MIDWESTERN BIO-AG'S MINERALIZED BALANCED AGRICULTURE

MBA
Midwestern Bio-Ag

BIO-NEWS

WINTER 2007 VOLUME 12, ISSUE 1

Lynch family farms

Biological farming is a way of life for the Lynches.

The Lynch family farms.

Drive along Hwy 151 in northeastern Iowa and you'll pass the Lynch farm. Just up the road, look at the next farm on your left, and it's another Lynch farm. The third Lynch farm is just a few miles to the northeast.

You might say that biological farming, and working with Midwestern Bio-Ag, is a Lynch family tradition. This Iowa family farms and farms and farms— Dad Richard, son Marvin and wife Kim, and Kevin are all farming, and two more sons Mike and John will be joining the operation. All farm in the same neighborhood, and with the same philosophy— keeping the land healthy for today, and for future generations.

> ***"I noticed (our soils) work up easier. The texture seems looser."***

Richard, who started farming in 1975, began working with Midwestern Bio-Ag and Bob Yanda back in 1989. "Bob had a good story," recalls Richard who knew he wanted to "get away from the chemicals." The Bio-Ag program fit his goals. Richard also liked the MBA fertilizers and most importantly, he liked what they did for his farm. "Healthier soil is the big thing."

The second generation joined the

(Continued on page 4)

Marvin Lynch, MBA of Iowa consultant Al Steger, and Richard Lynch check on the hay on one of the Lynch farms last summer .

Gary Zimmer's Winter 2007 letter

Dear farmer agri-business person,

It's been a long time since we sent out one of these newsletters. It has been a busy fall, a good fall harvest and a great year to do livestock beddings from crop residues. On the farm we built a composting bedding pack barn for our dairy milking herd. The cows sure do like living on it. Like so many other changes, there's always a learning curve. Maybe that's why changes on farms are so slow. There's not much room for error.

> Can we accelerate this change from the damaged and out-of-balance soil that we have to a soil that produces good crops year in and year out?

On the soil side, the time factor also comes into play—three to five years is a long time to follow a program before getting the obvious, maximum benefits. You see little things along the way, like more earthworms, but soils are forgiving and slow to change.

As I write this, I also have a lot of off-farm projects in the works—the ACRES USA conference, a Bio-Ag training article on soil health, MBA training meeting, and more, all requiring my attention. 'Accelerating the System' was our Field Day theme, and it is also my ACRES USA topic.

Our Biological System

The system is the relationship between soil minerals, plants, soil life and organic matter-humus. We call ourselves 'biological farmers' versus 'conventional farmers' due to our more complex view of soils. Biological farming and organic farming are systems focusing on the soil life and organic matter (carbon). Research and universal understanding have been challenges. System-based research is very difficult because most researchers like to reduce things down to one variable: one additive, one change in application rates, one new method. Most organic farmers know that after a few years farming a new system, things get better, weed control is easier, crop yields improve, plants are healthier. Did the farmer just get better at this organic farming or are the soils now changed? Maybe it's a combination of both, but mostly a changed soil structure and health.

So can we accelerate this change from the damaged and out-of-balance soil that we have to a soil that produces good crops year in and year out, in all weather conditions, without all the insect and disease problems? Give me any soil and in just a few years I can change it so you won't recognize it— do your soil correctives, remineralize it and start adding carbon, green manure crops, and livestock manures, raw or composted. Put all this back into the soil using a shallow incorporation method.

Remember, always fix soils from the top down. Subsoiling or deep tillage may be necessary to assure drainage and the ability to control both air and water. You have the topsoil and the subsoil, but I believe major soil damage comes from disturbing the middle soil layers. Chisel plowing or moldboard plowing both do the same thing: over-aerate and damage microbial communities along with destroying root and worm channels needed for soil breathing and structural rebuilding. Planting in a prepared zone also makes sense, and you can concentrate nutrients in a prepared planting bed.

In the last twenty plus years, Bio-Ag has worked with many farmers.

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No, you didn't misplace your Fall issue of the *Bio-News*. Due to a number of factors, there was no Fall 2006 *Bio-News* published. However, this *Winter 2007 Bio-News* is a special expanded edition of our newsletter which we hope you will enjoy.

—Mary Pohlman, editor

BIO-NEWS

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In this issue...

....Gary's Winter letter

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We have deepened our understanding of the biological system and have sure seen a whole new developing attitude among farmers: leading versus pushing, doing everything you can to get the soils healthy and mineralized, and improving soil health, quality and crop yield.

Winter Meetings

At my winter meetings this year, I will spend time on the how-to of accelerating the system, showing what many farmers are doing. I'll also discuss a sign of the times: $3/gallon fuel, $3 corn and $12 milk, now what?

It appears to me that in the last 65 years the changes in agriculture and the world have really accelerated. What's new today will be outdated very soon. It seems that there's always something 'better', but consider the land, our food, and our health-- have we accelerated the quality of life or has it gotten worse? We certainly have turned up the turbo, but is that a positive?

I do believe that the people of this Earth will speak out. I think they have started. Staying healthy, the quality of life, and purpose in our life and work are issues now getting a lot of press. Organic food is not the only answer. The movement is not about organic food but about knowing how our food was raised, how the land, the livestock and the laborers were treated; it's about food taste and food quality—these are all becoming issues of concern.

Growing public concern over how and where food is produced has led to the creation of new food retailing services like the Zimmer's Local Choice Farm Market featuring all locally produced foods.

Knowing how our food was raised, how the land, the livestock and the laborers were treated; it's about food taste and food quality.

For example, it appears that BST milk is on the decline. Consumers don't want it, and the big companies, who want to make money, have noticed. On the East Coast, producers are being offered 35cents more per hundred for milk without the BST-but the company raises the price in the store by $1.60/cwt. The organic numbers are even worse. They pay $3 per gallon for milk and sell it for over $6. It's always the same for the farmers-get more efficient, produce more cheaply, raise crops/livestock faster, produce a bigger pile and we will pay you a penny. So that's the game we're in.

Farming can be full of stress and hard work, but it seems to me that the fun is in another direction, in producing quality and profitability. Do everything you can to get the soils healthy and mineralized. Get the livestock healthy and comfortable.

Three dollar corn—ethanol does deserve credit for this. The need for energy sources won't go away, but whether ethanol is the answer or even part of the answer is yet to be determined.

So how does the dairy farmer survive on $12 milk, $3 corn and $3 fuel (which affects the cost of almost everything else as well)?

I'm really sure organic is not the answer for most farmers. For farms like the Lynches (our front page feature story in this issue) I do believe it is a wise move. They have been working on the soils and feeding a high forage diet, the cows are healthy, and they are growing quality forage. They need only to master the paperwork and make a few minor changes in their operation, so why not? They will be paid well for their efforts.

The high note for dairy producers is the pressure being put on BST free

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....Lynch family farms

(Continued from page 1)

operation with son Marvin buying the cows in 2004 and taking over the home farm. "I always wanted to be a farmer," says Marv. And being a Bio-Ag farmer naturally followed.

The farm, with steeply rolling hills, is set up in contoured strips as it's highly erodable. Clay soils, however, don't seem compacted, Richard notes, which he credits to the Bio-Ag program.

"I noticed (our soils) work up easier," adds Marv. "The texture seems looser."

They fertilize to Bio-Ag's recommendations, and "haul a lot of manure" from the dairy herd and the Holstein steers Richard raises. "It used to be a load every day." This year, however, they added a manure pit so "we're not hauling manure when we shouldn't be" when the land is wet.

They use dry fertilizer on the planter for corn and 28%N, 10 gallons band sprayed with a herbicide mix. They cultivate and sidedress an additional 10 gallons of 28%.

Corn yields are "real good," says Marv, "right around the 200 (bu/ac) mark on both farms. In '04 I had a test that was 240, first year corn after alfalfa, and this year I had a test run 225." He also likes the quality. "When they test our shell corn, the protein seems to be higher than average," he's observed.

Hayground gets fertilizer after first crop.

Another key part of their program, Marv noted, is "Bio-Cal every fall on alfalfa and corn, heavier on the alfalfa."

> ***"Quality hay saves buying protein."***

"The neighbors do wonder when you're spreading that 'white stuff' in our field," says Richard with a grin.

"New seeding, for years we used oats," adds Marv. Now, however, they're going with a new cover crop. "Winter wheat in spring, with the alfalfa seed. The winter wheat gets about six inches tall, then goes dormant. The alfalfa takes off. We really have good luck with it."

The Lynches are pleased with the hay quality on the Bio-Ag program.

"Quality hay saves buying protein," says Richard.

"Our hay tests are really good," adds Marv. "Bob (Yanda) says our hay's too good. We had to mix straw in the TMR" to balance the ration.

In addition to being fed the high quality hay the Lynches raise, the diary herd "is on the Bio-Ag feed program, too," notes Richard.

Marv adds that the ration is haylage, corn silage, shell corn with minerals, a pound of roasted beans and dry hay. The high group gets extra, 3/4 lb. Energy Elite and 1.5 lbs. Bean Buddy plus extra corn silage.

Dry cows get corn silage with dry grassy hay, or are on pasture in the summer, and MBA's Cornerstone Dry Cow mineral.

Herd health is good. "We see the vet on herd health once a month," notes Marv. "Calving is one thing I notice," he adds. "It seems I have a lot more cows clean better. Heifers come in, they'd look good before they calved, but it seemed like after calving, they'd run down. Now, they

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Marv (left, holding one of the couple's three sons) built the Lynch's milking parlor this past year as they moved the cows from tie stalls to a free-stall shed and increased the size of the herd. Wife Kim milks. Dad Richard is in back.

....Lynch family farms

(Continued from page 4)
seem to hold better."

They've been gradually building the herd through all home raised replacements the past several years.

"We're not buying," adds Kim, who quit her off-farm job and does the milking in the new parlor.

"We're letting the herd grow by itself," noted Marv. "In '04 we sold 10 head. I had no place to go with them in the winter." At the time, they were shuttling cows in and out of a 60-stall barn, an inefficient and time-consuming system.

Committed to dairying, last year they invested in new facilities: a free-stall barn and a milking parlor built by Marv at a considerable cost savings.

"Milking time is half what it was and can get done by one person," notes Kim, who also feeds calves.

"I enjoy farming. I think it's the best place to raise a family," says Marv, who does have concerns about some farming practices. While attending applicator training classes, Marv noted with concern the repeated warnings to 'make sure you're wearing your protective clothing.' "It finally got to the point, enough is enough." With that concern in mind, "Kim and I are looking into going organic. Eleven dollar milk isn't cutting it." He feels like they already have a good start toward making the transition. "Bob says we're over halfway there" with their current biological farming practices. "We've been band spraying, which is half the rate."

"A few weeds won't kill us," notes Richard.

"Weeds will be the biggest hurdle," Marv acknowledges.

It's a hurdle, however, that they plan to overcome– biologically.

....Gary's winter letter

(Continued from page 3)
milk and $3 corn. Haul that $3 corn to the East or West Coast using $3 fuel and changes will have to be made.

Positive price changes, I believe, are on the horizon and the cards are in place to make it happen. Three dollar corn does that mean fence row to fence row corn with high rent? It takes a lot of nitrogen, technology and chemicals under conventional systems to produce corn. Will it be more profitable with all the added costs? What about the environment? You will need more disease protective technology, up to a "10" stack modified corn.

Positive price changes, I believe are on the horizon.

The $3 corn gives all farmers an opportunity to invest in their land. Set it up with proper mineral balance. Invest in equipment to create planting zones and dry fertilizer placement. Look at compost, poultry or other manures. In southern Wisconsin/northern Illinois we have two sources of dried poultry manure that's a very economical soil corrective, carbon based fertilizer.

Now this $3 corn is the cheapest crop for us livestock farmers to grow when we plant corn following a forage (even if only a one year forage) and use livestock manures and green manure crops. Apply a balanced, quality fertilizer down the row, that's it. Many organic farmers can produce 200 bushel corn with no purchased N.

For forages, let's get the BioCal, calcium and other beneficial nutrients on the forages. Let's learn how to evaluate, produce and feed these quality forages (Midwestern Bio-Ag can help. That's what we're really good at!) Make a lot of your meat and milk with these forages, then sell more of the corn. I believe the bank will be happy, the consumer will love it and farming will again be fun, challenging and profitable.

That will be my winter meeting topic. My meetings are also a time for us here at Midwestern Bio-Ag to show you our appreciation for working with us.

As more and more farmers from all types of farms look to improve their situation, they will look more and more at the soils and at the benefits of biological farming.

The academics are catching on, too. Our University of Wisconsin, with a new natural-minded dean and many new professors, is asking our same questions of sustainability, quality and profitability. We will soon be seeing new research helping farmers, satisfying environmentalists, animal welfare advocates and the consumer with these healthy, quality foods.

My winter meeting schedule is included in this newsletter. I start at 10:30 a.m. (with a few exceptions) and will finish by 2:30, with lunch included. Please attend a meeting near you, and bring your ideas, your questions, and your neighbors. I hope to see you there.

GFZ

Fertilizer Decisions??

By Bob Yanda
MBA staff consultant & President, Midwestern Bio-Ag of Iowa

This is the time of year when we're making plans for next year's crops.

Your planning should start with evaluating this year's crop and its performance. What did you learn about your soils, your fertilizer program, and the yield and quality of the crop?

Success is not doing one big thing right but doing many small things right. Always keep this in mind because there are many different factors involved in crop production and each one of them is important.

With the increase in the price of corn, more farmers will consider planting more acres to corn and more acres will be corn on corn. We always need to maximize yield and profit, but when prices get high our instinct is to push for even more. This is fine as long as we don't do it at the expense of something else.

Putting on more nitrogen to grow more corn may not be the right answer. Think about this: Is the nutrient that is in excess ever the limiting factor in crop production?

Plants need a balance of all nutrients. Corn plants utilize nitrogen in combination with sulfur in the presence of calcium. They need zinc to help with phosphorous uptake and to determine ear size. Boron is required for extended pollen life, sugar translocation, kernel fill and test weight. These are just a few of the nutrients involved in corn production.

A balanced fertilizer should supply all the nutrients that are needed by the plant. It should have a combination of some soluble and some slow release nutrients. The pH should be slightly acid to increase the availability of the nutrients. It should be free of chlorides or other compounds that could be harmful to plant roots and soil microbes.

Does the fertilizer have a price or a value? An expensive fertilizer is the one that you don't need or want.

As you evaluate your fertilizer program for next year, remember the importance of balanced nutrition and the aspects of quality fertilizer. Review your soil samples and make sure the major building blocks are in place (proper calcium and magnesium levels, adequate phosphorous and potassium).

If the rotation is corn on corn consider these ideas:

- A combination of 28% nitrogen with ammonium thiosulfate and a carbon source (sugar or molasses) sprayed on corn stalks to help decomposition and recycling of nutrients.
- A green manure crop (oats, winter wheat, rye, peas, etc.) planted in the early spring and worked back into the soil before planting to provide soluble nitrogen, stimulate biology and reduce weed and insect pressure.
- Bulk spread ammonium sulfate as part of the nitrogen needs before spring tillage to accelerate residue decomposition and provide sulfate sulfur.

As we finalize our fertilizer needs, price is another issue that always comes into the picture. Ask yourself this question: Does the fertilizer have a price or a value? An expensive fertilizer is the one that you don't need or want. Fertilizers that bring negatives to your farm may be costing you more than you think. As one farmer told me, "I finally figured out what that cheap anhydrous was costing me."

We all know that a chain is only as strong as its weakest links, and so is your fertilizer program. Remember it is the little things that count.

Good luck with your evaluation and decision making and I look forward to seeing you at our winter meetings. Bring your questions and ideas!

High production can't offset cost of high cull rate

What does a high cull rate cost?

Today, the average state and national culling rates are about 37 percent, with over half of those culls considered as involuntary, forced by biological reasons (illness or death) or economics (low production related to poor health or reproduction).

What is the cash benefit of halving that cull rate? Does a higher producing yet shorter lived cow make you money? Or cost you money in the long run?

Gary Wagner put together the numbers for a comparison of the 'Lifetime Dairy Animal Income After Feed Costs' comparing the profit from a cow in a herd with a 15% cull rate versus a cow from a 37% cull rate herd.

As the chart at right shows, the average cow on Farm A, with the low cull rate, remains in the herd for 6.7 freshenings or 2,400 days. All her offspring can be sold. On Farm B, with the high cull rate, a cow lasts only an average of 973 days. Three animals will be needed to keep that same stall filled over the same 2,400 days: the initial cow, her daughter and her granddaughter.

Even assuming that this cow in the low cull rate herd gives less milk (70 lbs. vs 85 lbs. /day) during her lifetime, she will still make her owner over $3000 in additional profit. The bulk of the difference is from the sale of more of her calves for replacement heifers, rather than needing to keep the calves for additional in-herd replacements.

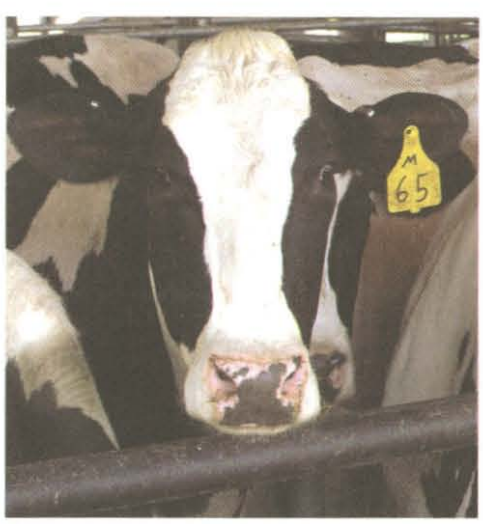
In addition to the economics, there are intangible benefits, too. "I don't know a single farmer who enjoys having sick cows," notes Gary Zimmer.

Farm A	Cull Rate 15%
Freshenings	6.7
Lifetime Milk Production	
Cow 1, 70#/day	161,700#
Days in Herd	2400
Milk Sales	$21,021
Feed Costs	$8,668
Heifer calves for sale	3.5/ $6300
Bull calves born	3.5/ $350
Cull Cow sales	$400
TOTAL	$19,403

Farm B	Cull Rate 37%
Freshenings	2.7
Lifetime Milk Production	
Cow #1, 85#/day	72,503#
Days in Herd	973
Milk Sales	$9,425
Feed Costs	$3,942
Heifer calves for sale	0.5/ $900
Bull calves born	1.5/ $150
Cull Cow sales	$400
Lifetime Milk Production	
Cow #2, 85#/day	72,503#
Days in Herd	973
Milk Sales	$9,425
Feed Costs	$3,942
Heifer calves for sale	0.5/$900
Bull calves born	1.5/$150
Cull Cow sales	$400
Lifetime Milk Production	
Cow #3, 85#/day	33,495
Days in Herd	454
Milk Sales	$4354
Feed Costs	$1630
Heifer calves for sale	0
Bull calves born	1/$100
Cull Cow sales	$400
TOTAL	$16,328

Does a higher producing yet shorter lived cow make you money?

Or cost you money in the long run?



Midwestern Bio-Ag Field Day

Aug.15, 2006

MBA
Midwestern Bio-Ag

We had our largest turnout ever with over 700 people attending from 10 states and three foreign countries! Thank you !

Humic substances reduced ammonia, improved weight gain

A Texas Tech University research study[1] concluded that adding humic substances to the feed of pigs not only reduced ammonia emissions from pig manure but the animals also showed improved weight gain.

According to the report, published in the *American Society of Animal Science*, ammonia emissions from manure dropped 3% to 18%. The study also showed that the recorded average daily gain was higher for pigs that had humic substances included in the diet than for the control group.

The five experiments used several types of humic substances, which were defined as "a series of relatively high molecular weight, yellow to black colored substances formed by secondary synthesis reactions."

The paper continued, "Humic substances can include most of the organic matter in many soils, but specifically include humic acid, fulvic acid and humin as major constituents as well as several minerals such as iron, manganese, copper and zinc. Raw materials containing humic substances can be mined from geographically and physically different seams."

There was some variation in the results between the groups, which the study authors speculated were due to "the different fulvic and humic acid contents among the various humic substances" fed.

The study noted that previously, humic substances had been applied directly to manures of livestock to reduce ammonia emission. However, supplementation as a feed additive in pig diets had not been reported.

[1]*Effects of dietary humic substances on pig growth performance, carcass characteristics and ammonia emission; F. Ji, J.J. McGlone and S.W. Kim, Department of Animal and Food Science, Texas Tech University, Lubbock, TX*

Gorman's Locker now open

The Zimmer family has expanded its direct marketing operation with the addition of processing services for other farmers/producers at Gorman's Locker in Lone Rock, Wis.

Gorman's Locker supplies all the meat for Local Choice™,Gary and Rosie Zimmer's retail store in Spring Green, where fresh and smoked meats are distributed to restaurants and other retail stores.

The facility is USDA certified Organic, which means there is no opportunity for contamination from conventional animals (such as E-coli superbugs) and all of the smoked products are free of cancer causing nitrites. All of the meats come from free range or pasture raised livestock raised without antibiotics, GMOs or hormones.

On-premises retail sales offers the local community quality meats at reasonable prices. Currently, Gorman's features meat from the Zimmer's Otter Creek Organic farm. Eventually, however, other area suppliers will be needed. Producers will be offered premium over conventional prices for using all natural or organic production methods, as long as they are addressing mineral balance in their soils and forages.

Gorman's now offers custom processing for livestock raised either organically or by other sustainable methods without toxic chemicals, hormones or GMOs. For growers wishing to market their own branded products, Gorman's provides label development service that includes review by the State of Wisconsin inspectors for compliance with all applicable laws.

Gorman's Locker also ages and distributes Otter Creek Organic Farm cheese produced by Cedar Grove Cheese Company, Plain, Wis. from the farm's milk.

The owners of the company are Gary Zimmer; Lawrence Mayhew scientific advisor for Midwestern Bio-Ag; and Timothy Forsythe, an experienced meat processor with a strong desire to produce extremely high quality meat products.

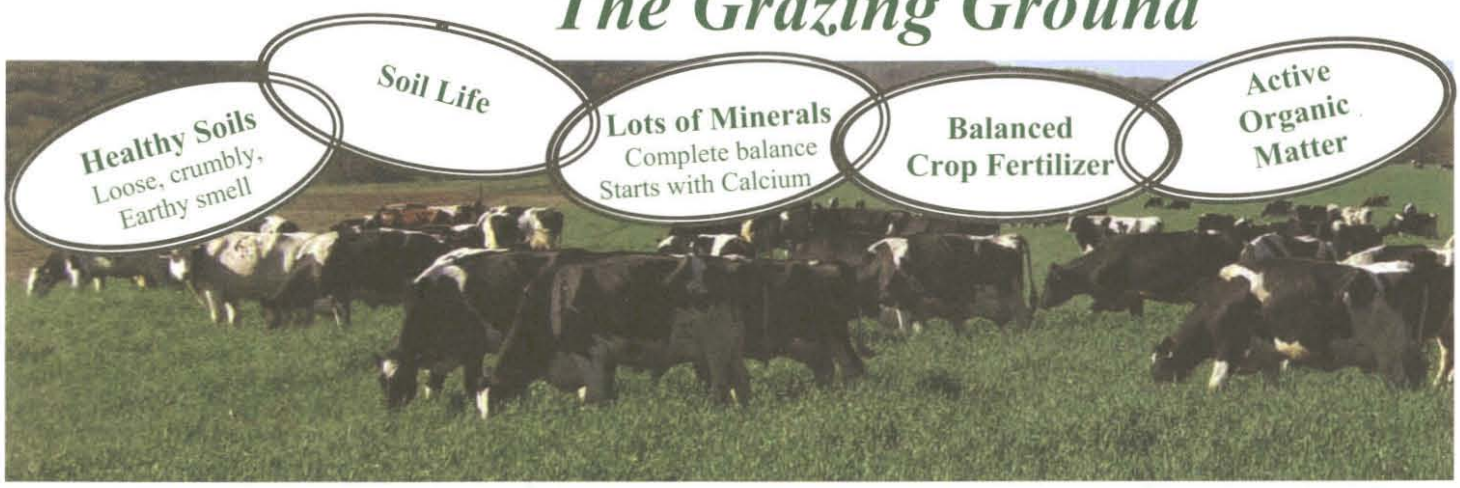
A Dairy Cow's Christmas Wish List

1. **A high forage diet**
2. **Adequate comfortable resting space**
3. **The MBA Free Choice system**
4. **Clean fresh water always available**
5. **Hay grown with BioCal**
6. **An adequate dry period with the right feeds**
7. **Enough bunk space**
8. **An alfalfa/grass smorgasbord**
9. **Enough phosphorus and other minerals**
10. **Healthy goodies: CharCal, Kelp, & Generator Elite**

Dear Santa, I want to be a Bio-Ag cow!

If you can't *lead* with strong links, you will have to *push* with expensive supplements and *risk* cattle health along with profitability.

The Grazing Ground



The Crop

The Cattle

Study shows plants greener, healthier

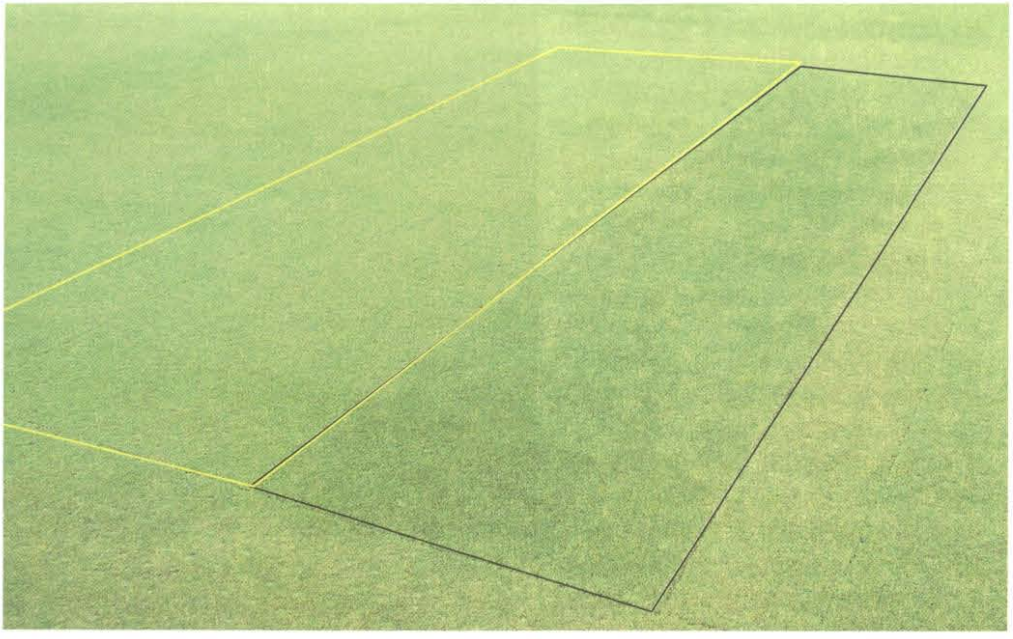
Plants in test plots treated with HumaCal™ were healthier and greened up sooner in research conducted at the University of Wisconsin-Madison Department of Horticulture in 2006, according to recently released preliminary test results.

The plots treated with a HumaCal™ /compost fertilizer combination showed grass growing with more vigor and greening up faster than the other plots, fertilized with a conventional N-P-K program. The MBA HumaCal™ / compost plots also showed considerably less of a common turf disease called dollar spot. In addition, HumaCal™ fertilized test plots provided very good turf quality even with reduced rates of Nitrogen and up to 25% less fungicides (widely used in turf production).

The 2005-2006 research was conducted at the O.J. Noer Turfgrass Research Facility near Madison, Wis. with principle investigators Dr. John Steir and Eric Koeritz.

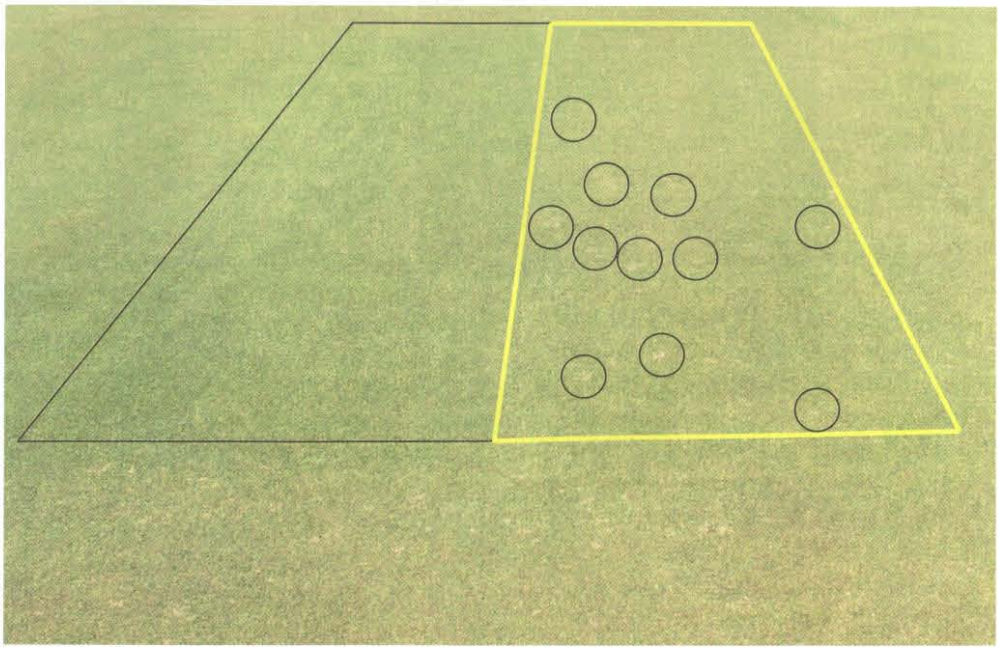
HumaCal™ a Midwestern Bio-Ag exclusive, is approved for organic use in Wisconsin and other states.

"We're very excited about these test results and what they indicate," says Gary Zimmer, president of Midwestern Bio-Ag. While he notes that this well fertilized golf course turf is 'a bad use for a good pasture,' "it is exciting how this works for farm pastures and other agricultural crops."



Above, on the left is the research plot with conventional golf course fertilizer. On the right is a research plot fertilized with HumaCal™ and compost.

Below, the turf quality of the plot on the right, treated with conventional golf coarse fertilizer and fungicides, was poor and impacted by Sclerotinia homoeocarpa (dollar spot, circled). The HumaCal™/ compost plot on the left "greened-up" faster, maintaining a darker green all season with little or no dollar spot. Note the area in front of the experimental plots, which received conventional treatments, is also riddled with dollar spot.



Healthy Soils for Healthy Crops

By Gary Zimmer

Healthy—what is it? Can we measure it?

If the soils were healthy, the plants would be healthy and diseases and insects not a problem. Soil imbalances, whether biological or mineral, can certainly affect soil health and quality.

While there are a million ways to combine words in defining "soil quality" any good farmer knows what soil quality is. Soil quality is the capacity of a soil to take in, hold and cycle nutrients and water, while also providing a healthy environment where root systems can develop fully, in part by warding off or otherwise overcoming the attacks of damaging pathogens.

One of the keys to healthy soils is adding carbon, preferably from many sources. Crop rotations, residue management, green manure crops, compost, and livestock manures are just some of the carbon sources that feed soil life. Diversity of foods yield diversity of soil life, meaning no one population gets out of control (and out of balance), setting up the crop for disease attacks.

Nitrogen is a necessary evil. Using as little as possible not only saves money but does improve soil health and therefore, plant health.

Another key is highly soluble (quick release) minerals versus less soluble (slow release). Soluble minerals in excess can certainly interfere with plants getting a balanced diet. Plant available calcium seems to play a key role in plant health. Soil pH and soil available calcium are not the same thing! Healthy quality soils till easier than degraded soils. They smell alive and feel crumbly. They take in water faster and hold it longer. Plants take off faster and grow more vigorously, often providing a key leg up on weeds and other pests. Organic materials and crop residues break down through more complex multi-faceted food chains in high quality soils, through processes that end up helping the farmer in many ways.

Anything that increases soil organic matter content, or the quantity of organic matter cycling through the soil, is a step in the right direction.

The capacity of soil to support microbial communities sufficient to bring about a substantial degree of microbial biocontrol of soil borne pathogens, insects and even weeds is an extremely important dimension of soil quality. Unfortunately, it has until recently received little serious attention from researchers. Microbial communities are, after all, the 'inputs' that make microbial biocontrol possible. The lack of attention to soil microbial biocontrol reflects the fact that for decades, most farmers have relied on chemicals and now bio-technology, for control. As these fall by the wayside or no longer work for one reason or another, everyone is scrambling to find biological controls.

Practical on-the-farm practices include getting a complete soil audit, looking at major- and micro-nutrients. Soil correction is adding what's missing. The nutrient in excess never determines crop yield or health, rather, it's the imbalances and deficiencies which are the key factors.

In addition to soil correction, we have crop fertilizers which supply a

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.... Healthy soils, healthy crops

(Continued from page 12)

balance of nutrients for the crop. Placement, timing, enhancing, and making plant accessible are keys to quality sources.

A real measure of soil health is the ability to grow a good crop with a lot less added nitrogen.

Nitrogen is a necessary evil. Using as little as possible not only saves money but does improve soil health and therefore, plant health. Anything that increases soil organic matter content, or the quantity of organic matter cycling through the soil, is a step in the right direction. The planting of cover crops can be helpful, as is reducing tillage.

Aggressive tillage is the enemy of soil micro-organisms and hence also of biological efforts to enhance soil structure and quality. But farmers have jobs to do, controlling the decay of residues (shallow incorporating works great) and managing air and water. All these steps lessen compaction, contributing to steady progress in building soil quality.

Compaction drives out spaces in the soil where air and moisture linger. Both are essential in sustaining high levels of microorganisms in the soil.

Compaction lends to fewer organisms, which can cause reductions in the amount of nitrogen flowing through the soil, hence increasing farmers' reliance on applied N, and the risk of plant health and groundwater problems. Having earthworm channels and huge root system channels in soils are the breathing tubes for biology. Subsoiling every 30" or so apart, zone tillage and shallow incorporating residues seem to work really well on many farms.

In summary, organic matter, humus, soil biology, mineral balances and tillage are all a part of soil health. These are areas of management you can do something about—they are the farmer's job. The modern farmer's objective is to produce better crops at lower cost, while also enhancing the quality of the environment and providing consumers safe and nutritious products.

Do everything you can to get the soils healthy and mineralized, and farming success will surely follow.

TRADING POST

FOR SALE

Equipment for sale: New Holland 316 Baler, #70 bale thrower, good condition, $6,500; 2 bale wagons, 816 and 918, good condition, $2000 for both 715-267-6695

Buffalo cultivator w/point & share model 4640, 4-38 $1800 605-267-4537

Equipment for sale: 4 Row JD cultivator; 4 row 7000 corn planter, dry fertilizer; 12 ft. Schultz stalk chopper; 2 power wagons 715-255-9236

Alfalfa hay for sale: 4th crop large squares, 18% protein, 123 RFV; feels very soft. $90/ton 563-263-1754 or mobile 563-299-2520 (Muscatine, Iowa)

Hay for sale: 2nd crop alfalfa, large squares, 150 RFV, $125/ton; 4th crop alfalfa, large squares, 170 RFV, $135/ton; 641-675-3373 or cell 641-777-1355 (Bloomfield, IA)

WANTED

Organic hay wanted: Dry or balage; organic shell corn & small grains. 989-826-5453, best call 5-6 am or pm

Consultants wanted We have openings for full-time consultants to work with biological farmers. Farming experience or sales experience helpful. Help Midwestern Bio-Ag change agriculture! 1-800-327-6012, ask for Fred

Wanted– Organic producers of milk, meat and eggs. Now and into the future. Please contact Organic Valley, 1- 888-809-9297 or on the web www.organicvalley.coop

Meat producers wanted: organic beef, pork, poultry, lamb. Custom processing and wholesale organic pasture raised pork and beef. Get on our list as we grow! Only organic methods used. Can smoke, cook, make specialty products, and make your own farm label. Gorman's Locker, Lone Rock, WI 608-583-2781

Ads run one-time free in the Bio-News ... deadline for next issue: March 9; call Mary at 1-800-327-6012

Midwestern Bio-Ag Winter 2007 speaking schedule

Join us at any one of the following free educational meetings provided by Midwestern Bio-Ag and your local Bio-Ag consultant. Gary Zimmer, MBA president, farmer, educator and author will be the speaker, with meetings starting at 10:30 a.m. and concluding by 2:30 p.m. unless otherwise noted. Lunch is included. We hope to see you there!

Please note that other MBA staff including Bob Yanda, Rod Dybing, Paul Deckard, Karl Dallefeld, Fred Kurschner and Bio-Ag certified consultants will also be presenting small group meetings throughout the midwest. Your local consultant will notify you of times and locations for any meetings in your area.

MBA
Midwestern Bio-Ag

Please join us to learn more about biological farming!

Midwestern Bio-Ag: a leader in biological farming since 1984

1-800-327-6012 or www.midwesternbioag.com

DATE	LOCATION	CONSULTANT(S)	PHONE
Wed., Thurs. Jan. 3-4	Southwest (Canada) Ag Conference, University of Guelph Ridgetown Campus	Stephanie Robinson, SQAC Ag Business Center	519-674-1567
Friday, Jan. 5	St. Thomas, Ontario, Canada; Fellowship Christian Reformed Church *Note— Starts at 10 a.m., ends by 3*	Ron Scheele Paul Watson *(Meal charge $10)*	519-762-5358 519-627-0566
Saturday, Jan. 6	Hanover, Ontario, Canada; St. Matthew Evangelical Lutheran Church *Note— Starts at 10 a.m., ends by 3*	Al Aime *(Full meal $15)*	519-364-3103
Monday, Jan. 8	Hartville Kitchen, 1015 Edison St NW., Hartville, OH *Note: starts at 10 a.m.*	Ohio Consultants	888-825-9373
Tuesday, Jan. 9	Cobb Hall, Millington, Michigan Note: Starts at 1 p.m.	Michigan Consultants	888-825-9373
Wednesday, Jan. 10	Huron County Expo Center, On Soper Road in Bad Axe, MI	Michigan Consultants	888-825-9373
Thursday, Jan. 11	Quality Inn Conference Center, West Branch, MI	Jonathan Graham	877-250-6679
Wednesday, Jan. 17	Wagon Wheel, Monticello, IA	MBA of Iowa	888-465-3503
Thursday, Jan. 18	Holiday Inn, Amana Colonies, I-80 exit 225 at Williamsburg, IA	MBA of Iowa	888-465-3503
Friday, Jan. 19	Hillsdale, IL. Mama J's/Shell Station, I-88 and Old Rt 2	Bob DePauw	309-523-3921
Monday, Jan. 22	Elmdale, MN; Elmdale Community Center *(Speaker Bob Yanda)*	Rod Dybing	507-467-2515
Tuesday, Jan. 23	Plover, WI; Elizabeth Inn, Hwy I-39 at Hwy 54	Mark Klish	715-366-7671
Tuesday, Jan. 23	Padua, MN at the Padua Pub *(Speaker Bob Yanda)*	Roman Walz Rod Dybing	320-599-4664 507-467-2515

Wednesday, Jan. 24	New Glarus, WI; at the New Glarus Hotel	Duane Siegenthaler	800-228-2189
Thursday, Jan. 25	Longley's Restaurant, Reedsburg, WI	Jason Fearing Bob Johnson	608-415-0924 608-375-2595
Friday, Jan. 26	Waupun, WI; Tony's Pizza	Roger Drews	920-324-9306
Monday, Jan. 29	Platteville, WI; Platteville Golf & Country Club, 6729 Hwy 80 N	Justin Spensely	608-732-4405
Tuesday, Jan. 30	Memphis, MO; Memphis Fire Hall *Note: starts at 10 a.m.*	Firman Hershberger	319-430-0383
Wednesday, Jan. 31	Kalona, IA, Der Sommerkuche *Note: starts at 10 a.m.*	Firman Hershberger	319-430-0383
Thursday, Feb. 1	Owatonna, MN; Torey's Restaurant	Dee Meiners	507-455-9019
Friday, Feb. 2	Rollingstone, MN Ginny's Supper Club, on State Hwy 248	Mike Lovlien, Joe Petit, Josh Elsing, Pat Troendle	800-626-8562 507-796-5700
Tuesday, Feb. 6	Fennimore, WI; St. Mary's Church Hall	Scott Wood Bob Johnson	608-822-4923 608-375-2595
Wednesday, Feb. 7	Lena, IL Community Building	Duane Siegenthaler	800-228-2189
Thursday, Feb. 8	Menomonie, WI; Holiday Inn Conference Center, just south of I-94 on Hwy 25	Dan Davidson	715-271-5526
Friday, Feb. 9	Arcadia, WI: Country Club	Bob Schmidtknecht	608-323-2069
Feb. 14-16	Northeast Organic Livestock Conference, Alfred College, New York	Lisa McCrory	802-434-4122
Tuesday, Feb. 20	Colby, WI Colby Lions Shelter	Rick Knopp	800-436-1459 715-560-6355
Wednesday, Feb. 21	Romy's, W5670 County Road A, Black Creek	Clem Griesbach	920-739-7584
Wednesday, Feb. 21	Blue Earth, MN; Location to be announced	Ray Yokiel *(Speaker Bob Yanda)*	507-380-5745
Thursday, Feb.22	Caledonia, MN; MaCalGrov Golf Course clubhouse	Dee Meiners *(Speaker Bob Yanda)*	507-455-9019
Feb. 23-24	LaCrosse, WI; The LaCrosse Center	MOSES Upper Midwest Organic Conference	715-772-6819
Tuesday, Feb.27	Midwestern Bio-Ag office, Blue Mounds, WI	Tim Williams	608-225-4518
Mar. 6-8	Northeast Organic Livestock Conference, University of New Hampshire at Durham	Lisa McCrory	802-434-4122

Gary Zimmer will also be speaking: March 1-3 at ACORN (Atlantic Canadian Organic Regional Network) conference; Cornwall, Prince Edward Island, www.acornorganic.org ; March 15-17 at National Organic Dairy Conference, Northern California; Fortuna, California; March 26-31 Gary will be in Australia