machinery Expense	59 New York Dairy Total Expenses	59 New York Dairy Per Till. Acre	21 More Profitable Total Expenses	21 More Profitable Per Till. Acre	9 Less Profitable Total Expenses	9 Less Profitable Per Till. Acre
Fuel, oil & grease	$ 4,338	$ 17.01	$ 4,245	$ 17.76	$ 2,337	$ 16.12
Mach. repair & vehicle exp.	12,331	48.36	11,725	49.06	7,726	53.28
Machine hire, rent & lease	3,351	13.14	4,241	17.74	1,522	10.50
Interest (5%)	4,697	18.42	4,458	18.65	2,366	16.32
Depreciation	8,998	35.29	8,836	36.97	4,598	31.71
Total	$ 33,715	$ 132.22	$ 33,505	$ 140.19	$ 18,549	$ 127.92

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 13 and 14.

DAIRY HERD INVENTORY
Intensive Grazing Dairy Farms, 1996

	Dairy Cows		Heifer					
			Bred		Open		Calves	
Item	No.	Value	No.	Value	No.	Value	No.	Value
59 New York Dairy Farms								
Beg. year (owned)	77	$ 76,718	20	$ 17,119	19	$ 9,643	19	$ 5,486
+ Change w/o apprec.		1,706		1,046		1,995		-771
+ Appreciation		605		94		161		25
End year (owned)	79	$ 79,029	22	$ 18,259	23	$ 11,799	17	$ 4,740
End including leased	79							
Average number	78		60	(all age groups)				
21 More Profitable Dairy Farms								
Beg. year (owned)	76	$ 77,725	22	$ 19,093	18	$ 8,991	20	$ 5,981
+ Change w/o apprec.		3,950		2,311		2,173		-914
+ Appreciation		1,110		246		141		98
End year (owned)	79	$ 82,785	25	$ 21,650	21	$ 11,305	18	$ 5,165
End including leased	79							
Average number	79		63	(all age groups)				
9 Less Profitable Dairy Farms								
Beg. year (owned)	45	$ 38,939	5	$ 3,244	9	$ 3,444	4	$ 656
+ Change w/o apprec.		667		1,162		762		-72
+ Appreciation		277		0		55		0
End year (owned)	45	$ 39,883	6	$ 4,406	10	$ 4,261	5	$ 584
End including leased	45							
Average number	45		21	(all age groups)				

Total milk sold and milk sold per cow are extremely valuable measures of size and productivity, respectively, on the dairy farm. These measures of milk output are based on pounds of milk marketed during the year. Farm managers on DHI should compare milk sold per cow with their rolling herd average on the test date nearest December 31 to see how close the DHI estimate of milk produced is to actual milk sales.

MILK PRODUCTION
Intensive Grazing Dairy Farms, 1996

Item	59 New York Dairy Farms	21 More Profitable Dairy Farms	9 Less Profitable Dairy Farms
Total milk sold, lbs.	1,349,129	1,446,729	614,684
Milk sold per cow, lbs.	17,270	18,402	13,559
Average milk plant test, percent butterfat	3.66%	3.67%	3.63%

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

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

Intensive Grazing Dairy Farms, 1996

Item	59 New York Dairy Farms		21 More Profitable Dairy Farms		9 Less Profitable Dairy Farms	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Accrual Cost of Producing Milk						
Operating costs	$ 1,952	$ 11.29	$ 1,784	$ 9.74	$ 1,866	$ 13.66
Purchased inputs costs	$ 2,147	$ 12.41	$ 1,973	$ 10.77	$ 2,092	$ 15.31
Total Costs	$ 2,824	$ 16.33	$ 2,657	$ 14.51	$ 2,756	$ 20.18
Accrual Receipts From Milk	$ 2,556	$ 14.78	$ 2,702	$ 14.75	$ 1,963	$ 14.37
Net Farm Income without Apprec.	$ 409	$ 2.36	$ 729	$ 3.98	$ -138	$ -0.94
Net Farm Income with Apprec.	$ 503	$ 2.91	$ 821	$ 4.48	$ 30	$ 0.29

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

DAIRY RELATED ACCRUAL EXPENSES

Intensive Grazing Dairy Farms, 1996

Item	59 New York Dairy Farms		21 More Profitable Dairy Farms		9 Less Profitable Dairy Farms	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Purchased dairy grain & concentrate	$ 762	$ 4.41	$ 754	$ 4.12	$ 648	$ 4.74
Purchased dairy roughage	36	0.21	38	0.21	163	1.19
Total Purchased Dairy Feed	$ 798	$ 4.62	$ 792	$ 4.33	$ 811	$ 5.93
Purchased grain & conc. as % of milk receipts	30%		28%		33%	
Purchased feed & crop exp.	$ 948	$ 5.48	$ 936	$ 5.11	$ 881	$ 6.45
Purchased feed & crop exp. as % of milk receipts	37%		35%		45%	
Breeding	$ 33	$ 0.19	$ 37	$ 0.20	$ 18	$ 0.13
Veterinary & medicine	56	0.32	60	0.33	46	0.33
Milk marketing	101	0.58	101	0.55	90	0.66
Bedding	12	0.07	9	0.05	10	0.08
Milking supplies	64	0.37	45	0.25	62	0.45
Cattle lease	0	0.00	0	0.00	1	0.01
Custom boarding	2	0.01	0	0.00	9	0.07
Other livestock expense	53	0.31	70	0.38	33	0.24

Capital and Labor Efficiency Analysis

Capital efficiency factors measure how intensively the capital is being used in the farm business. Measures of labor efficiency are key indicators of management's success in generating products per unit of labor input.

CAPITAL EFFICIENCY
Intensive Grazing Dairy Farms, 1996

Item	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
59 New York Dairy Farms				
Farm capital	$ 197,042	$ 6,821	$ 2,086	$ 3,205
Real estate		3,394		1,595
Machinery & equipment	34,791	1,204	368	
Asset turnover ratio	0.44			
21 More Profitable Dairy Farms				
Farm capital	$ 201,080	$ 6,592	$ 2,179	$ 3,046
Real estate		3,223		1,489
Machinery & equipment	34,422	1,129	373	
Asset turnover ratio	0.49			
9 Less Profitable Dairy Farms				
Farm capital	$ 133,155	$ 5,415	$ 1,681	$ 2,215
Real estate		2,796		1,144
Machinery & equipment	25,680	1,052	326	
Asset turnover ratio	0.44			

Capital and Labor Efficiency Analysis (continued)

LABOR FORCE INVENTORY AND ANALYSIS

Intensive Grazing Dairy Farms, 1996

Labor Force	Months	Age	Years of Educ.	Value of Labor & Mgmt.
59 New York Dairy Farms				
Operator number 1	13.9	46	14	$ 23,569
Operator number 2	3.1	47	13	4,953
Operator number 3	0.5	47	16	1,186
Family paid	2.0			
Family unpaid	3.6			
Hired	9.3			
Total	32.4	/ 12 = 2.70 Worker Equivalent		
		1.34 Operator/Manager Equivalent		
21 More Profitable Dairy Farms				
Total Labor Force	31.1	/ 12 = 2.59 Worker Equivalent		
Operator's Labor		1.23 Operator/Manager Equivalent		
9 Less Profitable Dairy Farms				
Total Labor Force	22.0	/ 12 = 1.83 Worker Equivalent		
Operator's Labor		1.25 Operator/Manager Equivalent		

Labor Efficiency	59 New York Dairy Farms Total	59 New York Dairy Farms Per Worker	21 More Profitable Dairy Farms Total	21 More Profitable Dairy Farms Per Worker	9 Less Profitable Dairy Farms Total	9 Less Profitable Dairy Farms Per Worker
Cows, average number	78	29	79	31	45	25
Milk sold, pounds	1,349,129	499,677	1,446,729	558,583	637,110	348,148
Tillable acres	255	94	239	92	145	79
Work units	802	297	800	309	430	235

Labor Costs	59 New York Dairy Farms Per Cow	59 New York Dairy Farms Per Cwt.	21 More Profitable Dairy Farms Per Cow	21 More Profitable Dairy Farms Per Cwt.	9 Less Profitable Dairy Farms Per Cow	9 Less Profitable Dairy Farms Per Cwt.
Value of operator(s) labor ($1,500/mo.)	$ 337	$ 1.95	$ 325	$ 1.77	$ 553	$ 4.05
Family unpaid ($1,500/mo.)	69	0.40	70	0.38	100	0.73
Hired	240	1.39	217	1.18	53	0.39
Total Labor	$ 646	$ 3.73	$ 612	$ 3.34	$ 707	$ 5.17
Machinery Cost	$ 432	$ 2.50	$ 424	$ 2.32	$ 412	$ 3.02
Total Labor & Mach.	$ 1,078	$ 6.23	$ 1,036	$ 5.66	$ 1,119	$ 8.19

COMPARATIVE ANALYSIS OF THE FARM BUSINESS

Progress of the Farm Business

Comparing your business with average data from regional DFBS cooperators that participated in both of the last two years can be helpful to establishing your goals for these parameters. It is equally important for you to determine the progress your business has made over the past two or three years, to compare this progress to your goals, and to set goals for the future.

PROGRESS OF THE FARM BUSINESS

Same Intensive Grazing Dairy Farms, 1995 & 1996

	Same 46 New York Dairy Farms		Same 18 More Profitable Dairy Farms		Same 8 Less Profitable Dairy Farms	
Selected Factors	1995	1996	1995	1996	1995	1996
Size of Business						
Average number of cows	74	76	78	83	46	46
Average number of heifers	53	57	61	66	18	22
Milk sold, lbs.	1,293,390	1,312,663	1,458,734	1,528,102	634,310	639,990
Worker equivalent	2.56	2.58	2.63	2.69	1.81	1.81
Total tillable acres	235	240	248	254	136	145
Rates of Production						
Milk sold per cow, lbs.	17,597	17,232	18,742	18,411	13,789	13,875
Hay DM per acre, tons	2.1	2.4	2.1	2.9	1.8	2.1
Corn silage per acre, tons	11.6	13.4	13.2	16.1	10.1	11.1
Labor Efficiency						
Cows per worker	29	29	30	31	25	25
Milk sold/worker, lbs.	505,230	508,784	554,652	568,068	350,448	353,586
Cost Control						
Grain & conc. purchased as % of milk sales	27%	29%	24%	27%	30%	33%
Dairy feed & crop exp. per cwt. milk	$ 4.30	$ 5.49	$ 4.04	$ 5.07	$ 5.01	$ 6.51
Labor & mach. costs/cow	$ 1,007	$ 1,052	$ 1,048	$ 1,045	$ 930	$ 1,115
Operating cost of producing cwt. of milk	$ 10.00	$ 10.97	$ 9.47	$ 9.78	$ 10.54	$ 13.68
Capital Efficiency**						
Farm capital per cow	$ 6,333	$ 6,421	$ 6,590	$ 6,641	$ 4,880	$ 5,296
Mach. & equip. per cow	$ 1,176	$ 1,192	$ 1,209	$ 1,150	$ 872	$ 950
Asset turnover ratio	0.40	0.46	0.41	0.49	0.38	0.46
Profitability						
Net farm income w/o apprec.	$ 22,592	$ 35,929	$ 35,270	$ 60,121	$ 4,754	$ -6,031
Net farm income w/apprec.	$ 25,394	$ 42,198	$ 36,518	$ 66,922	$ -510	$ 2,352
Labor & mgt. income per operator/manager	$ 2,673	$ 11,081	$ 10,958	$ 28,836	$ -4,533	$ -14,390
Rate of return on equity capital w/appreciation	-2.7%	2.2%	0.5%	8.1%	-17.1%	-14.0%
Rate of return on all capital w/appreciation	1.0%	4.0%	2.9%	7.9%	-6.5%	-5.7%
Financial Summary						
Farm net worth, end year	$ 310,085	$ 336,671	$ 346,568	$ 389,151	$ 119,914	$ 166,504
Debt to asset ratio	0.35	0.33	0.34	0.32	0.46	0.36
Farm debt per cow	$ 2,178	$ 2,151	$ 2,256	$ 2,219	$ 2,161	$ 2,057

*Farms participating both years.

**Average for the year.

Regional Farm Business Chart

The Farm Business Chart is a tool which can be used in analyzing your business. Compare your business by drawing a line through or near the figure in each column which represents your current level of performance. The five figures in each column represent the average of each 20 percent or quintile of farms included in the regional summary. Use this information to identify business areas where more challenging goals are needed.

FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS

59 Intensive Grazing Dairy Farms, 1996

Size of Business			Rate of Production			Labor Efficiency	
Worker Equiv-alent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(11)*	(11)	(11)	(10)	(9)	(9)	(11)	(11)
5.03	174	3,233,761	21,140	3.9	20	42	737,286
3.03	80	1,446,550	18,080	2.8	16	32	555,383
2.30	59	977,947	16,794	2.4	15	28	483,102
1.91	48	729,315	15,316	2.0	13	24	376,359
1.43	38	515,126	11,837	1.4	8	18	247,283

Cost Control					
Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
(10)	(10)	(11)	(11)	(10)	(10)
$423	20%	$216	$783	$578	$3.95
644	25	367	1,014	821	4.81
734	30	437	1,126	912	5.45
837	34	524	1,236	1,052	6.16
999	41	680	1,504	1,165	7.29

Value and Cost of Production			Profitability			
Milk Receipts Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income w/Apprec.	Net Farm Inc. w/o Apprec.	Labor & Mgt. Inc. Per Oper.	Change in Net Worth w/Apprec.
(10)	(10)	(10)	(3)	(3)	(3)	(6)
$3,154	$8.41	$13.87	$108,331	$97,365	$46,618	$94,476
2,771	10.32	15.41	54,620	45,539	22,113	34,968
2,439	11.17	17.08	32,358	26,038	6,117	19,989
2,217	12.39	18.77	15,515	9,488	-8,018	6,427
1,753	14.71	23.95	-8,803	-13,593	-32,101	-11,838

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

IDENTIFY AND SET GOALS

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

1. Goals should be **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 and Financial Analysis Charts on pages 22-25 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 11)

Accrual Receipts - (defined on page 12)

Annual Cash Flow Statement - (defined on page 19)

Appreciation - (defined on page 13)

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

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

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

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

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

Cash Flow Coverage Ratio - (defined on page 20)

Cash Paid - (defined on page 10)

Cash Receipts - (defined on page 12)

Change in Accounts Payable - (defined on page 11)

Change in Accounts Receivable - (defined on page 12)

Change in Inventory - (defined on page 10)

Current Portion - (defined on page 15)

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

Debt to Asset Ratios - (defined on page 17)

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 20.

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

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.

Labor and Management Income - (defined on page 14)

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.

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

Net Farm Income - (defined on page 13)

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 25)

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

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

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

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

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

Purchased Inputs Cost of Producing Milk - (defined on page 25)

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 15)

Return on Total Capital - (defined on page 15)

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

Total Costs of Producing Milk - (defined on page 25)

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

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OTHER A.R.M.E. EXTENSION BULLETINS

EB No	Title	Author(s)
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97-12	Dairy Farm Business Summary, Northern New York Region, 1996	Milligan, R.A., L.D. Putnam, P. Beyer, A. Deming, T. Teegerstrom, C. Trowbridge and G. Yarnall
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97-10	"Maximizing the Environmental Benefits per Dollar Expended": An Economic Interpretation and Review of Agricultural Environmental Benefits and Costs	Poe, G.
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