



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

# **BEEF FARM BUSINESS SUMMILARY**

November 1989

SF SMITH

A.S. Mimeo 129

A.E. Ext. 89-33

## **1988 Northeast Beef Cow-Calf Farm Business Summary**

**Caroline Nowak Rasmussen**

**Stuart F. Smith**

**Danny G. Fox**

1988 NORTHEAST BEEF COW-CALF  
FARM BUSINESS SUMMARY

Table of Contents

	<u>Page</u>
Introduction	3
Economic Factors Affecting Northeast Beef Producers	4
Summary of the Farm Business - Selected Factors	10
Definitions of Selected Business Factors	10
Analysis of Selected Business Factors	11
Business Characteristics and Resources Used	13
Farm Income	14
Farm Expenses	15
Farm Profitability Measures	18
Farm Statement of Net Worth	19
Balance Sheet Analysis	21
Farm Inventory	22
Repayment Analysis	22
Annual Cash Flow Statement	23
Beef Enterprise Analysis	24
Herd and Crop Management	26
1988 Crop Production	26
Herd and Crop Management Analysis	26
Capital and Labor Efficiency Analysis	28
Beef Herd Analysis	30
Livestock Market Values	30
Value of Beef Inventory	30
Conclusion	31

<u>List of Tables and Figures</u>	<u>Page</u>
Figure 1. Beef Prices Received by Farmers, U.S.	6
Figure 2. U.S. Cattle and Calf Inventory	6
Figure 3. Percent of Cow Herd Slaughtered	7
Figure 4. Monthly Cattle Slaughter	7
Figure 5. Beef Carcass Weights, U.S.	8
Figure 6. Returns to Cow-calf Producers, U.S.	8
Table 1. Selected Business Factors, 1987 and 1988	11
Table 2. Business Characteristics of Twenty-three Northeast Beef Farms, 1988	13
Table 3. Resources Used on Northeast Beef Farms, 1987 and 1988	14
Table 4. Farm Income, Average of Twenty-three Northeast Beef Farms, 1988	15
Table 5. Farm Expenses, Average of Twenty-three Northeast Beef Farms, 1988	17
Table 6. Measures of Farm Profitability, Average of Twenty-three Northeast Beef Farms, 1988	18
Table 7. Farm Statement of Net Worth, Average of Twenty-three Northeast Beef Farms, 1988	20
Table 8. Balance Sheet Analysis, Average of Twenty-three Northeast Beef Farms, 1988	21
Table 9. Farm Inventory, Average of Twenty-three Northeast Beef Farms, 1988	22
Table 10. Repayment Analysis, Average of Twenty-three Northeast Beef Farms, 1988	23
Table 11. Annual Cash Flow Statement, Average of Twenty-three Northeast Beef Farms, 1988	24
Table 12. Beef Enterprise Receipts and Expenses, Average of Twenty-three Northeast Beef Farms, 1988	25
Table 13. 1988 Crop Production, Average of 23 Northeast Beef Farms	26
Table 14. Herd and Crop Management Analysis, Average and Range of Twenty-three Northeast Beef Farms, 1988	28
Table 15. Capital & Labor Efficiency Analysis, Average of Twenty-three Northeast Beef Farms, 1988	29
Table 16. Livestock Market Values and Stock Numbers, Average of Twenty-three Northeast Beef Farms, 1988	30
Table 17. Value of Beef Inventory (Jan. 1, 1988 and Dec. 31, 1988), Average of Twenty-three Northeast Beef Farms	31

## Introduction

The Beef Farm Business Summary is a compilation and analysis of business records from participating cow-calf farms. The farm summaries provide the basis for continued extension education programs, data for applied research studies, and for use in the classroom. Regardless of the use of the data, confidentiality of individual farm data is maintained.

The following farm business summary was compiled in 1989 by the Department of Animal Science in conjunction with the Department of Agricultural Economics, using data submitted by twenty-three farmers. Of the twenty-three farmers providing farm records, one is located in New Hampshire and twenty-two are located in New York State. The New York State producers represented 15 counties. Summaries were collected from farms with a variety of resources and management objectives. Data was collected for the calendar year 1988. All of the producers have a cow-calf component in their operation. Some sell all calves at weaning, others feed out some or all of their calves to a finished weight.

These twenty-three farms are not a scientific sample and are not necessarily representative of Northeastern beef farms. The averages published in this report are not intended to represent the average of all beef farms and should not be interpreted as such. The averages are calculated to provide the cooperators with a comparison when analyzing their own records. The purpose of the Beef Farm Business Summary is to present the cooperators and other beef producers with a format for summarizing and analyzing their business and to offer some data which may be useful to potential beef producers and Cooperative Extension agents.

The Beef Farm Business Summary was made possible by help from Cooperative Extension agents Varnon Blackburn, David Dodge, Carl Crispell, Thomas Gallagher, June Grabemeyer, James Hilson, Timothy Terry, David Weaver, Alan White and Dr. William Zeigbaum of University of New Hampshire. The authors would like to thank Bill Greene, who contributed conceptually to the project. Thank you also to the participating beef producers. Without their kind cooperation, the Beef Farm Business Summary would not be possible.

Accrual procedures have been used to provide the most accurate accounting of farm receipts and farm expenses for measuring farm profits. An explanation of these procedures is found on pages 14 and 15. Five measures of farm profits are calculated on pages 18 and 19. The balance sheet and cash flow statement are featured on pages 19 through 24. Throughout the document key phrases are underlined to help the reader locate specific information in the text.

The beef industry is cyclic. The time between price high points has historically been 10-12 years. The primary reasons for the cattle cycle are lags inherent to individual decision making and the lag time between industry entry and production.

As prices start to climb from a price trough, producers are encouraged to expand production by using all available heifers for breeding stock. Holding back heifers and cull cattle reduces the number of animals available for slaughter. This decrease in beef production tends to push prices higher. As prices increase, herd building intensifies and beef production is constrained even more causing beef prices to climb still higher. Eventually, this process moves the cow herd and total cattle numbers to a point where the number of cattle produced for slaughter exceeds consumer demand. Beef prices begin to decline. As prices decline, herd building turns into herd liquidation. Heifers are no longer held and cows from the expanded herd are slaughtered. Beef prices and cow numbers both decline.

The cattle cycle is a result of the highly competitive structure of the beef industry. Many small producers acting independently create the cycle. The length of the cycle depends on both biologic and psychological factors. It takes at least two years from the time a heifer is first bred until her calf is ready to slaughter, creating a lag between when heifers are saved back until their calves reach slaughter.

During all the phases of the cattle cycle there is a lag in the producers response to changes in the market. At the bottom of the price cycle, the producers may be somewhat wary of the past low prices and are reluctant to increase their herd. Some time into the price recovery, the "in-and-out" individual may start into production. After the cycle has peaked and prices are decreasing, producers may continue to hold cow numbers up hoping for a price recovery, until the price drops sufficiently for panic to cause widespread selling. These response lags explain why the building phase of the cycle can last six to eight years and the liquidation phase can last three to four years.

By watching the cattle cycle closely, a producer can benefit from an increasing market and cut losses in a declining market. While prices are high, the producer can cull from the herd any marginal cows and heifers. During the down phase, the producer can build cow numbers and have a efficient number of producing cows when the market turns up again.

The beef cycle reflects the relationship between prices, finished cattle supplies and the number of cows and heifers held for breeding. Other factors affecting the price of beef include cattle slaughter characteristics (size and mix), consumer demand, cost of production, farm to retail margins, world trade, market psychology and weather.

In 1988, the expansion phase of the cattle cycle continued but at a moderating rate. As shown in Figure 1., the prices received by farmers for calves, steers and heifers and all beef cattle moved up in 1988 except for a midyear dip caused by the 1988 drought. The supply of breeding cattle, feeder cattle and finished cattle decreased in 1988, Figure 2. The national cow herd was the oldest and smallest in 27 years<sup>1</sup>. Although cow numbers are down, producers have tended to hold cows and heifers for breeding as shown in the decrease in the percent of cow herd slaughtered, Figure 3.

The slaughter mix and the size of carcasses has caused the beef marketed to decline less drastically than the number of cattle slaughtered would indicate. The total quantity of beef produced has not varied dramatically in twenty years, Figure 4<sup>2</sup>. Several factors have contributed to more efficient beef production. One factor is the trend to larger frame, more efficient cattle. Over the last 20 years carcass weights have increased 75-85 lbs, figure 5. Also a factor is the decrease in the slaughter of breeding stock, which tend to be lighter than cattle fed for slaughter.

The returns to U.S. cow calf producers were positive in 1988 although down from 1987, as shown in figure 6. However in New York State, calf prices averaged \$93.20 /cwt up 20 percent from a year earlier. The feeder cattle price generally follow the movement of finished cattle prices. New York Cattle prices, at \$44.80/cwt. increased eight percent from the previous year. A seven percent drop in the number of New York State beef cattle and calves marketed was offset by higher prices which contributed to a five percent increase in gross income<sup>3</sup>.

The beef cycle is also affected by changes in the demand for beef. The per capital consumption of beef has declined from 78 pounds in 1979 to an estimated 1989 consumption of 73.4 pounds. Beef's market share of the consumers dollar spent on beef, pork and chicken has also decreased. In 1975 beef purchases were 57-59% of total spending for beef, pork, and chicken. By 1987 beef purchases were reduced to 53% of spending for beef, pork, and chicken.

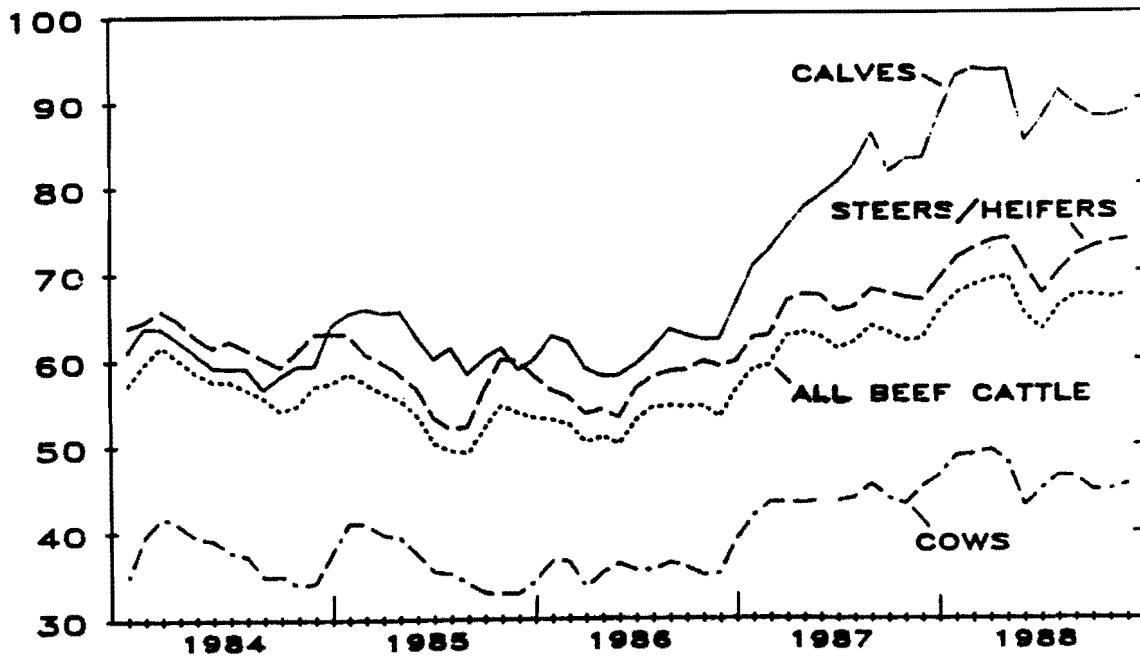
---

<sup>1</sup> New York Economic Handbook 1989 Agricultural Situation and Outlook. Extension Staff. Department of Agricultural Economics New York State College of Agriculture and Life Sciences, Cornell University. December 1988.

<sup>2</sup> Ed Rayburn. Beef Cattle Marketing - A New York Perspective. Seneca Trail Resource Conservation and Development Area. October 1989.

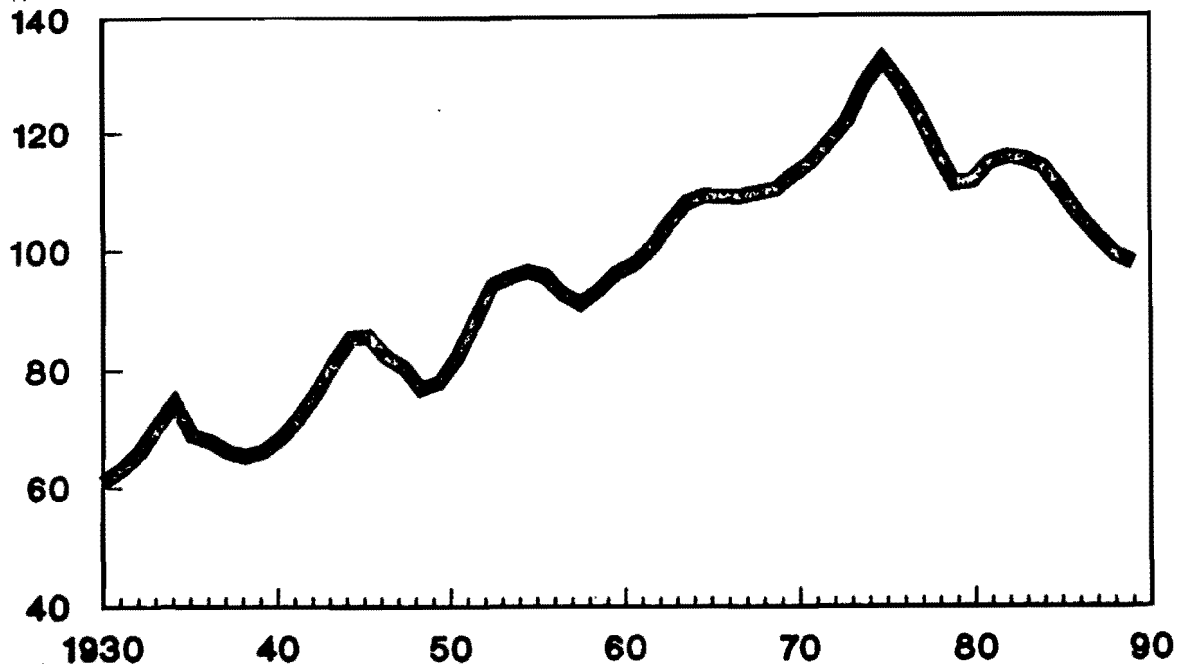
<sup>3</sup> 1988 New York Agricultural Statistics. New York State Agriculture & Markets. July 1989.

Figure 1. Beef Prices Received by Farmers, U.S. (Dollars per cwt.)



Source: Agricultural Prices, December 1988. Ag Statistics NASS, USDA

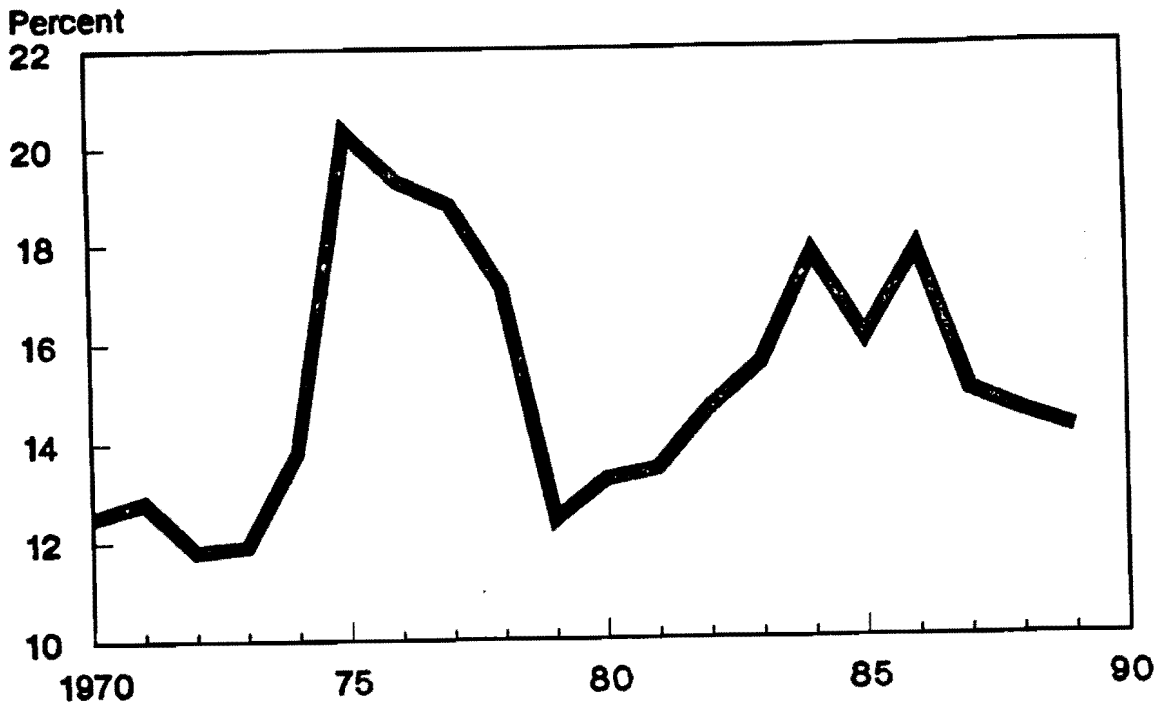
Figure 2. U.S. Cattle and Calf Inventory, million head



Source: USDA, ERS. January 1989. Outlook '89 Charts.  
65th Annual Agricultural Outlook Conference

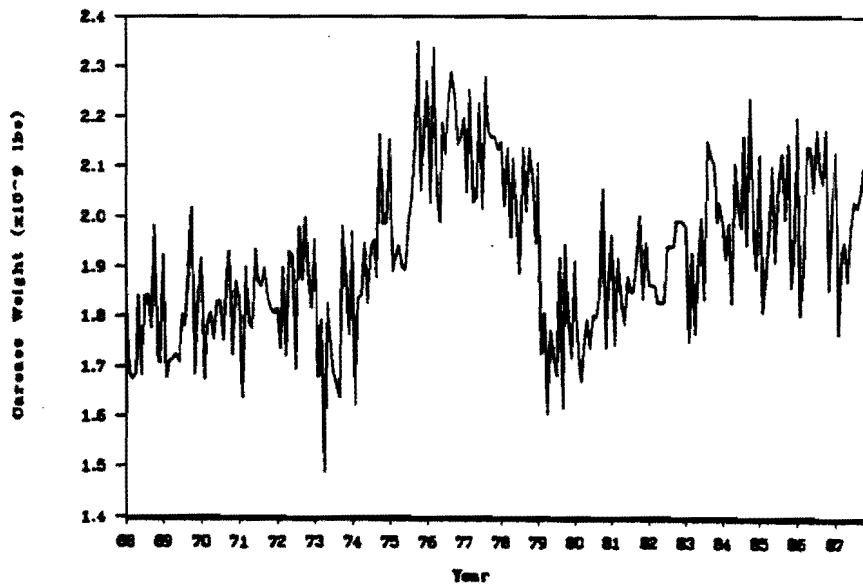


Figure 3. Percent of Cow Herd Slaughtered

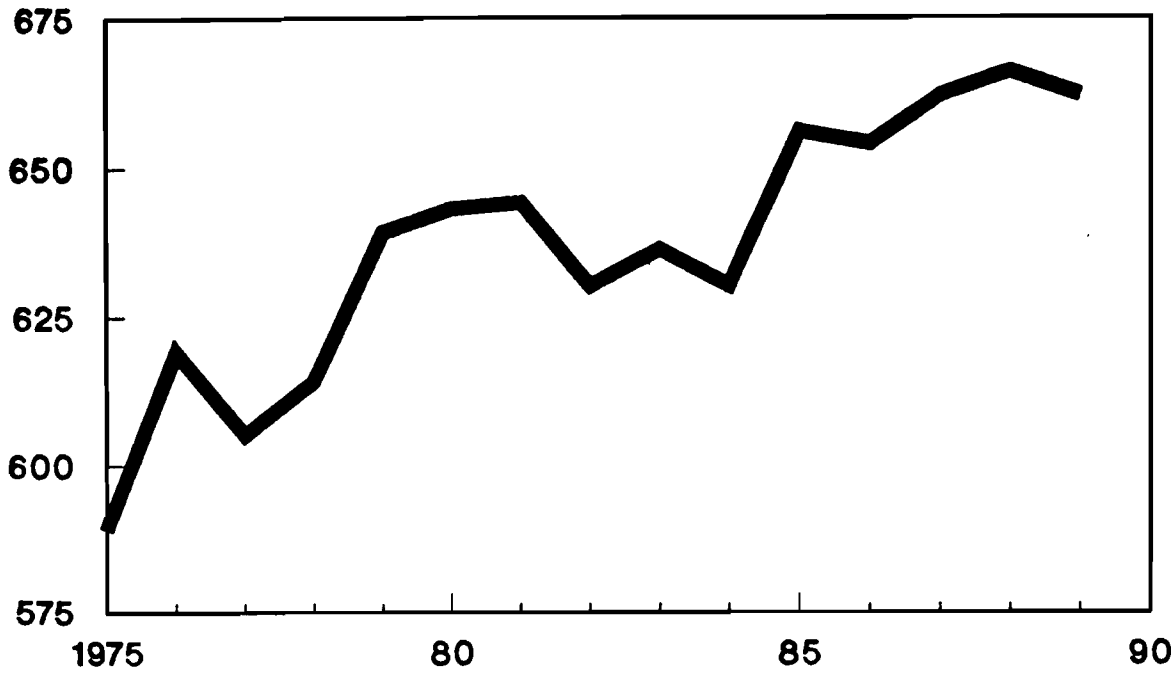


Source: USDA, ERS. January 1989. Outlook '89 Charts.  
65th Annual Agricultural Outlook Conference

Figure 4. Monthly Cattle Slaughter

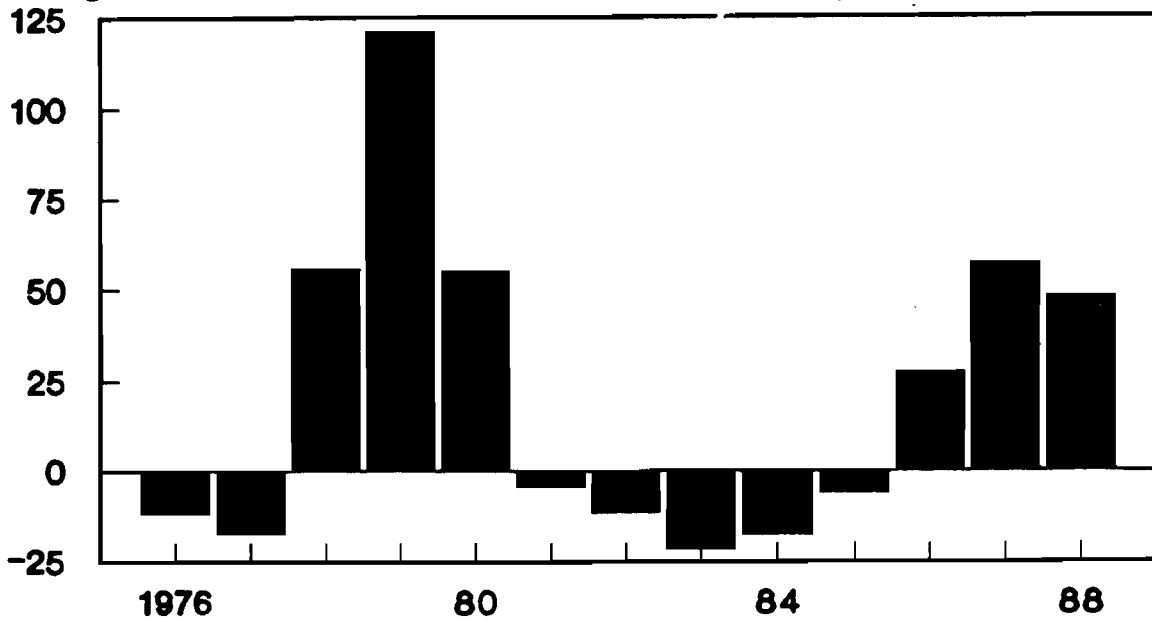


Source: Beef Cattle Marketing - A New York Perspective by Ed Rayburn. Seneca Trail Resource Conservation and Development Area.



Source: USDA, ERS. January 1989. Outlook '89 Charts.  
65th Annual Agricultural Outlook Conference

Figure 6. Returns to Cow-calf Producers, U.S., \$/cow



Receipts less cash expenses.

Source: USDA, ERS. January 1989. Outlook '89 Charts.  
65th Annual Agricultural Outlook Conference

There are several reasons for the declining popularity of beef including diet and health concerns over fat and cholesterol. However, recent research indicates that a major factor is the price difference between beef and other meats.<sup>4</sup> In the mid-1960's the beef price was about twice that of poultry. By 1988, beef was three times as expensive as chicken. This research indicates that if beef production costs were lowered the consumption response would expand the industry significantly. The price response to a one percent change in beef share of total dollars spent for meat is a change of \$ 2.00/cwt for fed steers and \$5.00/cwt for feeder cattle. The analysis points out that the most room for production cost reduction may be in the cow-calf segment.

However the decrease in demand for beef has moderated in response to increasing disposable income, promotion and research showing that nutritional objections to beef have been overstated. Deflated beef prices are not expected to drop in the next few years as they did between 1979 and 1988, even though inflation adjusted demand may be flat.

In summary:

- 1) Beef prices are cyclic in response to the supply of beef available and the demand for beef by domestic and foreign consumers.
- 2) In 1988 the national cattle inventory continued to decrease, tightening the supply of feeder and finished animals.
- 3) The 1988 fed cattle and feeder cattle prices increased moderately from 1987.
- 4) Over the past ten years, beef demand has decreased due to several factors including the price of beef relative to alternative meats. Increased production efficiency leading to lower beef production costs will increase beef's market share and increase returns to the beef industry. The demand for beef tends to be stabilizing.

---

<sup>4</sup> Greg Henderson. "Call for reduction of costs meets with can-do assessment" Drovers Journal. August 17, 1989.

## Summary of the Farm Business - Selected Factors

Selected farm business summary factors include the size of the farm business, rates of production, cost control, capital efficiency, profitability, return on equity and financial summary. The average and the range values for selected business factors are presented in Table 1. Average values for 1987 data and average and range values for 1988 data are shown.

## Definitions of Selected Business Factors

The average number of cows is the mean number of open and bred cows held during the year ( $(\text{open and bred cows as of January 1} + \text{open and bred cows as of December 31})/2$ ). The average number of heifers and average number of bulls is computed in the same way. The % calves weaned is calculated by dividing the total number of calves weaned by the sum of the total number of calves born, plus calves purchased as a cow-calf pair less calves sold as a cow-calf pair. The % calves born is calculated by dividing the total number of calves born alive by the total of pregnant cows in the herd plus pregnant cows purchased less pregnant cows sold. The average wean age is the average number of days between birth and weaning. Cost control, capital efficiency, and profitability measures given on a per cow basis use the average number of cows (as defined above) as the denominator.

Purchased feed/cow is the sum of beef grain purchased and beef roughage purchased, on an accrual basis, per cow. Hired labor and machinery cost per cow is calculated as the sum of accrued expenditures for hired labor, machinery repair, farm auto, machinery hire and lease, machinery depreciation and an interest charge of five percent on the average machinery investment. The interest charge represents the opportunity cost of the dollars invested in machinery. Hired Labor, machinery and crop cost per cow is the sum of: hired labor and machinery cost per cow (as defined above), accrued fertilizer & lime and accrued seed, spray and other crop expenses.

All of the capital efficiency measures are averages of the beginning and ending of the year. Assets are valued on a market value basis for calculation of capital efficiency measures. The profitability measures are calculated in table 6. Details concerning profitability analysis are in the "Profitability Measures" text. Farm net worth is the total market value of assets less liabilities as of December 31. The debt to asset ratio is the total number of dollars of debt per each dollar of assets. Farm debt per cow is the December 31 total liability value divided by the total number of open and bred cows as of December 31.

Table 1.

Item	Selected Business Factors, 1987 and 1988		
	- 1987 - Average	----- 1988 ----- Average	Range
Number of Farms	17	23	
<b>Size of Business</b>			
Average number of cows	37.0	33.9	3.0 - 112.5
Average number of heifers	8.4	7.5	0 - 20.0
Average number of bulls	1.9	2.5	0 - 17.0
Total lbs. weaned	16,707	13,944	630 - 41,975
<b>Rates of Production</b>			
% Calves weaned	*	92.3	33 - 100
% Calves born	*	92.2	60 - 100
Average weaning weight, lbs.	494	549	394 - 665
Average wean age, days	*	207	180 - 242
<b>Cost Control</b>			
Purchased feed cost/cow	\$ 58	\$ 178	\$ 21 - 1,575
Hired Labor & Mach. cost/cow	565	323	31 - 1,018
Hired Labor, mach. & crop cost/cow	711	392	43 - 1,027
<b>Capital Efficiency (average for year)</b>			
Mach. & equip. investment/cow	\$ 2,734	\$ 1,247	\$ 110 - 4,468
Real estate investment/cow	7,472	8,356	0 - 84,000
Total capital investment/cow	11,738	11,194	1,690 - 90,067
<b>Profitability</b>			
Net cash farm income	\$ (1,713)	\$ 595	\$ (20,905) - 55,660
Net farm income w/o appr.	(9,395)	(4,594)	(26,553) - 27,868
Net farm income w/ appr.	10,585	4,815	(21,769) - 75,644
<b>Financial Summary</b>			
Farm Net Worth (12/31)	\$ 244,256	\$ 226,975	\$ 17,796 - 1,394,520
Debt to asset ratio	.10	.13	0 - .43
Farm debt per cow	\$ 574	\$ 1,085	\$ 0 - 4,573

\* This value not calculated for the 1987 Beef Farm Business Summary.

#### Analysis of Selected Business Factors

The selected business factors shown in Table 1 are a one page synopsis of the farm business's size, productivity and profitability. Averages are shown for the 17 farms participating in the 1987 summary and averages and ranges shown for the 23 farms participating in the 1988 business summary. Eleven farms participated in both studies. Be careful when comparing changes in business factors from one year to the next. With the small number of farms involved, most large changes between 1987 and 1988 are due to the economic profiles of the individual farms involved and not changes in the beef industry.

In 1988, the average number of cows on the twenty-three farms was 33.9 with a range of 3 to 122.5. The reproductive efficiency of the farms tended to be very good with Percent Calves weaned and Percent calves born averaging 92.3 % and 92.2 % respectively. Eleven farms had 100 % calves weaned and thirteen farms had 100 % live calf births. The range in percent calves weaned and percent calves born was surprisingly large, varying between 33 and 100 and 60 and 100 percent respectively.

There was also a large variation in the economic factors: cost control, capital efficiency and profitability. This variation was evident in the cost control measures where purchased feed per cow varied from \$21 to \$1,575 per cow and hired labor and machinery cost varied from \$31 to \$1,018 per cow. Hired labor and machinery cost tended to be related to farm size with the smaller farms having the highest machinery and labor cost per cow. This reflects the fixed component of investment in machinery required for a farming operation.

Capital efficiency is an important factor in the operation of a beef cow calf enterprise. As cow calf businesses tend to be labor and capital extensive with a small profit margin, over capitalization can be devastating to the health of the business. The cow calf industry is, however, prone to this problem partially because many part time producers, under a time constraint, need reliable equipment. The machinery and equipment investment per cow ranged from \$110 to \$4,468.

Only two of the farms in the summary described beef as not their primary farm enterprise. Eight of the farm had some income from crop sales. The average corp income for these eight farms was \$ 3,762. The farms who had a cash crop enterprise had a higher machinery investment/cow (\$1,531) than the fifteen farms which did not sell any crops off of the farm (\$1,095).

Of the average total capital investment per cow of \$11,194, 75 percent or \$8,356 was real estate investment. This is an especially high percentage considering that three of the farm's operators did not own the primary farm real estate at the yearend. The average real estate investment for the twenty real estate owners was \$ 193,358 or \$ 41,140/cow.

Net cash farm income, which is farm cash receipts less farm cash expenses and purchased breeding stock, is the money available to make principle payments, capital purchases and contribute toward family living and savings. Average net cash farm income for 1988 participating farms was \$ 595. Net farm income, calculated on an accrual basis, includes depreciation of buildings and machinery and changes in inventory. Average net farm income for the twenty-three farms was \$ (4,594). Net farm income with appreciation is the total farm accrual receipts less total farm accrual expenses plus livestock, machinery and real estate appreciation. Appreciation represents the change in farm inventory values caused by changes in prices during the year. Appreciation is included in Net Farm Income in order to reflect the entire change in farm net worth. The average Net Farm Income including appreciation was \$ 4,815.

Farm net worth is the market value of all farm assets less all farm debt. The average farm net worth for the twenty-three beef farms was \$ 226,975. The debt to asset ratio indicates that on the average for every \$1.00 of farm assets there is \$ .13 of farm debt. The average farm debt per cow on December 31, 1988 was \$1,085. The debt level of the beef farms participating in the beef farm business is relatively low for an agricultural business. The debt to asset ratio and debt per cow for the 1988 New York State Dairy Farm Business Summary was .34 and \$ 2,063 respectively.

Business Characteristics and Resources Used

Some major business characteristics are shown in Table 2. Sixteen of the farms are part time business and seven are full time. The average farm tenure is over 11 years and eleven of the twenty-three producers use artificial insemination for part or all of their herd breeding. Twenty of the producers indicated beef was the primary farm enterprise.

Table 2.

<u>Business Characteristics of Twenty-three Northeast Beef Farms, 1988</u>			
	Number of Farms		Average Years
Full Time Business	7	Farmer has operated farm	11.9
Part Time Business	16	Has owned beef herd	11.7
Beef Primary Enterprise	21		
Beef Non Primary Ent.	2		
Business Type			
Single Proprietor	22		
Partnership	2		
Record Keeping System			
Account Book	14		
Check-Write System	4		
On-farm Micro Computer	4		
Accountant	1		
AI Used	11		

Land, labor and animal resources used in the farm business are listed on Table 3. Labor is measured in months. In this analysis 200 hours is considered one month of labor. Land use and herd size averages include only those farms reporting a value for the item. The range is of all farms. The total worker equivalent of 12.1 is the months of labor per year required to operate the average beef enterprise in the 1988 study. This value is equivalent to one full time person working 200 hours each month of the year.

Table 3.

<u>Resources Used on Northeast Beef Farms, 1987 and 1988</u>			
<u>Item</u>	<u>Average 1987</u>	<u>Average 1988</u>	<u>Range 1988</u>
Number of farms	17	23	
Land Used			
Total Acres			
Owned	96	165	0 - 1,166
Rented	103	94	0 - 560
Tillable Acres			
Owned	96	61	0 - 140
Rented	97	63	0 - 250
Total Tillable	147	124	0 - 375
Herd Size			
Average Number Cows	37.0	33.9	3 - 112.5
Average Number of Cows, Bulls & Heifers	47.3	43.9	3 - 149.5
Labor (months)			
Operator(s)	10.38	8.17	2.08 - 25.69
Hired Labor	3.29	2.14	0 - 26.00
Family Unpaid	2.68	1.65	0 - 7.8
Total Worker Equivalent	16.53	12.11	3.00 - 30.16

#### Farm Income

Cash receipts, change in inventory, changes in accounts receivable, accrual receipts and accrual receipts per cow are listed in Table 4. Cash receipts include the actual amount of cash received for farm products, services and government payments. Accrual Receipts represent the value of all farm production and services actually provided during the year. Increases in livestock inventory caused by herd growth are included as accrual receipts under the changes in inventory column. Decreases in inventory caused by herd reduction are deducted. The change in inventory column does not reflect changes in inventory due to price changes (appreciation). A positive change in crop inventory is shown if there is an increase in grown feeds in inventory from the beginning to the end of the year. The Farm Statement of Net Worth (page 20) and Value of Beef Inventory (page 31) present the details of change in inventory.



The changes in accounts receivable column adjusts accrual income to exclude cash received in this year for goods which changed ownership in a previous year and include income from the current years sales that has not been received. An increase in accounts receivable will increase the accrual receipts accordingly. A decrease in accounts receivable will decrease accrual receipts. Accrual receipts per cow is calculated by dividing the sum of accrued receipts from all farms by the total number of cows.

Non-farm receipts such as off-farm income are excluded from the farm income statement. Gas lease payments and other payments attributed to the farm land base are included as miscellaneous receipts.

Six of the farms sold feeder calves, finished and breeding cattle. Four farms sold feeder calves and finished cattle. The accrual receipts are slightly less than the cash receipts because of the inventory adjustment reflecting decreases in the finished and breeding cattle inventories and decreases in outstanding accounts receivable.

Table 4.

<u>Farm Income, Average of Twenty-three Northeast Beef Farms, 1988</u>					
<u>Item</u>	<u>Cash Receipts</u>	<u>Change in Inventory</u>	<u>Change in Acct's Rec'bl</u>	<u>Accrual Receipts</u>	<u>Accrual per cow<sup>5</sup></u>
Feeder calf sales	\$ 3,626	\$ 276	\$ (8)	\$ 3,894	\$ 115
Finished cattle	8,137	(795)	0	7,342	217
Breeding stock	8,207	(1,810)	(100)	6,297	186
Cull cattle	1,734		0	1,734	51
Other livestock	1,253	148	0	1,401	41
Crop Sales	1,308	919	24	2,251	66
Custom work	0		0	0	0
Government payments	1,131		0	1,131	33
Misc. receipts	<u>547</u>	<u>      </u>	<u>0</u>	<u>547</u>	<u>16</u>
Total Cash Receipts	\$ 25,943				
TOTAL ACCRUAL RECEIPTS		\$ (1,262)	\$ (85)	\$ 24,597	\$ 725

#### Farm Expenses

Cash Expenses are those farm expenses which were paid for in 1988. Accrual Expenses include the costs of inputs actually used in the year's production. The value of purchased feeds and supplies used out of the farm inventory are included as a cost. Charges for items purchased but not paid for in 1988, shown as an increase in accounts payable, are included in accrual expenses. Conversely, decreases in accounts payable, items purchased in previous years and paid for in 1988, decrease accrual expenses. Accrual expenses/cow are calculated by dividing the sum of accrued expenses from all farms by the total number of cows. Farm business expenditures are grouped into seven major categories.

Hired labor expenses include wages, social security paid on labor, worker's compensation insurance, unemployment insurance, and privileges purchased for hired labor.

<sup>5</sup> Sum of total Accrual Receipts / Sum open and bred cows on all farms.

Feed costs include beef grain and concentrate, beef roughage and other livestock feed. Beef grain and concentrate includes concentrates, minerals, protein, and grain purchased for the beef herd. Hay and silage purchased for the beef herd is entered as beef roughage purchased. All feed purchased for non-beef livestock is included in other livestock feed.

Machinery costs represent all the operating costs of using power machinery on the farm. Ownership costs such as depreciation and interest on investment are excluded here but are included in the machinery cost measures in Selected Factors, Table 1.

Livestock expenses include the cost of supplies and services directly associated with the care and maintenance of the beef herd. Breeding expenses include purchased semen, artificial breeding supplies, and pregnancy exams. Feeders and stockers purchased are the cost of cattle purchased that are purchased for resale not for breeding stock. Marketing, and other beef expenses include trucking, marketing fees, commissions, advertising, bull test fees, ID tags, grading, branding and stock supplies.

Crop expenses include the costs of fertilizer, lime, seeds, pesticides, and other crop supplies.

Real estate expenses are the direct costs associated with owning and maintaining farmland and buildings. Taxes include all town, county and school taxes paid on farm real estate. Corporate taxes are itemized under miscellaneous and sales taxes are capitalized with the cost of the improvement. Insurance is all fire and farm liability insurance paid on farm property and excludes life insurance and personal and employee health insurance.

Other expenses include telephone, electricity, interest paid and other miscellaneous expenses. Electricity and telephone expenses include only the farm share. Interest is made up of all interest paid on farm liabilities including finance charges. Other operating expenses are all other farm operating expenses, not previously itemized, which are for a farm enterprise other than the beef enterprise.

Breeding stock purchased are only those animals purchased which are added to the breeding herd. This expense is normally a capital purchase and not included in the operating expenses for this reason.

Machinery and building depreciation charges are based on income tax figures. Depreciation is an estimate of the value of capital assets used up during the year's production. Depreciation is part of total accrual expenses but not part of total cash expenses.

The largest beef operating expense was beef grain purchased, the next largest was interest paid, followed by machinery repairs. Of all accrual expenses, the greatest was machinery depreciation. The total accrual income per cow was \$ 725. The accrual operating expense per cow was \$ 726 and the total accrual farm expenses per cow was \$ 861.

Table 5.

Farm Expenses, Average of Twenty-three Northeast Beef Farms, 1988					
Item	Cash Expenses	Change in Inventory	Change in Acct's Pay'bl	Accrual Expenses	Accrual <sup>6</sup> Exp./cow
Hired labor	\$ 2,093	\$	\$	\$ 2,093	\$ 62
<b>Feed</b>					
Beef grain purchased	2,772	(71)	29	2,730	81
Beef roughage purchased	867	(39)	29	857	25
Other livestock feed	672			672	20
<b>Machinery</b>					
Gasoline & oil	1,331	(2)		1,329	39
Machinery repairs	2,165			2,165	64
Farm auto expense	168			168	5
Machinery hire & lease	298			298	9
<b>Livestock</b>					
Vet & medicine	602	(12)	4	594	17
Breeding expense	525	(136)		389	12
Feeders purchased	719			719	21
Stockers purchased	26			26	1
Mktg & other beef exp.	1,005	(17)		988	29
<b>Crops</b>					
Fertilizer & lime	1,284	16		1,300	38
Seed, spray & oth crop	636	(14)		622	18
<b>Real Estate</b>					
Land, bld & fence rep.	1,456	(17)	22	1,461	43
Taxes (real estate)	1,492			1,492	44
Rent & lease	800			800	24
<b>Other</b>					
Insurance	1,186			1,186	35
Telephone	182			182	5
Electricity	727			727	21
Interest Paid	2,340			2,340	69
Misc. beef expenses	900	(4)		896	26
Other operating expenses	604			604	18
Total Operating Exp.	24,850	(296)	84	24,638	726
Breeding Stock Purch.	498			498	15
Machinery Depreciation				2,977	88
Building Depreciation				1,078	32
Total Cash Expenses	\$ 25,348				
Total Accrual Expenses		\$ (296)	\$ 84	\$ 29,191	\$ 861

<sup>6</sup> Sum of total Accrual Expenses / Sum open and bred cows on all farms.

## Farm Profitability Measures

Farm owners/operators contribute labor, management, and capital to their businesses. The best combination of these resources produces optimum profits. Farm profits can be measured as the return to all contributed resources or as the return to one or more individual resources such as labor and management. A series of farm profitability measures are summarized in Table 6.

Net cash farm income is total farm cash receipts less total farm cash expenses. Cash expenses include breeding stock purchased.

Net farm income without appreciation is total accrual receipts less total accrual expenses. Physical changes in inventories are included in this value. Appreciation of capital items (livestock, machinery and real estate) is excluded.

Net farm income including appreciation is total accrual income plus livestock, machinery and real estate appreciation, less total accrual expenses. Beef livestock is valued at a standard beginning and ending year price as reported by New York State Ag & Markets: see Livestock Market Values and Stock Numbers, table 17.

Table 6.

Measures of Farm Profitability, Average of Twenty-three Northeast Beef Farms, 1988		
Item		---- Average ----
Total Farm Cash Receipts		\$ 25,943
<u>- Total Farm Cash Expenses</u>	-	<u>25,348</u>
Net Cash Farm Income		595
Total Accrual Receipts		\$ 24,597
<u>- Total Accrual Expenses</u>	-	<u>29,191</u>
Net Farm Income w/o Appreciation		(4,594)
Total Accrual Receipts		\$ 24,597
+ Livestock Appreciation	+	(87)
+ Machinery Appreciation	+	1,011
+ Real Estate Appreciation	+	8,485
<u>- Accrual Expenses</u>	-	<u>29,191</u>
Net Farm Income w/appreciation		4,815
Net Farm Income w/o Appreciation		\$ (4,594)
- Family Labor Unpaid @ \$ 650 /month *	-	1,156
- Interest on \$ 76,711 average investment <u>in Non-Real Estate equity capital @ 5%</u>	-	<u>3,836</u>
Return to Labor, Management & Real Estate Ownership		(9,586)
- Interest on \$ 145,315 average investment <u>in Real Estate equity capital @ 5%</u>	-	<u>7,266</u>
Return to Operator Labor & Management		(16,852)

Return to Labor, Management and Real Estate Ownership identifies the amount of net farm income contributed by the owner-operator's labor, management and real estate ownership. This measure is calculated: total accrual receipts less total accrual expenses less the value of unpaid family labor less the opportunity cost of using non-real estate equity. The interest charge is 5 percent. The interest charge reflects the long-term average rate of return that a farmer might expect to earn in a comparable risk investment. This interest charge is charged on average equity in all farm assets except real estate.

Return to Operator Labor and Management is the share of the net farm income without appreciation returned to the operator's labor and management. To calculate Return to Operator Labor and Management, deduct an interest charge of 5 percent on the average real estate equity from the Return to Labor, Management and Real Estate Ownership value.

The average net cash farm income of the twenty-three summary farms is \$ 595. Net farm income without appreciation is negative \$ 4,594. Net farm income with appreciation is \$ 4,815. The difference between these two values, \$ 9,409, is the appreciation in the value of farm assets. These producers benefitted especially from increases in real estate values. However, the opportunity costs of these investments contributed to low returns to Labor, Management and Real Estate Ownership and to Operator Labor and Management: negative \$ 9,586 and negative \$ 16,852 respectively.

#### Farm Statement of Net Worth

The first step in evaluating the financial status of the farm is to construct a Statement of Net Worth (balance sheet) which identifies all the assets and liabilities of the business. The second step is to evaluate the relationship between the assets, liabilities and net worth and changes that occurred during the year. Farm assets are valued at market value. The market value includes appreciation due to changes both in price and changes in inventory quantities. Beef livestock is valued at the Federal-State Livestock Market News quoted prices<sup>7</sup>. For details concerning beef livestock values, see Value of Beef Inventory on page 31.

Financial lease obligations are also included in the balance sheet. The present value of all future payments are listed as liabilities since the farmer (lessee) is committed to make the payments. The present values are also listed as assets, representing the future worth the item has to the business. Farm net worth is the difference between farm assets and farm liabilities.

Liabilities include only farm liabilities and the farm portion of liabilities such as mortgages and auto loans. The farm net worth and equity position of the farms in the summary tended to be very strong with an average net worth of \$ 222,026. The average farm net worth increased from the beginning to the end of the year by \$ 9,898. Farm assets increased by \$ 6,624 and farm liabilities decreased \$ 3,274.

---

<sup>7</sup> Livestock Market News. New York State Department of Agriculture and Markets. Volume 7. Issue 1 and Volume 8. Issue 1.

Table 7.

Farm Statement of Net Worth, Average of Twenty-three Northeast Beef Farms, 1988			
ASSETS	Jan 1, 1988	Dec. 31, 1988	Change
Current			
Farm cash, checking, savings	\$ 1,663	\$ 1,137	\$ (526)
Accounts receivable	299	214	(85)
Stocks & certificates	80	13	(67)
Feed & Supplies	8,196	9,447	1,251
Intermediate			
Cows	\$ 26,134	\$ 23,992	\$ (2,142)
Heifers	3,832	3,738	(94)
Bulls	2,017	2,355	338
Finish Cattle	7,507	6,989	(518)
Other Livestock	1,052	1,189	137
Machinery & Equipment	32,916	33,586	670
FLB/PCA Stock	589	569	(20)
Long-term			
Land & buildings	\$ 160,458	\$ 168,138	\$ 7,680
<b>Total Farm Assets</b>	<b>\$ 244,743</b>	<b>\$ 251,367</b>	<b>\$ 6,624</b>
LIABILITIES & NET WORTH			
Current			
Accounts Payable	\$ 3	\$ 87	\$ 84
Operating debt	1,652	0	(1,652)
Short term debt	946	1,116	170
Intermediate debt	4,684	4,448	(236)
FLB/PCA debt	589	569	(20)
Long-term debt	19,792	18,172	(1,620)
<b>Total Farm Liabilities</b>	<b>\$ 27,666</b>	<b>\$ 24,392</b>	<b>\$(3,274)</b>
<b>Farm Net Worth</b>	<b>\$ 217,077</b>	<b>\$ 226,975</b>	<b>\$ 9,898</b>

## Balance Sheet Analysis

The balance sheet analysis continues by examining financial and debt ratios and factors measuring levels of debt. Percent equity, calculated by dividing net worth by assets, is the percentage of all farm assets owned by the farmer at the end of the year. Equity increases as the value of assets increase more than liabilities. The debt to asset ratio is compiled by dividing liabilities by assets at the end of the year. Low debt to asset ratios reflect strength in solvency and the potential capacity to borrow. Debt levels per cow are the sum of the total farm debt divided by the sum of open and bred cows on all farms.

Net worth is the amount farm assets exceed liabilities. The change in net worth from the beginning to the end of the year is measured without and with appreciation. Change in net worth without appreciation measures how much more (or less) the farm is worth not including changes due to price moves. The average change in net worth for the twenty-three participating farms was \$ 9,898 with appreciation and \$ 489 without appreciation. Increasing net worth on many of these farms is due primarily to increasing real estate markets. The majority of the debt on these farms is structured as long term debt such as mortgages. Eight of the twenty-three farms reported no farm liabilities at the end of 1988.

Table 8.

<u>Balance Sheet Analysis,</u> <u>Average of Twenty-three Northeast Beef Farms, 1988</u>	
<u>Item</u>	<u>Average</u>
<u>Financial Ratios.</u>	
Percent equity	87 %
Debt to asset ratio	0.13
<u>Change in Net Worth</u>	
Without appreciation	\$ 489
With appreciation	9,898
<u>Debt Analysis, Dec. 31, 1988</u>	
Accounts payable as % of total liabilities	1 %
Operating Debt as % of total liabilities	0 %
Current & intermediate liabilities as % of total liabilities	35 %
Long-term liabilities as a % of total liabilities	64 %
<u>Debt Levels Per Cow, Dec. 31, 1988</u>	
Total farm debt	\$1,115
Long-term debt	763
Current & intermediate debt	331
Operating debt & accounts payable	22

The farm inventory details the changes in the value of major farm assets (real estate, machinery & equipment, beef & other livestock and feed & supplies) from the beginning to the end of the year. Beef inventory changes are detailed in Value of Beef Inventory, page 31.

Table 9.

Farm Inventory, Average of Twenty-three Northeast Beef Farms, 1988

	Real Estate	Machinery & Equipment	Beef & Other Livestock	Feed & Supplies
Beginning of Year	\$ 160,457	32,916	40,542	8,196
+ Purchases	400	2,764		
+ Nonfarm Noncash Transfers	0	0		
- Lost Capital	43			
- Sales	83	0		
- Depreciation	<u>991</u>	<u>2,804</u>		
= Net Investment	159,740	32,876	40,542	
+ Appreciation	<u>8,485</u>	<u>1,011</u>	<u>(2,464)</u>	
= End of Year	168,225	33,887	38,078	9,9447

#### Repayment Analysis

Repayment analysis shows the amount of principal, interest and total payments made on debt of various terms. This table can be helpful when making decisions about acquiring and structuring new debt. Total debt payment per cow is the total interest and principal paid during the year divided by the average number of cows. The percentage of debt payment to cash receipts is an indication of the amount of cash available to make debt payments. The average debt payment made by participating beef producers in 1988 was \$ 311 per cow. On the average sixty-two percent of cash receipts is used to service debt. However, the range in debt as a percent of total receipts was 0 % to 748 %. These values have increased dramatically from 1987 when the average debt payment was \$ 125/cow and the debt payment as a percent of total cash receipts was 11 %. When considering only the eleven farms that participated in 1987 and 1988, the change in debt payment/cow was \$90, from \$233 to \$323. The percent of total cash receipts for this group was \$ 47 in 1987 and \$ 94 in 1988.



Table 10.

Repayment Analysis, Average of Twenty-three Northeast Beef Farms, 1988

Debt Payments	Principal	Interest	Total
Long term	\$ 1,620	\$ 1,549	\$ 3,169
Intermediate term	3,282	547	3,829
Short-term	946	214	1,160
Operating (net reduction)	(22)	22	0
Total	\$ 5,826	\$ 2,332	\$ 8,158
Total Debt Payment			
Per Cow	\$ 311		
Percent of total cash receipts	62 %		

Annual Cash Flow Statement

Completing an annual cash flow summary and analysis is necessary to determine how well the cash generated by the business met the annual cash needs of the business. Understanding last year's cash flow is the first step toward planning and managing cash flow for current and future years. This cash flow statement included only farm cash inflow and outflow.

The cash flow statement lists the farm cash inflows at the top of the page, cash outflows next, and the difference at the bottom of the page. Cash inflows include all cash farm receipts, receipts from the sale of farm assets, additional funds borrowed, as well as cash available in the beginning of the year. Cash outflows include all cash farm expenses, capital purchases, principal payments and decreases in operating debt. If the difference between cash inflow and cash outflow is positive, the amount is listed next to the heading "Farm Contribution to Family Living". If cash outflow is greater than cash inflow, the difference is listed next to the heading "Net Nonfarm Contribution to Farm".

For the twenty-three Northeast beef farms, the average cash inflow in 1988 is \$31,030 and the average cash outflow is \$ 34,425. The farm families contributed an average of \$ 3,395 of non-farm income or savings to the farm.

Table 11.

Annual Cash Flow Statement,  
Average of Twenty-three Northeast Beef Farms, 1988

---

Cash Inflows

Beginning farm cash, checking & savings	\$	1,663	
Cash farm receipts		25,944	
Sale of assets : Machinery		128	
Real estate		83	
Sale of Stocks and Certificates		76	
Money borrowed (intermediate & long-term)		2,020	
Money borrowed (short-term)		1,116	
Increase in operating debt		0	
 TOTAL			 \$ 31,030

Cash Outflows

Cash farm operating expenses	\$	24,850	
Capital purchases: Breeding livestock		498	
Machinery		2,764	
Real estate		400	
Other		9	
Purchase of Stocks and Certificates		0	
Principal payments (intermediate & long-term)		4,958	
Principal payments (short-term)		946	
Decrease in operating debt		0	
 TOTAL			 34,425
 NET NONFARM CONTRIBUTION TO FARM			 <hr/> 3,395

---

Beef Enterprise Analysis

The beef enterprise receipts and expenses, table 12, shows the average receipts and expenses attributed to just the beef enterprise. The purpose of the beef enterprise table is to calculate the profitability of the beef enterprise and to determine to what extent the beef enterprise contributes to the profitability of the entire farm. Non-beef income and expenses such as income from other livestock, other livestock feed and other operating expenses are not included. Other income or expenses which may be wholly or partially attributed to the beef enterprise are allocated by the participating beef producer on a percentage basis. Because most of participating beef producers had only a beef enterprise, the beef enterprise analysis is very similar to the farm income and expenses, tables 4 and 5.

Table 12.

Beef Enterprise Receipts and Expenses  
Average of Twenty-three Northeast Beef Farms, 1988

	Cash	Change	Change in	Accrual	Accrual <sup>8</sup>
RECEIPTS	Receipts	in Inventory	Acct's Rec'bl	Receipts	Inc./cow
Feeder calf sales	\$ 3,626	\$ 276	\$ (8)	\$ 3,894	\$ 115
Finished cattle	8,137	(795)	0	7,342	217
Breeding stock	8,207	(1,810)	(100)	6,297	186
Cull cattle	1,734		0	1,734	51
Crop Sales	1,042	871	0	1,913	56
Custom work	0		0	0	0
Government payments	836		0	836	25
Misc. receipts	<u>443</u>		0	443	13
Total Cash Receipts	\$ 24,025				
TOTAL ACCRUAL RECEIPTS		\$ (1,458)	\$ (108)	\$ 22,459	\$ 663
	Cash	Change in	Change in	Accrual	Accrual <sup>9</sup>
EXPENSES	Expenses	Inventory	Acct's Pay'bl	Expenses	Exp./cow
Hired labor	\$ 2,069	\$	\$	\$ 2,069	\$ 61
Feed					
Beef grain purchased	2,772	(71)	29	2,730	81
Beef roughage purchased	867	(39)	29	857	25
Machinery					
Gasoline & oil	1,314	(2)		1,312	39
Machinery repairs	2,113			2,113	62
Farm auto expense	168			168	5
Machinery hire & lease	295			295	9
Livestock					
Vet & medicine	596	(12)	4	588	17
Breeding expense	524	(136)		388	11
Feeders purchased	719			719	21
Stockers purchased	26			26	1
Mktg & other beef exp.	1,005	(17)		988	29
Crops					
Fertilizer & lime	1,243	16		1,259	37
Seed, spray & oth crop	616	(6)		610	18
Real Estate					
Land, bld & fence rep.	1,436	(22)	22	1,436	42
Taxes (real estate)	1,433			1,433	42
Rent & lease	754			754	22
Other					
Insurance	1,142			1,142	34
Telephone	182			182	5
Electricity	676			676	20
Interest Paid	2,233			2,233	66
Misc. beef expenses	<u>900</u>	<u>(4)</u>	<u>84</u>	<u>896</u>	<u>26</u>
Total Operating Exp.	23,083	(293)	84	22,874	673
Breeding Stock Purch.	498			498	16

## Herd and Crop Management

This section reports production information for the cropping program and the beef herd. Production efficiency is a key ingredient of a consistently profitable farm. Crop yields, calving percentages, weaning weights and other productivity measures must be high to be successful in the competitive beef industry.

### 1988 Crop Production

On many cow calf operations, decisions concerning the cropping program could make a big difference in profitability. A complete evaluation of available land resources, how they are being used, how well crops are producing and what it costs to produce them is required to evaluate alternative cropping and feed purchase choices.

In table 13, forage crop yields are reported as total tons dry matter produced and tons dry matter produced per acre. Corn Silage production is shown on a wet and dry matter basis. Corn grain, oats and wheat are measured in dry bushels. The acreage devoted to pasture is also shown. Crop acres and yields compiled for the average represent only the number of farms reporting each crop. Twenty-two of the twenty-three farms produced dry hay or hay crop silage. One farm did not produce any crops. Seven farms produced corn silage.

Table 13.

1988 Crop Production, Average of 23 Northeast Beef Farms

Crop	Farms	Acres	----- Production -----	
			Total	Per Acre
Hay crop	22	80	138	2.0 tn DM
Corn silage (wet)	7	43	415	11.4 tn
Corn silage (dry)			148	3.9 tn DM
Total forage	22	92	181	2.1 tn DM
Corn grain	6	18	1413	81.1 bu
Other crops	3	9		
Tillable pasture	14	51		
Crop residue pastured	4	79		

Table 14 contains summaries of productivity in various categories. The average herd and crop management measures include only those farms reporting a given measure. The range is the top and bottom value of all farms in the summary.

### Herd and Crop Management Analysis

The herd productivity on the twenty-three farms tended to be very good. Conception rate, percent born and percent weaned averages were all in the 90 percent range. The conception rate is the percentage of cows and heifers exposed to the bull who are confirmed pregnant. Average weaning weight is indicative of genetic capability of the herd as well as pasture management. Weaning weights for the low end of the range are below a U.S. average of approximately 400 lbs. and the high end is above an average of 525 lbs. or higher for the top 5 percent.

On the average farm, 8 calves were sold as feeders weighing 491 pounds at an average price of \$86.60 per hundredweight and 12 were sold as finished cattle at an average price of \$69.30 per hundredweight. As discussed in Economic Factors Affecting Northeast Beef Producers, page 4, the demand for feeder calves was strong in 1988. However, if cost of gain is competitive, retaining ownership to finished weights can be an effective way to increase profits and decrease risk by selling more weight per cow maintained and spreading price risk over two phases of beef production.

Average crop yields reported were typical of Northeast conditions. However, when the forage production is at the low end of the range, .7 ton dm/acre, it is probably more cost efficient to buy forage than harvest a low yield. The direct crop expenses/crop acre also varied widely. Direct crop expenses include the accrued expenses for fertilizer, lime, seed, spray and other crop expenses divided by the total number of crop acres.

It is difficult to evaluate the importance of acres/cow kept because of variations in land and production costs/acre. One of the key measures of efficiency is the number of days productive pasture is available. Every day on pasture saves an average of 50 cents to one dollar in feed costs<sup>10</sup>. The average days on pasture was 175, which is typical of New York State. However, it is not known how productive the pasture was over the 175 days. A decline in pasture quality and quantity in late summer and fall can reduce calf gains by 1 to 2 lb/day<sup>11</sup>. An important measure which should be considered when measuring productivity is total feed cost/cow. The cost of increasing land productivity must be weighted against reductions in feed costs/cow and the increased number of cows that can be kept. However, increasing the stocking rate can help dilute fixed overhead costs, especially machinery costs.

---

<sup>10</sup> Philip Teague, Soil Conservations Service Economist. Personal communication.

<sup>11</sup> Dan G. Fox, Fact Sheet 1300B. Cornell Beef Production Manual. Cornell University 1986.

Table 14.

Herd and Crop Management Analysis,  
Average and Range of Twenty-three Northeast Beef Farms, 1988

Item	Average	Range
Conception Rate %	95.7	75.0 - 100
Calves weaned %	92.3	60.0 - 100
Calves born %	92.2	33.3 - 100
 Average weaning weight	 549	 394 - 665
Average calf weaning age, days	207	180 - 242
Average cow weight at weaning, lbs.	1,144	900 - 1,600
Number of bulls used	1.5	0 - 5
 Number of feeders sold	 8.3	 0 - 42
Average weight / feeder sold	491	300 - 663
Avg. feeder price received/cwt.	\$ 86.60	\$ 68.17 - 128.35
 Number of finished cattle sold	 12.3	 0 - 90
Average weight / finished cattle sold	952	600 - 1450
Ave. finished cattle price received/cwt.	\$ 69.30	\$ 44.65 - 150.00
 Tons hay crop dry matter per acre	 2.0	 .7 - 4.0
Tons forage dry matter per acre	2.1	.7 - 4.0
Tons forage dry matter harvested/cow	8.6	.7 - 49.4
Direct crop expenses /crop acre	\$ 25.80	\$ 0 - 150.78
 Tillable acres /cow	 6.5	 0 - 27.0
Pasture acres /cow	3.4	0 - 9.0
Days on pasture	175	0 - 238

#### Capital and Labor Efficiency Analysis

Capital efficiency factors measure how intensively the capital is being used in the farm business. The labor analysis is a listing of the hours of work contributed to the farm as estimated by the business summary participant. The estimated hours are used to determine the full-time equivalent months of labor used by the farm. A value is given to the operator and farm family's unpaid labor.

The capital turnover is a measure of capital efficiency as it shows the number of years of farm receipts required to equal or "turnover" capital investment. It is computed by dividing the average farm assets by the year's total farm accrual receipts. The average capital turnover for the twenty-three farms is 12.5 years. Capital turnover varied between 2.6 and 41.7 years.

The value of the operators labor to the beef farm is estimated at \$900 per month (one month of labor equals 200 hours). The value of the family unpaid labor is estimated at \$ 650 per month. The value of the unpaid family labor is the months of labor (hours of labor divided by 200) multiplied by \$650.

Table 15.

Capital & Labor Efficiency Analysis,  
Average of Twenty-three Northeast Beef Farms, 1988

---

Capital Efficiency (Average for Year)

	<u>Per Cow</u>
Farm capital	\$ 11,194
Real estate	8,356
Machinery & equip.	1,247

Capital Turnover, years                      12.5

Labor Force

	<u>Hours</u>
Operator(s)	1,635
Family paid	30
Family unpaid	330
Hired	428
Total	2423/200 - 12.12 Months Labor

Labor cost

	<u>Total</u>	<u>Per Cow</u>
Value of Operator(s)		
Labor (\$900/month)	\$ 8,173	\$ 594
Family unpaid (\$650/month)	1,157	84
Hired	2,093	49
Total Labor	\$ 11,423	\$ 727

Machinery Cost	\$ 7,271	\$ 274
Total Labor & Machinery Costs	\$ 18,694	\$ 1,002
Hired Labor & Machinery Costs	\$ 9,364	\$ 323

---

## Beef Herd Analysis

### Livestock Market Values

The number of head, the average weight and price assigned to the classes of beef livestock at the beginning and end of the year is shown in table 16. The price of pregnant cows and heifers is calculated on a per head basis. All other prices are in dollars per pound. Beef livestock prices are based on Federal-State Livestock Market News quoted values. Unlike machinery, real estate and other farm assets, all of the beef livestock in the Beef Farm Business Summary are given the same market values. This is done to avoid bias in the comparative values due to discrepancies in farmer estimated livestock values.

Table 16.

Livestock Market Values and Stock Numbers,  
Average of Twenty-three Northeast Beef Farms, 1988\*

Cattle Type	----- Jan. 1, 1988 -----			----- Dec. 31, 1988 -----		
	# Hd	Lbs/head	Price	# Hd	Lbs/head	Price
Bred cows & heifers	34.1	1,116	\$ 740.00/hd	32.0	1,123	\$ 740.00/hd
Open cows	1.1	1,165	0.43/lb	.6	1,138	0.48/lb
Replacement heifer	7.7	681	0.73/lb	7.2	717	0.73/lb
Service bulls	1.7	1,634	0.55/lb	1.4	1,691	0.60/lb
Other bulls	.5	1,103	0.55/lb	1.3	1,017	0.60/lb
Feeder cattle**	7.3	474	0.75/lb	7.5	486	0.75/lb
Finish cattle						
(800 lbs or less)	3.2	587	0.75/lb	3.7	663	0.75/lb
Finish cattle						
(> than 800 lbs)	5.5	930	0.70/lb	3.8	912	0.70/lb

\* Data sources: Federal-State Livestock Market News quoted values and estimates by Peter Comerford, New York State Department of Ag. & Markets.

\*\* Feeder and finish cattle weighing 800 pounds or less are valued at \$.75/lb, January 1 and December 31. Feeder and finish cattle weighing more than 800 pounds are valued at \$.70 January 1 and December 31.

### Value of Beef Inventory

The change in value of the beef inventory is shown on table 17. The first column indicates the value of animals held at the beginning of the year at beginning of the year prices. The second column, Change in inventory without appreciation is the change from the beginning to the end of the year in livestock numbers valued at the beginning of the year prices. The next column, appreciation, shows the increase (or decrease) in value due to price changes. The last column shows the end of the year market value of the livestock inventory.



may vary from table 9, due to changes in the inventory of other livestock.

Table 17.

Value of Beef Inventory (Jan. 1, 1988 and Dec. 31, 1988),  
Average of Twenty-three Northeast Beef Farms,

	Beg. of year + Change in inv. + Appreciation			End of year
	value	w/o appreciation		value
Pregnant Cows & Heifers	\$ 25,565	\$ (1,598)	\$ (320)	\$ 23,647
Open Cows	568	(260)	36	344
Rep. Heifers	3,833	(94)	0	3,739
Service Bulls	1,698	(341)	123	1,480
Other Bulls	319	483	73	875
Feeder Cattle	2,563	276	0	2,839
Finish Cattle	4,944	(795)	0	4,149
<b>TOTAL</b>	<b>\$ 39,490</b>	<b>\$ (2,329)</b>	<b>\$ (88)</b>	<b>\$ 37,073</b>

### Conclusion

In a six state survey conducted in 1976, Northeast beef producers attributed their selection of a beef enterprise to a desire to utilize existing land and buildings, increase income, keep the land open, use family labor, and take advantage of tax management opportunities<sup>12</sup>. The producers surveyed had a mixture of goals and objectives, the profit motive was not necessarily their top priority. We assume the motives on these twenty-three farms are similar.

The negative average cash flow and low cash farm income combined with the favorable equity position due in part to appreciation, indicate that many of the producers are using the beef farm as a "forced savings account". By purchasing farm machinery, cattle and especially land they are making a long term investment. This is not to suggest that all beef farmers are real estate speculators.

As a result of speaking casually with many of the cooperators, the authors have concluded that for many the primary desire is to live in the country and have a wholesome life style. Since a beef cattle enterprise makes good use of existing land and buildings and family labor while being a farm enterprise that is compatible with off farm work, it is a common choice.

<sup>12</sup> Schwab, G. and E. Garst. "A Description of Beef Cow-Calf Producers in Six States -- Their Enterprise, Motivation, and Sources of Information." Beef Production Reference Manual Fact Sheet 001, Cornell University, 1976.

Although the greater part of farm income tax advantages have disappeared with the 1986 tax reform act, the conversion of some fixed non-farm expenses (utilities, taxes, vehicles, etc.) to business use may be a benefit to some beef producers. There is also a hobby component to many beef cow-calf farms. Even though the farm may be losing money, the enterprise is continued because the farmer and family simply like working with the animals and the lifestyle the part time farm provides.

Some of the cooperators in the 1988 Beef Farm Business Summary did increase their income. Of the twenty-three participating farms, eight had a positive net cash farm income, seven had a positive net farm income without appreciation, and twelve had a positive net farm income with appreciation. In 1988, as in the 1986 and 1987 Beef Farm Business Summaries, the average producer increased net worth but did not make a profit (as measured by Accrual Net Farm Income). The reasons for this vary from farm to farm. In general, however, the farms in the summary which had negative net farm incomes, had too great a capital investment for the size of their business and high operating costs per cow. Increasing cow numbers and careful budgeting when making a capital purchase decision could increase the returns on these farms. However, the primary goal on these farms may not be profit maximization. In which case, increasing herd size may diminish the owner's enjoyment of the farm.

For most part time beef producers, the true economic success of the beef herd cannot be determined unless costs are carefully divided between those which are minimal requirements for the beef enterprise and those which are made because of personal desires or are a part of family living expenses. The small beef cow-calf enterprise is commonly viewed as being unprofitable and a hobby which must be supported with outside income. This perception limits support for beef producers from local extension, farm credit institutions and agribusiness. To increase our understanding of the strengths and weaknesses of beef herd enterprises in our region, we must develop a larger beef farm business data base. This data can then be used to help individual beef producers become more profitable and provide an understanding of the niche cow-calf farms fill in the Northeast region's economy.

Other Agricultural Economics Extension Publications

No. 89-22	Management Resources	G. Hutt R. Milligan J. Kauffman III E. Claypoole
No. 89-23	Milk Production Records for Management Control	S. Telega G. Hutt
No. 89-24	Farm Management Planner	G. Hutt S. Telega
No. 89-25	Management Control Clinic	G. Hutt J. Kauffman III R. Milligan
No. 89-26	Cornell Cooperative Extension Farm Business Management Program Guidelines, Suggestions and Resources	S. Smith W. Knoblauch G. White
No. 89-27	Budgeting Data for Limited Resource Dairy Farms, New York	R. Murray-Prior B. F. Stanton
No. 89-28	Milk Quality, A Pro-Dairy Management Focus Workshop for Farm Managers -- A Facilitator's Manual	R. A. Milligan
No. 89-29	Milk Quality, A Pro-Dairy Management Focus Workshop for Farm Managers -- A Participant's Guide	R. A. Milligan
No. 89-30	The Economics of Yard Waste Composting in Westchester County, New York	S. Sherman
No. 89-31	Feeding Management: A Pro-Dairy Management Focus Workshop for Dairy Farm Managers, Teacher's Manual	L. Chase G. Bigger J. Conway
No. 89-32	Feeding Management: A Pro-Dairy Management Focus Workshop for Dairy Farm Managers, Participant's Manual	L. Chase G. Bigger J. Conway