

Sustainable Agriculture Research and Education Program

Final Report – Project # 99FNE99-245

Goals of the Project

The goal of the '99-2000 Rotational Grazing Project was to help a group of farmers establish intensive rotational grazing on their farms and/or help farmers who have a rotational grazing system to improve their management of their systems to sustain profitability and reduce potential non-point pollution.

Our specific objectives were: 1) to help farmers understand the benefits of rotational grazing management and determine if the system is appropriate for their operation, 2) to help farmers establish rotational grazing systems and to help those with existing systems to improve their management of those systems and sustain their profitability, 3) to help farmers analyze the effects of rotational grazing on the profitability of their operation, 4) to help farmers reduce their potential impact on the environment.

Farm Information

Our rotational grazing project involved 6 farms that were either already utilizing rotational grazing or wanted to establish a rotational grazing system. These 6 farms averaged 60 cows producing an average of 60 pounds of milk per cow per day. They utilized an average of 40 acres of pasture. These farms were typical of the farms in this area in that crops grown also included hay crop, corn silage, corn grain, oats, and wheat.

Cooperators

Heather Sweeney, Cornell Cooperative Extension of Oneida County, Dairy Specialist – Provided consultation to participating farmers on pasture layout and design, pasture management, and dairy nutrition.

Jeff Miller, Cornell Cooperative Extension of Oneida County, Agronomist – Provided consultation to participating farmers on pasture layout and design, soil fertility, and pasture management.

Eric Young, Cornell Cooperative Extension of Oneida County, Agronomist – Provided consultation to participating farmers on pasture layout and design, soil fertility, and pasture management.

Jackie Hilts, Cornell Cooperative Extension of Oneida County, Farm Business Specialist – Conducted a Dairy Farm Business Summary on 5 participating farms, including an economic analysis of rotational grazing on each farm.

Participating Farmers – Cindy Gallagher – Sangerfield, NY; Tim Clark – Deansboro, NY; Tom Cassidy – Barneveld, NY; Greg Pilbeam – Rome, NY; John Grems – Lee Center, NY; Wed Broadbent – Remsen, NY.

Project Details

Interested dairy farmers were invited to attend an informational meeting in April 1999 at which time the objectives of the project were laid out. By the end of the meeting, 6 farmers had indicated interest in being involved in the project. One farm had chosen not to complete a Dairy Farm Business Summary, however wanted to be included in other aspects of the project.

Jeff Miller and Heather Sweeney then visited each farm to set up paddocks, layout, and diagram the grazing system on each farm. Each farm was then responsible to implement the grazing plan for their farm. Each farm was visited by Heather, Jeff, or Eric on a bi-weekly basis. At each visit pasture condition and utilization were evaluated. Recommendations were made based on rotation management, pasture samples, weed control, soil samples, milk chart evaluation, and body condition score of the cows.

Each farm kept track of daily milk production from May 1 through October 1999. This was used to evaluate response in milk production and rotation management. We also monitored fresh cows (fresh less than 30 days as of May 1st) on 5 of the farms by recording body condition scores. These scores were used to monitor and when needed make adjustments in ration supplementation.

Five farms also completed a Dairy Farm Business Summary (DFBS) for grazing farms. These summaries were used to analyze the profitability of each farm, including the effects of rotational grazing. Each farm's information was also included in the New York State DFBS for Grazing Farms, which will allow them to identify their farm's strengths and weaknesses by comparing their data to other grazing farms throughout the state.

Findings and Accomplishments

Of the 6 farms that completed the 1999-2000 grazing project, 4 were new start-ups and 2 had been rotationally grazing previously where improvements and closer evaluation of their system was conducted. Drought conditions during the summer of 1999 presented major challenges to all grazers and impacted the effects of rotational grazing on each farm. The effects of the drought were much more pronounced on farms where pasture acreage was limiting. These farms had to supplement more feed in the barn which affected the costs savings they were hoping to achieve through rotational grazing. On all farms, the drought made clipping and rotation management extremely important in order to take full advantage of pasture growth and rainfall seen on each farm. Soil fertility also proved to be a key factor in the impact of drought on grazing systems. Farms where soil sampling and fertility improvements had been carried out prior to the '99 grazing season saw more pasture growth and forage available for grazing.

Despite the drought, an accomplishment on most farms was maintaining a consistent level of milk production throughout the grazing season. Most farms had traditionally experienced a slump in production in the heat of summer, around July and August, as pasture productivity declines and growth rates slow down. A lot of these swings in milk production were avoided through this project by managing the rotation to provide the cows with a more consistent supply of high quality grass. We were routinely evaluating pasture growth, taking pasture samples, and monitoring body condition scores and were more quickly able to make adjustments in rations to maintain milk production.

We also encouraged each farm to make water available to the cows in each paddock. On farms where this was accomplished, very positive results were seen in milk production and pasture utilization. This verifies the importance of providing water to each paddock in terms of taking full benefit of a rotational grazing system.

Of the 5 farms that completed the Dairy Farm Business Summary, 3 of the farms met the profitable grazing farm definition of greater than \$750 net farm income per cow. None of the 5 farms that completed a dairy farm business summary through this project had completed one previously, therefore a financial comparison to 1998 or prior years was not possible. By completing the DFBS, these 5 farms now know their financial situation, what the strengths and weaknesses of their business are, and can act upon the weaknesses to improve their overall business. We will be following up with each farm to set business goals for the year 2000 and develop plans to meet those goals.

Site Information

This rotational grazing project verified the fact that there are varying degrees and types of grazing systems and successful systems can be set up on various types of land conditions. About half of the farms set up rotational grazing systems on old permanent pasture, while the other half utilized meadows and former hay ground for their grazing system. Some farms grazed their cattle both day and night, while others grazed part of the day because of limited pasture acres. Some farms utilized rotational grazing in order to minimize costs and milk production level was not a major concern, while others wanted to maintain a certain level of production and, therefore, supplemented feed more heavily in the barn. Regardless of the situation and despite the drought conditions, benefits were seen on each farm by more intensively managing the pasture forage and providing the cow with a high quality, low cost feed.

Economic Findings

See Attached: 5 Oneida County Intensive Grazing Farms Vs. NYS Non-Grazing Farms

The attached chart indicates the following:

Business Size: The business size and total production of these 5 Oneida County grazing farms is smaller than non-grazing farms throughout New York State. However production per cow is greater, especially on the average of the 3 profitable farms.

Labor Efficiency: Labor efficiency is lower than the NYS non-grazing farms.

Milk Production Costs: Milk production expense items that are usually influenced by rotational grazing such as hired labor, grain and concentrate, vet and medicine, and total operating cost per cwt. were all lower for the 5 grazing farms compared to non-grazing farms. This would indicate that anticipated cost savings were achieved on these farms.

Profitability: Net farm income was higher on the 5 Oneida County grazing farms compared to non-grazing farms, as was labor and management income per operator. Rates of return on equity capital and all capital were also higher, considerably so on the 3 profitable grazing farms.

(Comparison is based on non-grazing farm data from 1997 New York State Dairy Farm Business Summary, as this is most recent data available with a similar milk price to 1999)

Have the results generated new ideas?

The results of this project further verified our belief that rotational grazing is a profitable management option for many farms in this area, primarily those with less than 100 cows. Most farms of this size are using some type of pasture and could realize significant benefits by more intensively managing their pasture through rotational grazing. Many of these farms are looking at ways to increase milk production and/or reduce expenses and rotational grazing may be a way for them to achieve this.

Future Use of Practice

We plan to continue to encourage the adoption of rotational grazing on farms in this area. With ever tightening profit margins, farmers are looking for ways to increase production and/or decrease expenses. Farm operators can adopt rotational grazing management at different levels of intensity, integrate it into their farming system, and meet their goals.

Message to Other Producers

We have had several farms interested in rotational grazing and have passed on information and lessons learned from the rotational grazing project to them. We use this project and results to demonstrate

that there are various extremes and types of rotational grazing systems and there are benefits to all of them. We also use these farms as real life examples of different set-ups and farm situations that others can relate to or look at when deciding if, or what type of rotational grazing system to establish.

Outreach Program

We have a few farms that we already know are planning to establish rotational grazing systems in 2000. We are planning to work with these farms and any others that request assistance in pasture layout and design, rotation management, troubleshooting throughout the season, and sharing any other information that may help them utilize rotational grazing technology. We also plan to write an article summarizing the results of the grazing project. This article will go out to local media and will be published in the Cooperative Extension newsletter "Ag Report", which is received by approximately 600 dairy farmers in Oneida and Madison Counties.

5 ONEIDA COUNTY INTENSIVE GRAZING FARMS VS. NON-GRAZING FARMS

New York State Dairy Farms

Item	OC Grazing Farms	Non-Grazing Farms*	Profitable ** Grazing Farms	Profitable Non-Grazing Farms
Number of farms	5	48	3	61
<u>Business Size and Production</u>				
Number of cows	64	83	68	87
Number of heifers	53	58	52	67
Milk sold, lbs.	1,152,967	1,453,758	1,395,848	1,603,331
Milk sold/cow, lbs.	18,015	17,463	20,268	18,422
Tillable acres, total	209	266	196	282
<u>Labor & Capital Efficiency</u>				
Worker equivalent	3.14	2.78	3.07	2.98
Milk sold/worker, lbs.	359,151	522,935	459,239	538,031
Cows per worker	22	30	22	29
<u>Milk Production Costs</u>				
Selected costs/cwt.				
Hired labor	\$0.61	\$1.05	\$1.01	\$1.27
Grain & concentrate	\$3.74	\$4.55	\$3.44	\$4.13
Purchased roughage	\$0.46	\$0.25	\$0.46	\$0.19
Vet & medicine	\$0.42	\$0.37	\$0.33	\$0.35
Operating cost/cwt.	\$11.24	\$11.90	\$9.94	\$10.67
Purchased dairy feed/cow	\$624	\$839	\$697	\$796
Purchased grain & concentrate as % of milk receipts	27%	33%	23%	30%
Vet & medicine/cow	\$65	\$65	\$72	\$65
Feed & crop expense/cwt.	\$5.28	\$5.64	\$4.39	\$5.28
<u>Profitability Analysis</u>				
Net farm income (w/o appreciation)	\$38,083	\$9,502	\$59,383	\$33,527
Net farm income per cow (w/o apprec)	\$595	\$114	\$873	\$385
Labor & management income/operator	\$12,442	\$-12,589	\$26,456	\$2,457
Rates of return on:				
Equity capital with appreciation	1.08%	-5.8%	12.9%	1.2%
All capital with appreciation	2.4%	-1.3%	11.2%	2.7%

*Farms with similar herd size and production per cow as the 5 grazing farms.

** Farms with net farm income/cow without appreciation greater than the state average of \$750.