Wallace Center
AT WINROCK INTERNATIONAL

LOW-OVERHEAD GRAZING DAIRY

Wakiana Dairy

Wakarusa, Indiana

Farm Summary:

Wakiana Dairy is operated by Mike, Sue, and Ben Martin in Wakarusa, Indiana. It is an excellent example of a larger herd, low-overhead dairy grazing farm milking about 400 spring-calving cows on a total of about 400 acres of owned and rented land. The Martins sell conventional milk through the Michigan Milk Producers Association (MMPA) cooperative. The Martins focus on maximizing nutrient intake from grazed pasture and being good stewards of the land.

Farm owners: Mike, Sue, & Ben Martin

400
Cows
(plus youngstock)

16,000
Lbs. milk per cow

1m
Lbs. milk shipped per worker

400
Acres
(230 pasture)

6.5
Full-time equivalent workers

Farm History and Current Infrastructure:

Mike and Sue Martin have been on their farm near Elkhart, Indiana since 1984. They bought the farm from Mike's uncle in 1995 and raised their kids there. Since 2011, their son Ben has been managing the farm with them and became a partner in 2018.

Their home farm is 88 acres of very good loam soils. It has swing-15 milking parlor that was retrofitted into an old barn in the late 1990s. An uncovered feed pad with headlocks for 340 cows is used to feed grain and baleage (if needed) before each milking. In 2007, the Martins purchased an additional 82 tillable acres just around the corner on which they built a freestanding swing-20 parlor with milk house, holding area, and feed pad. The Martins have no animal housing on either property; all the cows and youngstock are grazed and outwintered. All the land they manage, which includes about 190 additional acres that they rent, is in permanent vegetative cover and either grazed and/or used to make baleage for their herd.

"I have observed that as our soil gets higher in organic matter the grasses and clovers grow better and the soil becomes richer and darker. When the pasture is growing its best, it gives us the cheapest feed, which translates into more profit."

– Mike Martin

Farmland in the Martin's area is currently selling for around $20,000/acre. Even with this inflated land value, the Martins' operation has a total capital of well under $12,000 per cow with very little debt.

Approach for Grazing and Feeding:

The Martins use grazed pasture to feed their animals to the greatest extent possible. Keeping the cows on pasture as much of each day and each year as possible reduces the amount of forage that they need to harvest, store, and feed and the amount of manure that they need to collect and spread. Because of their relatively high stocking rate, they also feed at least some baleage during most of the year with a topdress of grain and mineral mix. Depending on the season, their herd is fed between 12 and 18 lbs. of grain per cow per day.

They breed all their cows to calve from late March through June, which helps to coincide their herd's nutrient requirements with the pasture growth curve to maximize the percentage of nutrients coming from grazed pasture. The Martins focus on excellent reproductive performance of their cows and use genetics from New Zealand because of better performance in grass-based dairy systems.

The Martins shoot to put cows into paddocks with 3,000 – 3,200 lbs dry matter per acre. They size the paddocks so that the herd grazes it down to 1,500 lbs over 12 hours. Much of their pasture has been under center-pivot irrigation since 2012. Mike calculated that the payback period on that investment was just 2 years, based on the value of the milk produced from the additional forage and the reduced need to harvest and purchase forage.

Productivity and Profitability:

	Wakiana Dairy Farm	Average Midwest Dairy Farm
Milk per cow	16,000 lbs	24,965 lbs
Milk shipped per worker	1 million lbs	1.7 million lbs
Net farm income per cwt	$4.68	$2.08
Return on total farm assets	4.96%	5.7%

The Martins' operation uses about 6.5 full-time equivalent (FTE) workers across the two farms. Each FTE is equivalent to about 53 hours per week. They ship about 1 million lbs milk per FTE worker, which represents very good labor efficiency (although very large confinement dairies can ship 2 million lbs per worker).

The U.S. dairy sector is very focused on maximizing milk production per cow. As a reference point, 290 dairies in MI, WI, and MN that are in the searchable FinBin database (finbin.umn.edu) averaged 24,965 lbs milk/cow and over 1.7 million lbs milk shipped per FTE worker from 2022-2024. Those farms had an average net farm income (NFI), an important profitability metric, of $2.08 per cwt milk produced over those three years.

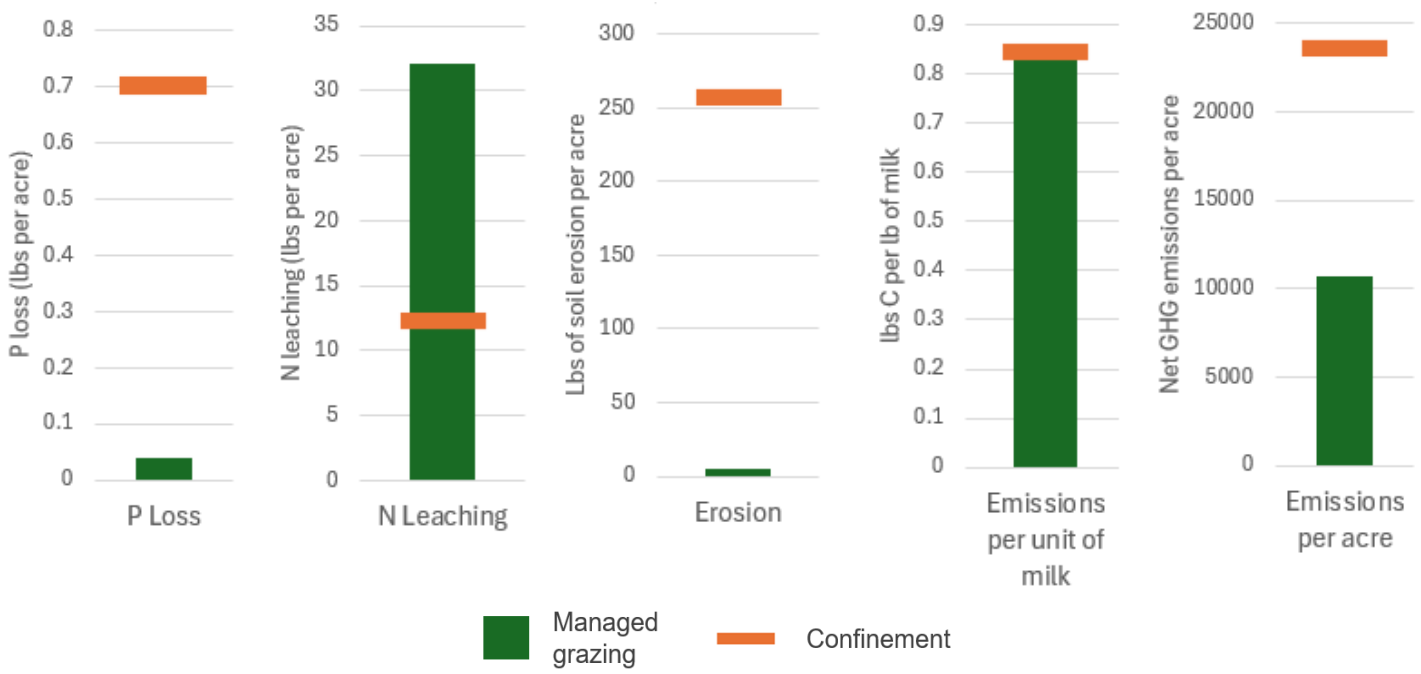
The Martins focus on profit and not maximizing milk production per cow. Their herd averages around 16,000 lbs/cow/year which is better than many seasonal dairy grazing operations, but much less than modern confinement dairies. For the years 2022 – 2024, their operation resulted in an average NFI of $4.68 per cwt of milk produced, more than twice the average of the farms in the FinBin dataset. They have been able to pay off the majority of their debt ahead of schedule.

The rate of return on total farm assets (ROA) for the Martins' farm averaged 4.96% for the years 2022-2024, which is slightly lower than the 5.7% ROA for the farms in FinBin. The very high land values in the Martins' area increases the value of their assets, which has a lowering effect on the ROA from their operation.

The Martins' farm is a great example of larger-herd low-overhead dairy grazing operation. Their balance sheet reflects a much greater ratio of the value of land and cows (i.e. the productive assets) relative to the value of buildings and machinery (i.e. the supporting assets). By keeping their overhead costs low and spreading those costs over a lot of milk sold, they have created an operation that is much more likely to be able to withstand the inevitable periods of low milk prices better than many other dairy farms of a similar herd size or fewer. This flexibility is crucial to long-term survival in the very competitive marketplace of conventional dairy.

There is a common misconception that highly productive cropland is "too good to graze". Although that may be true for old-style or ineffective grazing systems, the Martins dairy grazing operation earned an average profit per acre for 2022 through 2024 of $733. The average profit per acre (without including land rent or ownership cost) for a corn-bean rotation on highly productive land in Indiana from 2022 through 2024 was $245. Crop prices were above average for these years and reached record highs in 2022. The Martins' dairy grazing operation earned 3 times the profit per acre during 2022-2024 than did a 1,000-acre corn-soybean rotation. Dairy grazing may be the highest and best use for midwestern crop land.

Environmental Outcomes:



The Martins focus on preserving soil health for future generations. Dairy farming is a business, and adequate financial performance is essential in the long-term, but dairy farming also has an important impact on the environment, primarily through the loss of phosphorus (P) and nitrogen (N) from the land farmed. P loss from Wakiana Dairy is estimated (using the USDA Integrated Farm System Model) to be 0.037 lbs per acre per year. The model estimates that the same land being managed for a confinement dairy typical of the area (all land in corn silage and double cropped with rye) would lose 0.28 lbs P per acre per year. This is a reduction of 87%. The loss of P and soil from fields in this area is extremely low as a baseline due to the deep loam soils and absence of slopes. Nitrogen (N) loss through nitrate leaching through the soil profile is estimated to average 32 lbs per acre per year. The typical dairy crop rotation on that land is estimated to

have an average of 12 lbs per acre of N loss, indicating that the grazing system is contributing moderately more N, but note that these estimates are entirely within a standard deviation and may not be significant. By keeping all their land in permanent vegetative cover (i.e. well-managed and dense pasture) and bringing much less nutrients and fertilizers onto their farm, their impact on water quality, particularly via P loss, is significantly less than would be a typical dairy operation.

The carbon (C) footprint of each lb of milk produced is 1.6% greater with the lower producing and higher forage diet of the Martins' herd compared to a more typical higher producing herd. However, the C footprint per acre of land is 55% less from Wakiana than would be from a typical dairy on that same land, resulting in 2,276 fewer metric tons of net greenhouse gas emissions per year.

"One of the challenges we have overcome is realizing that it is more important to focus on profitability rather than milk production per cow."

– Mike Martin

What's Next?

Looking to the future, the Martins want to make sure that they are financially prepared to purchase more land in their area when it comes up for sale. When Mike and Sue get closer to retirement, they plan to have a profitable farm ownership transition to Ben and his family to carry the farm forward.

Want to learn more about how adding or expanding grazing to your dairy operation can increase your profitability?

Head to bit.ly/dairygrazing to learn more.

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