

Final report

LNE97-97

Documentation of Organic and Transitional Dairy Production Practices

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SARE grant

\$43,986

Duration

1997 to 2001

Summary

This project is an extension of *A Systems Analysis of Organic and Transitional Dairy Production* (LNE93-39); This project was generated out of a lack of studies available on organic dairy farming systems, specifically the interactions among production practices and the economic viability of those management decisions. The project was extended to document the economic, crop and animal management data from 4 organic, three transitional and one conventional dairy farms, and to facilitate the exchange of information among farmers and agricultural professionals.

Objectives

Analyze the business management, crop management and animal management data from eight organic and transitional dairy farms.

Facilitate the exchange of information from farmer-to-farmer, and farmer-to-agricultural professional (Cooperative Extension staff, researchers, veterinarians, etc.).

Approach

Objective 1: This project is an extension of LNE93-39, in which data was collected from eight dairy farms by visiting the farms monthly and collecting information on the business management, crop management, and animal management of their farm.

Economic analysis: The research methodology used for the economic analysis portion of this project relied on conventional partial and enterprise budgeting techniques. The enterprise or whole-farm budgets provide information on the overall economic viability of each farm. The partial budget analyses permit incremental and sensitivity analyses for individual components of the farm enterprise. These results were submitted with the final report for LNE93-39.

To facilitate our interpretation of the data generated in this project and to advise us on how to best reach the growing number of transitioning dairy farmers, we created a Dairy Technical Advisory Board in 1997. During 1999, this board recommended that we enhance the economic data gathered for the original project to include more transitioning farms. When our project started, there were three certified organic dairies and several transitioning dairy farms. By 1999, there were 40 certified organic dairy farms and 40 more transitioning. The greatest request for information among these transitioning farms was an economic assessment of the true cost of producing organic milk.

Building on the case studies of the eight participating farms, we chose the farmers with the best record-keeping skills of the original participant group and included new transitioning farms with a target of 15 farms. It was recommended that the most effective way to collect the economic data was to use a system already in place. Yankee Farm Credit runs a program named Agrifax which is used to work with conventional farmers to collect farm income and expenses on a monthly basis and generate monthly and annual summaries. In the end, we were able to collect complete economic data from seven farms for this project.

Crop Management: The crop production was monitored on a selection of the farms using the University of Vermont Computerized Crop Record Keeping System. This product tracks all input, labor, and machinery costs for each farm field, including information concerning planting, fertility, pest management, machine operations, yield, and cost of production. The record keeping is designed to result in costs/field on a field basis and costs/ton on a crop basis. For the analysis of controlled grazing systems we cooperated with the Vermont Grass Farmers Association. Participating farms were visited to measure forage quality, forage mass before and after grazing, dry matter intake per cow, and plant growth rate. Intake is one of the most important and difficult aspects of pasture management to measure, and highly correlated to nutritional balance of the ration.

Animal Management: Animal health information was recorded monthly on cow diseases, calf and heifer health. In addition, monthly milk quality records on Bulk Tank Milk

(BTM) including Standard Plate Count, Somatic Cell Count (SCC), Pasteurization Count and Preincubation Count were analyzed and submitted with the final report of LNE93-39. One of the major emphases of the herd health monitoring was the incidence of clinical mastitis on organic dairy farms. To accurately monitor mastitis, cooperating farmers were asked to collect milk samples from all cows at the last milking when drying-off, within three days after calving, from all quarters of cows that develop clinical mastitis, and from all cows purchased or sold.

Objective 2. Due to the rapid growth in organic dairy production during the course of this grant, there was tremendous demand for information on organic dairy production systems. To meet this demand, we held an “Alternatives in Animal Health” conference in 1997, 1998 and 1999. These two-day conferences drew researchers, farmers, and agricultural professionals from around the Northeast. Many of the participating farmers in our project were featured speakers. The conference workshops were taped and comprehensive proceedings were prepared. These are available from the NOFA-VT office.

Based on the evaluations and priority topics that evolved from the conferences, we held annual on-farm technical workshops throughout the year. Information was also exchanged through farmer-to-farmer mentoring. Participating farmers were compensated to work one on one with transitioning farmers.

Results

Objective 1: It is difficult to discriminate between the results of the original project and the extension of that project. For that reason, I have included the results from both LNE93-39 and 97LNE97-97. The key findings are broken into each component study area as follows:

Business management: The farmers in the study found that it was economically profitable to produce milk organically. One farm increased their total farm net profit 30 percent from the first to third year of the study and one farm increased more than 40 percent. This was due to both an increase in the price of milk per hundredweight, a decrease in production expenses, and an increase in non-dairy farm income. These results were supported in the subsequent cost of production study where the net earnings on a per-cow basis was shown to be \$477 for organic operations and \$255 for conventional operations. The detailed economic analysis completed by Pelsue and Person is contained in the final report of LNE93-39.

Animal management—feeding and nutrition. The majority of the organic farmers in the state, and in this study are grass-based farmers. While most conventional farmers rely on corn silage for energy, grass-based farmers must increase milk through putting up high quality forages (16-18 percent) to maintain condition. One of the farmers in the project said, “you make milk on your forages, you can’t afford to rely on purchasing (expensive) organic grains to maintain body condition.” This is an obstacle for farmers transitioning to organic dairy who are used to the conventional goal of managing cows for production. If a farmer does not grow his or her own organic corn silage or soybeans, it is difficult to

purchase, so they are having to reformulate their ration to rely on organic forages and purchased grain.

For example, through both the economic analysis and crop record keeping components of the study, farmer Jack Lazor determined that it is cost effective for him to grow all of his own grains. In a March 1996 technical meeting, he reported on the economics of his grain production, his yields (1800 lb./A of soybean in 1995), and his plans for successive seasons including working with open pollinated varieties. He is finding that they may make more sense for organic farmers since hybrids are bred to perform with high inputs. Jack also recommended that farmers interested in growing their own grains should start with cereals, as they are cheaper to grow than corn when starting out. This knowledge is complementary to information that Stew Gibson, nutritionist and project advisor, recommend to the farmers. Through his extension work, he has found that in order for farmers to maximize the use of their roughage, they need a readily degradable protein source to balance the pasture, and have found that barley is a good choice, prompting several farmers to look into producing their own small grains.

Animal management—herd health. Before this grant, few of the farmers were getting their milk quality tested (somatic cell count) and were not identifying the mastitis pathogens. Working with the Quality Milk Research Lab (QMRL) at the University of Vermont, the farmers sampled their cows when they dried them off, when they freshened, when they purchased a cow into the herd or when they had a clinical. The QMRL found the following:

Staphylococcus aureus is the most common mastitis pathogen, and the researchers hypothesize that this is due to the age of the cows. Most organic farmers keep their cows around for more lactations than conventional farmers. This finding has stirred a debate about whether the organic farmers with cows with *Staph. aureus* should treat those cows with an antibiotic when they are dried off. If farmers can now identify which cows in their herd have *Staph. aureus*, and are therefore responsible for elevating the somatic cell count, those cows could be treated individually. The organic certification standards prohibit the routine use of dry treatment and its use may be prohibited in subsequent years. Given this, the farmers seek further information to determine what other management practices might be contributing to the occurrence of *Staph. aureus* and how to control it in the herd, i.e. changing pre- and post-dipping solutions and segregation of cows with *Staph. aureus*.

Anecdotal evidence of the success of homeopathic remedies. All of the participating farmers, with the exception of the conventional farmer, rely primarily on homeopathic remedies for herd health, yet there is only one veterinarian in Vermont who is a homeopathic large animal practitioner. His work with the herds in 1996 led to the interest among farmers to scientifically study the efficacy of homeopathy. The on-farm trials in this project led to the SARE proposal, funded in 1997, called "Efficacy Evaluation of Homeopathic Nosodes for Mastitis and Calf Scours and Documentation of Homeopathic Practices in Organic and Conventional Dairy Production." Many of the farmers participating in our study also participated in the efficacy trials.

Impacts

The final report for LNE93-39 detailed many of the changes in practices adopted because of this project. This final report is specifically addressing documentation of the project and information exchange. There have been changes that the participating farmers have made, as well as changes that have taken place among the farmers who are transitioning to organic and using the project farmers as mentors. Some specific examples of the adoption of new technologies or production methods during the project are as follows:

- A farmer transitioning to organic production started cultivating his corn, instead of using a synthetic herbicide, and relying on organic fertilizers and crop rotations instead of synthetic fertilizers. For organic corn production, the farmer now plows in 20T/A of manure in the spring, uses an organic granulated whey fertilizer (5-9-1) at 420#/A as a corn starter, cultivates the corn three times with an s-tine cultivator, six days apart, and a spinner spreads on allis sweet annual red clover at 10#/A as a green manure crop. Corn is planted for 2 years, followed by 6 years of alfalfa and orchard grass. Jack Lazor (farmer participant) is acting as a mentor to this transitioning farm.
- All of the farmers in the project and the transitioning farmers have increased their knowledge of and use of alternatives to antibiotics, mostly by using more homeopathic remedies. Most of the farmers have the greatest problem with reproductive and udder health. In conventional animal practices, farmers treat reproductive problems with hormones, which are prohibited in organic practice. Mastitis, the most common udder malady, is conventionally treated with antibiotics. For example, farmers have had success using the homeopathic remedies belladonna and aconite when the quarter is swollen and the cow has a high fever. Anne Lazor, a farmer participant, is serving as a mentor for working with farmers on preventative management and homeopathy.
- Especially noteworthy is that the one conventional farm in the study started using homeopathic nosodes in a controlled procedure directed by the consulting veterinarian. They were so shocked by their success rate that they have transitioned from conventional remedies to homeopathic remedies, specifically for hairy heel wart and calf scours.
- Peter Young and Nancy Everhart are raising all of their calves on nurse cows to improve health of the cow and improve milk quality. Their theory was that problem cows with high Somatic Cell Count might actually get better if they are being nursed regularly. They have found that both the nurse cows improve and can be a productive part of their milking string and the calves thrive. Other farms in the study have since started using high count cows for nurse cows with good success.

Economic analysis

A detailed financial analysis for each farm was already submitted with the final report for LNE93-39. One of the difficulties of disseminating the economic information, however, is that the information is very meaningful for each of the case-study farms, but may not be all that helpful for farmers looking for a bottom-line cost of production of organic milk. Unless a transitioning farmer were going to completely mimic the system detailed

Based on the success of the Alternatives in Animal Health Conferences, in 2000 we collaborated with the Vermont Grass Farmers Association for their annual conference. This allowed a greater audience (the next potential wave of organic producers) to participate in workshops about organic dairy production. Although the conference format provides some benefits, it is difficult to reach the farmers who need the most assistance and don't usually like to travel too far from their farm. We held a series of on-farm workshops to reach these farmers, veterinarians and other agricultural professionals. These proved to be a more effective means of farmer-to-farmer communication because they were more regional and focused on one topic. Proceedings from these workshops are distributed through NOFA-VT's Dairy Tech Newsletter.

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**An Economic Comparison of Organic and Conventional Dairy Production,
and Estimations on the Cost of Transitioning to Organic Production**

By Lisa McCrory, Northeast Organic Farming Association of Vermont

“What does it cost to produce Certified Organic Milk? What would I be paying in grain bills if I were to transition to organic production? Would my vet bills go down, would they go up, or would they stay the same? What would I get paid for my milk if it were organic? Where do I find supportive economic information to present to my loan officer?” These are some of the questions most often asked by farmers who are considering switching to organic milk production.

Because most of the available information is based on estimations and here-say, some of our leading Vermont organic dairy farmers recommended that we create statistically relevant benchmarks using real numbers from certified organic dairy farms. The most effective way to collect this information was to use a system already in place. Agrifax is a service provided by Yankee Farm Credit that works with dairy farmers to collect their farm income and expenses on a monthly basis, creating monthly and annual summaries. This company offered to assist us in collecting and evaluating the information from the participating farms.

Seven organic dairy farmers completed the information required to provide the benchmark data. The participating farms agreed to supply their income, expenses, and year-end balance sheets for 1998 and 1999 with the understanding that their personal information would remain confidential and only averages of all the farms combined would be reported. A general description of the participating farmers (Table 1) is included in this report to assist the reader in understanding the types of operations involved.

Table 1: Basic Description of Organic Farms (1999 year)							
Farm	1	2	3	4	5	6	7
# Milkers	45	65	75	30	35	40	35
Holstein (H) or Jersey (J)	J	J	J	J	H	H&J	J
Custom/Purchased feed			x				
Grows corn silage		x				x	
Harvest own hay/silage	x	x		x	x	x	x
Intensive Grazing	x	x	x	x	x	x	x
Seasonal Dairy				x			
Years Certified	4	4	2	4	4	5	4

Enclosed are three reports comparing the Agrifax averages of these 7 organic herds with the 1999 Dairy Farm Summary Book averages of 182 conventional herds (1). The organic herds averaged 46 cows per farm and the conventional herds averaged 65 cows per farm. Herd size and study group numbers are not equal, which may indicate a need for a more indepth study.

There are three summary tables comparing the conventional herds to the organic herds. They are titled 1) **Earnings Worksheet**, 2) **Balance Sheet Summary**, and 3) **Evaluation Factors**.

The **Earnings Worksheet** (Table 2) gave an average of the *receipts*, *expenses* and *net earnings* for both conventional and organic dairy farms. Total cash receipts for each operation were the same, but the overall expenses were higher for the conventional farms. Net farm income, once *family living and Income taxes* and *depreciation* were accounted for, showed a 45% difference in net earnings on a per cow basis. The average organic operation earned \$477 per cow while each conventional herd netted \$255 per cow.

Change in inventory-raised livestock was \$100.00 per cow for the organic dairies and -\$1.00 per cow for the conventional farms. The organic dairy herds that participated in this study were closed herds that raised all their own replacements. Four of the seven organic dairy herds make money selling surplus replacement stock each year.

Some of the expense figures vary significantly between the two groups in the categories of *feed freight and trucking*, *labor*, *veterinary*, *medicine & breeding*, and *cow replacements*.

In comparing the feed category, it was decided to compile feed related activities such as *chemicals & sprays*, *custom work*, *fertilizer & sprays*, and *seed*. When this was done, the organic dairy herds were only 21% higher in total expenses. Organic concentrates tend to be twice as expensive, so one would have expected a greater difference. This may be due to the fact that organic dairy farms tend to feed less grain to their animals and all the organic dairy herds in this study rotationally graze their animals during the growing season which can greatly reduce the needed volume of harvested feed and purchased grain. In future studies, it would be of benefit to separate the feed category into supplements, concentrates, and purchased forages, but that was not possible with the benchmark programs used.

Freight and trucking was more than twice as much for the conventional herds. This is probably due to the fact that the organic herds pay either a \$5 stop-charge (\$75/month) or have no hauling fee at all.

Labor was 32% less for the organic dairy herds and *Other Expenses* was 29% less. As mentioned earlier, the organic dairy herds did not buy any *cow replacements* in 1999, so they had no expense, while the conventional herds had a cost of \$32 per cow (or \$2080.00/yr).

Veterinary, Medicine and Breeding was 33% less for the organic operations. This category displays one of the greatest differences in management techniques between organic and conventional farms. To more fully understand these differences would require further study. The program used for this study could not separate breeding and vet costs, but in future studies it would be ideal to turn this into three categories: *breeding*, *scheduled vet visits*, and *unscheduled vet visits*.

Table 2: EARNINGS WORKSHEET: Comparing Conventional Dairy Herds with Organic Dairy Herds During the 1999 Calendar Year

	<u>Conventional</u>	<u>Organic</u>
<u>Herd Size:</u>		
Number Farms	182	7
Average # cows	65	46
<u>Receipts</u>		
	<u>DOLLARS PER COW</u>	<u>DOLLARS PER COW</u>
Milk sales	\$2,812.00	\$3,030.00
Crop sales	\$41.00	\$1.00
Cattle sales	\$157.00	\$93.00
other	\$183.00	\$74.00
CASH RECEIPTS (a)	\$3,193.00	\$3,198.00
<u>Accrual Adjustments</u>		
Change in Inventory-Raised Livestock	\$(1.00)	\$50.00
VALUE OF FARM PRODUCTION (c)	\$3,192.00	\$3,248.00
<u>Expenses</u>		
	<u>Conventional</u>	<u>Organic</u>
Chemicals & Sprays	\$37.00	\$00.00
Custom	\$46.00	\$100.00
Feed	\$661.00	\$966.00
Fertilizer & Lime	\$97.00	\$47.00
Freight & Trucking (Marketing)	\$111.00	\$50.00
Gasoline, Fuel & Oil	\$62.00	\$58.00
Insurance	\$63.00	\$58.00
Interest	\$165.00	\$113.00
Labor	\$196.00	\$133.00
Rent	\$60.00	\$62.00
Repairs, Maintenance, Car & Truck	\$230.00	\$164.00
Seed & Plants	\$43.00	\$2.00
Supplies	\$162.00	\$154.00
Taxes	\$82.00	\$61.00
Utilities	\$96.00	\$87.00
Veterinary, Medicine & Breeding	\$107.00	\$64.00
Other	\$94.00	\$67.00
Cow Replacements	\$32.00	\$00.00
ADJUSTED CASH OPERATING EXPENSE (b)	\$2,344.00	\$2,186.00

Table 2: Earnings Worksheet (Continued)

<u>Accrual Adjustments</u>		
Depreciation	\$292.00	\$230.00
ADJUSTED FARM OPERATING EXPENSE (d)	\$2,636.00	\$2,414.00
NET FARM INCOME (a) - (b)	\$849.00	\$1,012.00
NET FARM EARNINGS (c) - (d)	\$556.00	\$834.00
Net non-farm Income	\$121.00	\$23.00
Family Living and Income Taxes	\$(422.00)	\$(380.00)
NET EARNINGS	\$255.00	\$477.00

The **Balance Sheet Summary** (Table 2) was created by collecting an Asset and Debt Sheet at the end of 1998 and 1999 from the farmers. One can see that **Total Assets** between both groups were the same but **Total Liabilities** were 30% greater for the conventional herds. *Current liabilities* were 27% lower for the conventional herds while their *intermediate* and *long-term* loans were 65% and 23% greater (respectively).

Evaluation Factors (Table 4) lists income and expenses associated with milk production, expressed on a per-cow and per-hundred weight basis. Income from milk production was balanced against *feed and crop expenses*, and *labor and family living* per hundred weight of milk produced. It then summarized the *net worth per cow* based on the assets and debts, and concluded with the *percent return on assets and equity* of the whole farm operation. Though the costs per cow were higher on organic operations, milk price per hundred weight was also higher (\$22.83 vs \$15.01). The *Percent Return on Assets* and *Percent Return on Equity* for the organic herds were 34% and 37% greater than the conventional averages.

Table 3: BALANCE SHEET SUMMARY: Comparing Conventional Dairy Herds with Organic Dairy Herds during the 1999 Calendar Year.

<u>Herd Size</u>	<u>Conventional</u>	<u>Organic</u>
Number of Farms	182	7
Average # Cows	65	46
	ASSETS PER COW	ASSETS PER COW
Cash & Accounts Receivable	\$400.00	\$576.00
Feed & Crop Inventory	\$480.00	\$399.00
Supplies and Prepaid Expenses	\$117.00	\$74.00
Other Current Assets	\$70.00	\$8.00
TOTAL CURRENT ASSETS	\$1,067.00	\$1,057.00
Dairy Livestock	\$1,393.00	\$1,282.00
Vehicles, Machinery & Equipment	\$1,850.00	\$1,349.00
Other Intermediate Assets	\$665.00	\$393.00
TOTAL INTERMEDIATE ASSETS	\$3,908.00	\$3,024.00
Farm Real Estate	\$4,229.00	\$5,112.00
Other Fixed Assets	\$30.00	\$276.00
TOTAL FIXED ASSETS	\$4,259.00	\$5,388.00
TOTAL ASSETS	\$9,234.00	\$9,470.00
	LIABILITIES PER COW	LIABILITIES PER COW
Accounts Payable	\$29.00	\$56.00
Short Term Loans, CP of long-term and intermediate loans	\$58.00	\$228.00
Other Current Liabilities	\$304.00	\$253.00
TOTAL CURRENT LIABILITIES	\$391.00	\$537.00
Farm Credit Intermediate Term	\$743.00	\$32.00
Other Intermediate Liabilities	\$200.00	\$297.00
TOTAL INTERMEDIATE LIABILITIES	\$943.00	\$329.00
Farm Credit -Long-Term Liabilities	\$576.00	\$122.00
Other Long-Term Liabilities	\$382.00	\$623.00
TOTAL LONG-TERM LIABILITIES	\$958.00	\$745.00
TOTAL LIABILITIES	\$2,292.00	\$1,610.00
	NET WORTH PER COW	NET WORTH PER COW
OWNER'S NET WORTH	\$6,942.00	\$7,860.00
% NET WORTH	75%	83%

Table 4: EVALUATION FACTORS: Comparing Conventional Dairy Herds with Organic Dairy Herds During the 1999 Calendar Year

<u>Herd Size</u>	<u>Conventional</u>	<u>Organic</u>
Number of Farms	182	7
Average # Cows	65	46
Worker Equivalent	2	2
Cows Per Worker	33	23
Pounds of Milk Sold Per Worker	608,700	305,000
Pounds of Milk Sold	1,217,400	610,000
Pounds of Milk Sold Per Cow	18,729	13,261
Milk Price Per Cwt.	\$15.01	\$22.83
Feed Cost Per Cow	\$661.00	\$966.00
Feed Cost Per Cwt.	\$3.53	\$7.28
Feed as a Percent of Milk Sales	24%	32%
Feed and Crop Expense Per Cow	\$884.00	\$1,115.00
Feed and Crop Expense Per Cwt.	\$4.72	\$8.41
Labor and Family Living Per Cow	\$588.00	\$501.00
Labor and Family Living Per Cwt.	\$3.14	\$3.84
Milk Price Per Cwt	* \$15.01	\$22.83
Net Cost of Production/Cwt	* \$14.30	\$19.17
Net Income Per Cwt	\$ 0.71	\$ 3.66
Assets Per Cow	\$9,234.00	\$9,470.00
Debt Per Cow	\$2,292.00	\$1,610.00
Net Worth Per Cow	\$6,942.00	\$7,860.00
Percent Return on Assets (3)	4.70%	7.04%
Percent Return on Equity (4)	3.80%	6.06%

- 1) Feed and Crop Expense = Feed + Seed & Plants + Fertilizer + Chemicals & Sprays
 - 2) Machinery Cost = Machinery Repairs + Machine Hire + Fuel & Oil + Machinery & Equipment Depreciation
 - 3) Return on Assets = (Net Earnings + Interest) Divided by (Average Farm Assets)
 - 4) Return on Equity = (Net Earnings) Divided by (Average Farm Net Worth)
- * Based on farm average of 89 cows or less (pg 22 of 1999 Dairy Farm Summary)

Transitioning Costs:

When looking at these comparisons, organic dairy production looks like it is far more profitable than conventional dairy farming. An area that one must consider before deciding to produce organic milk is the cost of transitioning. There is no cookbook answer to how much this is going to affect a farmer. Everyone will have a slightly different answer depending on the land and animal management changes that they will be implementing,

Requirements for a farm that wants to produce organic milk under the VOF Standards (Vermont Organic Farmers) are:

- 1) All feed (including pasture) must come from land that is free of chemical fertilizers, herbicides, pesticides and genetically modified crops for at least 3 years, and
- 2) New herds entering certified organic production must be managed in accordance with **all** the VOF certification standards for the 90 days prior to selling milk or dairy products as certified organic.

Estimations for the purchase of organic grain during that 90 day period would cost the farmer, with a herd size of 50 milkers, over \$5000 on concentrates alone (see Table 5). The table below is an example of what you could do for your farm projections. The cost for a 16% protein grain was based on April 2001 prices.

Table 5: Comparison of Conventional and Organic Grain Costs over a 90 Day Period

Comparison A

<u>Pounds Grain Fed</u>	<u>x 90 days</u>	<u>16% Org. Grain @ \$300/Ton</u>	<u>16% Conv. Grain @ \$150/Ton</u>
50 Cows @20 # grain/day	90,000 lbs (45 Ton)	\$13,500.00	\$ 6,750
15 Heifers @ 5# grain/day	6,750 lbs (3.375 Tons)	\$ 1,012.00	\$ 506
	(TOTAL)	\$14,512.00	\$ 7,256

Comparison B

<u>Pounds Grain Fed</u>	<u>x 90 days</u>	<u>16% Org. Grain @ \$300/Ton</u>	<u>16% Conv. Grain @ \$150/Ton</u>
50 Cows @ 15# grain/day	67,500 lbs (33.75 Tons)	\$10,125.00	\$ 5,062.00
15 Heifers @ 3# grain/day	4,050 lbs (2.025 Tons)	\$ 608.00	\$ 304.00
	(TOTAL)	\$10,733.00	\$ 5,366

There are many hidden costs that can seriously affect a farmer if he/she is not prepared. For this reason it is impossible to give anyone a straight answer when they want to know how much it will cost them to transition to organic dairy production. Some of these hidden costs may lie in the following areas:

- 1) Needing to purchase organic forage

- 2) Animal health: getting familiar with new health products and letting go of prohibited practices (antibiotics, dry cow therapies, routine use of parasiticides, etc)
- 3) Getting the cows accustomed to new grain
- 4) Unforeseen culling: you may find that some of animals don't fit into an organic operation
- 5) Transitioning your hay, pasture, crop land (if needed)
- 6) Learning curve: getting used to new management practices can also have some hidden costs that are very hard to estimate.

Using the benchmark programs already in place was very useful in understanding the economics of organic dairy farming. When comparing conventional and organic operations, distinct differences were found in the categories of *feed, labor, repairs, maintenance, car & truck, veterinary, medicine & breeding,* and *cow replacements*. Using the Agrifax benchmark programs, it was not possible to divide the above categories any further. Some suggested categories for future studies would be:

- 1) Divide *feed* category into: a) purchased grain, b) purchased forages, c) purchased supplements. This will help to distinguish the costs associated with the different feeding programs.
- 2) Provide a consistent definition for *labor*. To compare farmer labor from one farm to another, there needs to be a standard developed for that cost.
- 3) Divide *Veterinary, Medicine & Breeding* into 4 categories: a) Scheduled vet visits (ie monthly pregnancy checks), b) unscheduled vet visits, c) medical supplies, and d) breeding. These are good figures to use to evaluate health management.
- 4) In *Cattle sales* divide this into a) market beef sales, b) voluntary culls, c) involuntary culls, d) dairy stock, and e) calves.

This paper provides some answers of the most frequently asked questions with financial averages presented from leading farms in the conventional and organic dairy industry. We realize there are more important questions that are specific to each manager's operation. Not all the questions can be answered with economic evaluation. We feel that this comparison study will help to answer some of the economic questions so that managers can move on to more value oriented decisions. To be of continued assistance to farmers and resource professionals, further studies need to take place measuring both qualitative and quantitative parameters.

Endnotes:

- (1) Dairy Farm Summary 1999, a Joint Project of Northeast Farm Credit, by David Stafford, Jamie Block and Bill Zweigbaum, published by Farm Credit of Western New York, ACA, © 2000. For a copy, call (800) 929-7102.