



AEA Nutritional Program Results: Grass Fed Dairy

Ervin Barkman Fresno, Ohio



When Ervin Barkman says “We farm on both sides” he’s joking about the lack of flat land on the steep hillsides of his Coshocton County, Ohio home. But he’s also aware that he farms on both sides of the Earth, above and below. Transitioning to a no-grain organic dairy meant he needed the most nutritious, quality forages above, and that meant regenerating soil biology below. This path led him to working with Advancing Eco Agriculture, and to results that show up in the field and in the bottom line.

Background

In the old sandstone hills of east-central Ohio, Barkman, his wife, and 6 children are seeing the results of their commitment to better soil health. Working with AEA for two years they've experienced extraordinary gains in milk production, fat and protein content, pasture growth and herd health. As his relationship with Organic Valley provides incentives based on milk quality and best practices, he's more profitable. Though, Barkman says, "Even if there was no organic market I'd still farm this way."

Ervin's father had farmed this land organically since the 70's, without the benefit of a label or higher market price. He knew the difference between working with nature or against, and instilled those values in his son. Yet, Ervin was tempted to go another route. In 2001, when he took over the farm, he planted his first Roundup Ready corn crop. "Dad kept asking me if that's really the way I wanted to do things..." The Elder Barkman, who still works the farm with his son, patiently let things run their course and within a few short years, it was clear that the farm was headed down the wrong path. "Not a good lifestyle" says Barkman. They saw declines all over the farm and were not making more money, either. They needed to return animals to the fields. Little did Ervin know that this decision would eventually lead him to transitioning to running a 100% grass fed, organic dairy.

Six Years Later

Today Ervin runs around 60 head on 200 acres, practicing intensive grazing rotations and forage management. The herd is half Holstein, a quarter jersey and a quarter other crosses. He maintains 40 acres of permanent pasture for heifers and dry cows and 160 acres for the cows' forage and hay.

The dairy started in 2008 with the intent to feed the animals as well as possible. Continually looking to do so, he experimented much with diet over time. At first he bought in organic feed, and fed small grains. Then cycled through feeding O.P. corn, corn silage, and a pellet feed made from wheat middlings, barley and spelt hulls. Barkman eventually came back to the wisdom that cows are meant to eat grass. In 2012, in the midst of a terrible drought, he moved to a completely grain free diet, a more proactive approach to soil health and ever more carefully managed grazing.

The Challenge

Grass fed dairy is dependent on two things: Grass and cows. Both needed help. Mineral imbalances and lack-luster soil-life was holding back the energy his cows needed. He was not overstocked but had to buy in hay, because of slow and uneven regrowth. Cows seemed to eat on pasture all day, unsatisfied with the low protein forages. Grass would dry up in drought, weeds were prevalent. Pink-eye was a consistent problem, along with more than the occasional lameness. Breed-back was low, at about 50% and calving issues were too common. Somatic cell counts were sometimes above 400,000.

If goals of being both 100% grass based and profitable were to be met, balanced soil minerals have to feed the grass, it is said. This is not a novel idea, but how to achieve that balance can be elusive. There had been a string of products and consultants and opinions over the years with the promise of improving pasture. But not much changed.



Then in 2013, AEA's David Miller started working with the farm to address these problems and provide solutions to last into the future. By looking at the pastures and cows, talking with Ervin, and making sense of soil and tissue tests, David wrote a program that fit the budget and the need.

While soil pH was good in most fields, calcium numbers were consistently low, and base saturation was very lopsided towards magnesium, though it was unavailable. Micronutrient levels were all over the place in different fields, with copper, zinc, boron and cobalt nearly absent. Phosphorous and Sulfur were severely limited in most soil tests. Since AEA feeds the soil through the plants, with the bond between flora and micro-fauna setting up a positive feedback loop of nutrient availability, foliar feeding made an immediate improvement. And once the core balance has been met, even less annual input is needed. Barkman says "No other fertilizer man or consultant talks himself out of business!"

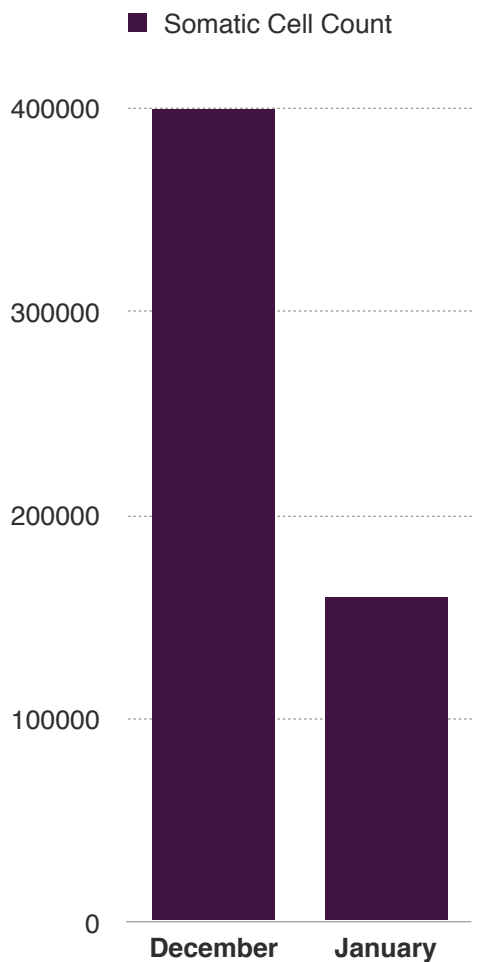
Treatments

Performing his own experiments to see what difference, if any, AEA supplements would have, in 2013 certain fields were treated with the program below only once, twice or after every cutting. The relationship was clear. His best hay was the third cutting of alfalfa/grasses that got the most PhotoMag. This was fed out over the worst of 2013's epic winter. With temperatures 30 below, the feed quality was so high he unexpectedly wound up with excess milk.

In 2014 he switched to Forage Foliar Blend, formulated specifically for pasture and hay needs, and applied uniformly after every cutting. When ground is worked for replanting he uses the Rejuvenate program to increase digestion, holding capacity and the increase of microbial life.

2013 Foliar	Rate per Acre	Supplement
	4 qt	PhotoMag
	2 qt	Sea Shield
	2 qt	PHT-Calcium
	4 qt	Rejuvenate
	50 gram	Spectrum
2014 Foliar	Rate per Acre	Supplement
Applied after every cutting or grazing	2 1/2 gal	Forage Foliar
	1 qt	PHT-Calcium
	1 qt	Sea Shield
Rejuvenate Program	Rate per Acre	Supplement
Applied when soil is worked and/or late fall.	2 gal	Rejuvenate
	1 qt	PHT-Calcium
	50 gram	Spectrum

Results



Somatic cell count drop in one month after addition of MagCo Plus to stock water.

In the tank: Upon grazing treated ground last year there was a near immediate jump of 10 pounds milk per cow per day, which has stayed consistent since. Fat rose from 3% to 4.4% and 4.7% on hay. Protein is up to 3.5% from 3%. Higher fat and protein get premiums.

AEA's MagCo Plus was supplemented in his stock water and Somatic Cell Count dropped from 400,000 to 160,000 in a month. This alone took him from being discounted \$.48 per cwt to being paid a premium of \$.96 more per cwt, at mere pennies a day in cost.

In the pasture: Forages grow back aggressively, and longer into the winter. Grazing is more even. The cows now eat for only an hour, then lay down to chew, contented, so they eat less. Consequently, land that he intended for grazing was never needed and is being hayed, creating surplus. There are no insects or diseases presenting trouble.

In the ground: There are noticeably reduced weeds and drainage is better. There is a huge difference in tilth, with mellow ground even in wet spring soils. Germination is uniformly quick and the turf has become exceedingly drought resistant.

In the barn: There have been absolutely no incidences of pinkeye or calving issues. Breedback has risen from 50% to 80% success on the first service. And there have been zero vet visits for a cow in two years.

In the home: The family agrees the milk just tastes better and theres more cream to make home churned butter and ice cream. Ervin is getting the best return on investment he's ever had and it's the healthiest and calmest his herd has ever been.



“50 lbs of milk per day from grass-fed, cross-bred, hill-farm cows is pretty good in anyones book.” But Barkman’s real edge is in the quality of his milk. That’s the difference of farming on both sides. There is no question that the dairy has hit it’s stride since working with AEA.



Yet, Ervin is committed to “Keep improving, take a real close look at forages and get them as high quality as possible. Then we’ll worry about quantity.” One follows the other.