



## Penn State Cooperative Extension Capitol Region Dairy Team

### DAIRY SYSTEMS: IS GRAZING IN YOUR FAMILY FARM'S FUTURE?

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Hold on a minute! Before you turn the page thinking this article is not for you, take a moment to read why increasing numbers of farmers are considering grazing for their dairy herds.

I was raised on a "traditional" dairy operation where grazing cattle, while appreciated for foot health and cow cleanliness, was thought of as unfavorable to high milk production and profits. However, recent research data from around the country illustrates that the rotational "graziers" just may be onto something pretty exciting — and some of their ideas may be useful in whole or in part for many conventional farms.

In the past few years, unstable milk prices and dry weather have caused many smaller producers to take a hard look at their dairy operations and see where changes can be made to improve profits. Some farm owners have increased herd size to produce enough income to provide for their families, with a good number taking the traditional route of confinement operations with large debt loads to do so. While this can work well, other producers simply do not want to go into large amounts of debt to continue the dairy operation. These producers are looking at alternatives for making milk at lower cost, one of which can be a grass-based dairy.

Let's define a grass-based dairy. First of all, a grazing operation could be defined as one who depends on "carefully-managed" pastures to provide more than 30 percent of the forage for the milking herd. "Carefully managed" does not mean turning out the milking herd onto the side of a hill — it means selecting species and forage mixes that will result in high nutrient levels, planted in highly fertile soils. Skilled graziers manage their pastures as a crop, monitoring growth rate, quality, yields, and more. The grazing dairy producer will move his herd from paddock to paddock to allow for regrowth and higher overall yields. Intensive grazing will often take closer supervision than a traditional feeding program.

Keep in mind that in many cases, the most successful grazing dairies are not the ones who have the lowest inputs of grain and fertilizer, but rather those that average the lowest cost per CWT of milk sold. Oftentimes, the most profits are seen by those farms that do feed substantial amounts of grain and keep fertility high in their pastures. The amount of milk sold per farm is still important, often achieved with higher stocking rates.

According to Dr. Carl Polan of

Virginia Tech, "The highest quality feed that you can make available to your cows is the cheapest price. Lush growing clover-grass that has been managed by intensive grazing is high in both crude protein and energy. Young, lush plants have an expected net energy (NEL) content of 0.75 mcal/pound or more; compare that to recommended dietary NEL of 0.78 for a heavily lactating cow or for corn silage NEL of 0.72. In addition, the feed value is always more when grazed directly. It has been proven more than once that forage quality decreases when ensiled and even greater losses occur when made into hay."

While intensive grazing is certainly not for everyone, it can be a great way to keep overhead and operating costs down while maximizing "pounds of milk sold" per farm worker at the dairy. Equipment costs are often reduced, making a grass-based operation ideal for a young person who cannot afford to purchase the equipment needed for a conventional cropping operation. Additionally, grazing can improve cow health by keeping cows off concrete and mud and on a clean sod, reducing the involuntary cull rate. Grazing can also reduce nutrient run-off from barns and holding areas.

Of course, not all grazing operations are profitable, just as not all conventional farms make money. In either operation, good management is the best indicator of success. So which system is more profitable, grazing or conventional? It very much depends on your farm, family, and land resources available.

A report by Kriegl, et. al, evaluated 2000 financial data from the "Great Lakes Grazing Network," a group consisting of various farmers, researchers, and industry leaders in several states. To be considered a grazer in these comparisons, farms must have harvested more than 30 percent of their grazing season forage needs as pasture; they also needed to provide cows with fresh pasture at least once every three days. Less than 10 percent of the herds in the grazing group were "seasonal" farms.

The researchers then com-

pared financial and production data from grazing herds with data from conventional farms in New York and Wisconsin, as these states collected similar financial information. For these herds, they compared Net Farm Income From the Operation (NFIFO) per cow both with labor cost factored in and without deducting labor compensation. The two measures were used to compare farms that used a good deal of hired labor (usually the conventional operations) to farms that often relied entirely on unpaid family labor.

The results are included in the table reproduced here.

As you can see from this data, the reduced pounds of milk per cow on the grazing dairies were more than offset by their control of labor and operating costs. The average grass based farmer in both states was more profitable than their confinement counterparts even though their production per cow was lower. When labor costs were not considered, the New York confinement dairies had a Farm Income per cow of \$663 versus \$534 per cow for grazing farms, but with labor costs deducted, the graziers had an overall advantage.

It also appeared from herds in these two states that smaller grazing farms (under 100 cows) had a higher profit margin than grazing operations with more

found in milk fat — nonfat milk contains little CLA. Research has shown that CLAs have certain "anti-cancer" properties; moreover, increased consumption of CLAs has been related to decreased fat deposition in the body and an enhanced immune system function. This means that milk from cows in grazing herds may have more health benefits and therefore could be more attractive to the consumer. Wouldn't this be a great way to market dairy products?

Intensive grazing is not for every producer. If you enjoy fieldwork and working with equipment, a grazing operation may not suit your abilities. If you have large investments in machinery or new buildings, you will need to carefully evaluate your ability to meet these payments with your existing herd under a grazing system. The grazing farms with high herd averages have plenty of high energy forages available and are able to keep dry matter intake high. (It is a good idea to work with a nutritionist who understands grazing and has experience in this area.)

If you do not have access to fertile, well-drained soils, grazing may not work for your farm. Tim Fritz of King's Agriseeds notes that a dairy generally needs a minimum of one acre per cow for intensive grazing or .5 acre/cow

for partial grazing, although these numbers can vary from farm to farm.

Who should consider grazing? First and foremost, you must enjoy working with cows! You need to be able to "think out of the box" as well as have the ability to manage the pastures, yields, and feed intake closely, because changes can occur on a daily basis.

Expansion through grazing can allow you to spend your money on productive units (that is, "cows") instead of facilities. If you are a small, "traditional" farmer with older equipment and facilities but plenty of land available, a gradual transition to grazing (either intensive or partial) can be very profitable. If you are just starting out with access to good soils and a land base to support a grazing operation, it would definitely pay to take a closer look at this system before taking on a great deal of debt.

Take a look at grazing — it may fit well into your family farm's future!

Note: the Pennsylvania Grazing and Forage Conference will be conducted at the Holiday Inn in Grantville March 5-6. Contact Marvin Hall at (814) 863-1019 or Lisa Crytser at (814) 865-2543 for more information. For more information on grass-based dairying, contact Beth Grove at the Lancaster County Extension office at (717) 394-6851.

Table 1. 2000 Financial Performance of Graziers in New York and Wisconsin

	WISCONSIN		NEW YORK	
	Grazing	Confinement	Grazing	Confinement
Number of herds	16	605	65	239
Number of cows per herd	65	109	93	294
Average production / cow	16,404	20,202	17,107	22,167
NFIFO per cow. (without considering labor compensation)	689	640	534	663
<b>NFIFO per cow</b>	<b>617</b>	<b>296</b>	<b>315</b>	<b>181</b>

Kriegl, et. al, 2002

than 100 cows. The seasonal dairies (only seven in the data set), however, had a lower NFIFO profit per cow than the average nonseasonal herd.

Closer to home in Maryland, the Maryland Cooperative Extension Service has evaluated conventional and grass based dairies for several years. Extension agent Don Schwartz and his colleagues have compared 24 conventional dairies with 12 grass-based operations for the past five years. The grazing dairies in the comparison averaged 86 cows per farm. The conventionally managed herds averaged 117 cows per farm.

The results are listed here.

For these 36 farms, the average of years 1997-2001 showed that the grazing operations produced an additional profit of \$1.09 per CWT of milk sold, or a \$100 per cow higher profit than conventional herds. It was also interesting to note that the grazing herds averaged a lower cost of 62 cents/CWT for feed, seed, and fertilizer than the confinement operations, as well as a 57 cent lower labor cost per CWT.

The Maryland grazing operations generated a lower profit per farm (\$49,663 vs. \$56,017), but this was most certainly due to the lower total cow numbers on the grass based dairies.

Another more "long-term" benefit being investigated is the higher "conjugated linoleic acid" (CLA) content of milk from cows fed grass-based diets. CLAs are

Table 2. 1997-2001 Financial Performance of Graziers in Maryland

	Grazing	Confinement
Number of herds	12	24
Numbers of cows per herd	86	117
Average production /cow	16,700	20,000
Purchased feed, seed, fert / CWT	4.69	5.31
Labor cost / CWT	61	1.18
Profit per FARM	49,663	56,017
Profit per CWT	3.49	2.40
Profit per COW	580	480

U. of MD, 1/9/2003

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