MIDWESTERN BIO-AG'S MINERALIZED BALANCED AGRICULTURE

BIO-NEWS

FALL 2008 VOLUME 13, ISSUE 4

Farming, MBA a family tradition

For the Jim Dukelows, farming is part of the fabric of family. The central Wisconsin family-run operation, milking 270 head of Holsteins and working 1200 acres, keeps farming all in the family with Dad Jim, Mom Marilyn, sons Chris, Greg and Jon, daughter-in-law Monica and grandson Aaron all playing a part in running the farm.

Midwestern Bio-Ag products and principles have been such an integral part of the family, for so many years that they can't even remember just how it was that they got started with Bio-Ag.

Jim does recall attending a three-day meeting put on by Gary Zimmer in the early '80s. At so many farmer meetings, after a good lunch, it was hard to stay awake, but not at one of Gary's meetings. His concepts were "really interesting. His ways sounded like a good idea."

Jim took those good ideas and ran with them, even making sure they could still be Bio-Ag customers when just over ten years ago they made the move from Neosho (near his brothers who also farm biologically with MBA) 180 miles north to Abbotsford in search of more acreage. (A daughter, Becky and her husband and three children own their own farm nearby.)

Greg, Jim, Marilyn, Jon, Monica, Aaron and Chris Dukelow biologically farm 1,200 acres and milk nearly 300 cows on their central Wisconsin farm.

After two decades, having expanded the dairy herd, upgraded facilities, and brought all three of his sons into the business, Jim still finds it good business to do business with Bio-Ag.

The heart of their operation is the dairy herd, housed in a free stall barn they built, then expanded. A calf barn was constructed next and recently a new free stall barn was added for heifers and steers as well as a commodities shed.

That healthy herd starts with quality feed grown on the Bio-Ag system, especially home-grown forages fed as a key component of a high-forage ration. Cattle are fed in five groups, with even the high group staying above 50% forage.

High forage rations give them healthier cows, longevity, and foot health, they all agreed. "Less grain, less trouble,"

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Gary Zimmer's Fall Letter

Dear Farmer/Agribusiness person,

What dramatic times. The only thing that seems stable is change!

One thing about farming, if you can keep the bills paid, you sure won't lose your job or your money invested in retirement if you own that farm. The American dream, to own your own business, to be that entrepreneur who builds something to be proud of, sure seems out of the reach of many people these days. Maybe we chased too hard after money and without working to get it.

In the *New York Times* on Oct. 12, Michael Pollan wrote a letter to the president elect, our "farmer in chief." (To read the entire article go to www.nytimes.com/2008/10/12/magazine/12policy-t.html?em)

Pollan is the author of the book *The Omnivore's Dilemma*, about a history of four meals (the corn based 'industrial meal' fast food burger and fries; the pastoral meal, which became two, one from items purchased at Whole Foods, the other from local foods; and the personal {forest} meal of food hunted, gathered or grown by the author, including wild pig and mushrooms).

He is also the author of another book I just read, *In Defense of Food*. Here he states that it's not the food's fault what we did to it--how it's processed and preserved to last and last and be shipped anywhere.

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Pollan's letter to the new president is about three major political campaign issues—health care, energy and climate change. Pollan states that farming and environmental issues weren't talked about during the campaign, but if we are to solve the three problems listed above, the answer lies in agriculture and our food system—how food is produced, processed and distributed.

So it appears, as it has many other times throughout history, that farmers hold in their hands a huge responsibility for the wealth and health of the nation. Raising food in an environmentally responsible way, treating animals as something more than a commodity, growing a lot of our own nitrogen, getting plants healthy so a lot of the toxic chemistry and plant modification is not needed-- this doing everything you can to get the soils healthy and mineralized and everything you can to get the livestock healthy and comfortable also solves many of the problems we face in America and the world today.

We call this mineralized, balanced agriculture or biological farming.

The growing interest from consumers to gardeners to mega-farmers is unreal. With our sixty-some consultants, Midwestern Bio-Ag can't get all over to all the farms that are showing interest in biological farming.

I know there are others working in this field of biological farming, but many still seem to offer little but magic bullets, wonder liquids or some other super-duper product to sell rather than working on the system. Dealing with the whole system is the only way we see to go—crop rotations, plant diversity, carbon management, minerals, and, of course, calcium calcium, calcium (which is sure a major part of the system, though not the only thing needed to make it work). You can continuously provide avail-

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In this issue...

....Gary's Fall Letter

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able calcium but you also need a balanced crop fertilizer. Then you need to deal with the residue decay, soil air, and water (which needs to soak in, be held, and move up when needed). It seems like there is a lot to this, but it's all common sense!

The high fertilizer prices along with high fuel costs I do believe will help us all to become more sustainable, better at what we do. You can grow nitrogen, so at what price point will you learn how?

Are we there yet? I just did a short trip with my grandson and heard that phrase many times--he's three and impatient. Like him, we as a modern people do want it all now, but this farming system is not an instant fix. You can get results and reduce some costs (some nitrogen and chemicals) up front, but as the soils get better, so do your crop and profits.

There is a rumor of a biological, zone-till famer in southern Minnesota who this year on a 20 acre field produced over 400 bushel corn per acre. This was weighed, and as all the facts come out, I'm sure we'll hear more about it, and how this milestone wasn't achieved by more plant altering technologies or chemicals or the perfect genetics

You can grow nitrogen, so at what price point will you learn how?

At our farm, we got involved with the fun challenge to grow giant pumpkins. In this our first year, we just worked up a plot in what was part of a pasture, with the heavy flooding in spring actually putting the field underwater at one point. We learned a lot and we know we really need a couple of years of preparation before growing the pumpkins, improving the plot with compost, aeration, green manure crops, and lots of minerals.

One thing for sure, you can't grow a giant pumpkin by pushing the system (pouring on commercial fertilizers). Success is achieved by a biological soil approach. Though it was our first try, our pumpkin, nurtured by Sharon who lives and works on the Bio-Ag farm, officially weighed in at a respectable 442 pounds. It was a lot of work, but she's now hooked on the challenge of it.

Sharon and Bryan grew the first Otter Creek Organic Farm giant pumpkin, which weighed in at 440 lbs.

Planting the right seed isn't everything. The seeds we planted were from a pumpkin of over 1000 lbs, so we don't believe genetics was our limiting factor. Genetics can only take you so far; healthy soils, good care and the environment also matters.

What's the cheapest thing to haul to your farm? What nutrients weren't affected by energy use or greed? The answer to the second question is calcium—BioCal, gypsum, lime. It may cost a bit more to grind and haul but it's not on a runaway price schedule. The an-

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....Gary's Fall Letter

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swer to the first question is seeds—the seeds we use for our green manure crops like rye, clover, etc. You can still plant those for under $20 per acre.

I have challenged all our Bio-Ag consultants to set up land and conditions for growing a giant pumpkin.

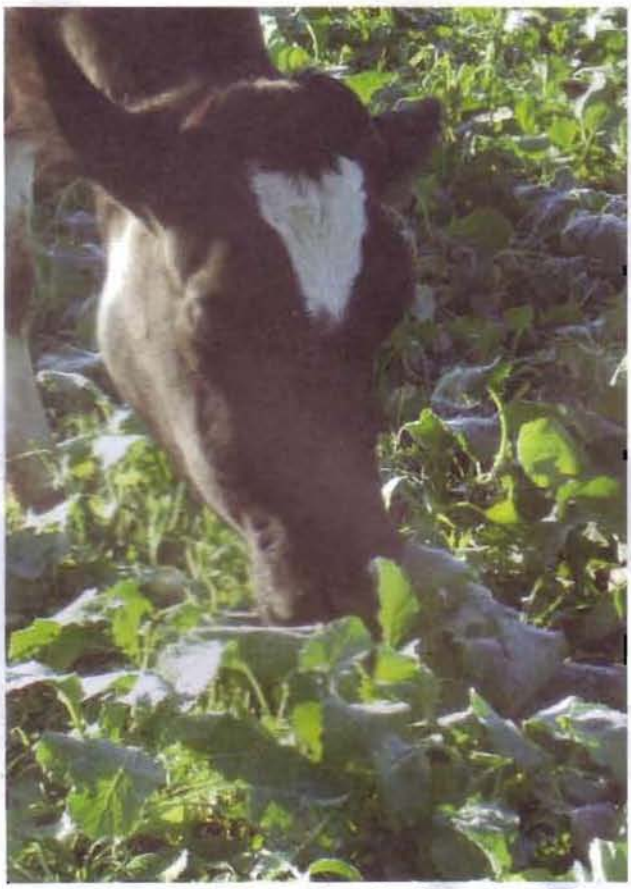
I do believe the largest one in America/ Canada this year was over 1800 lbs. This project is a great learning experience, and fun, too.

It also shows that if you can do this with a pumpkin on small acres, the same principles can work on your fields.

> *Education, ideas and information, that's what it takes to improve your farming system, the environment, and the health of the food we produce.*

Education, ideas and information, that's what it takes to improve your farming system, the environment, and the health of the food we produce.

Here at Midwestern Bio-Ag we are a bit overwhelmed by the interest we're getting from coast to coast, from small organic farms to some of the largest farms in North America. To be able to help more of these farmers, to answer their questions and assist them, we have started a new remote soil testing and consulting service.



In October and November, the Otter Creek Organic Farm Dairy herd was grazing on turnips.

While I know that it's ideal to have someone with knowledge and observational skills show up at your farm on a regular basis, we just aren't set up yet to be everywhere with our skilled consultants.

We have taken on new territories both east and west-- in Idaho, Ohio and Utah (my IOU states) plus Pennsylvania— but getting things set up, finding the right people and training them is a huge undertaking. The remote consulting program is set up to get many more farmers started and involved in this movement. (Read more on the next page, and on our website, www.midwesternbioag.com for complete details.)

Upcoming Events

We're planning our annual two day intensive training in Reedsburg, WI on Dec. 9-10. (There's more information on page 13.) Though it's mainly for continuing the education of our own consultants, we welcome farmers, educators and other ag professionals to join us. There's no fee for the sessions, just your expenses of traveling and staying.

I will also be at the Acres USA conference again this year, held in St. Louis on Dec. 4-6. Check out the schedule for speaking times, and we'll also have a booth and consultants there to assist with your farm planning.

It's one of my favorite events of the year with many good presentations and good biological farmers and educators from around the US and the world.

I hope you had a good fall harvest. If you need any assistance or soil testing, let us know!

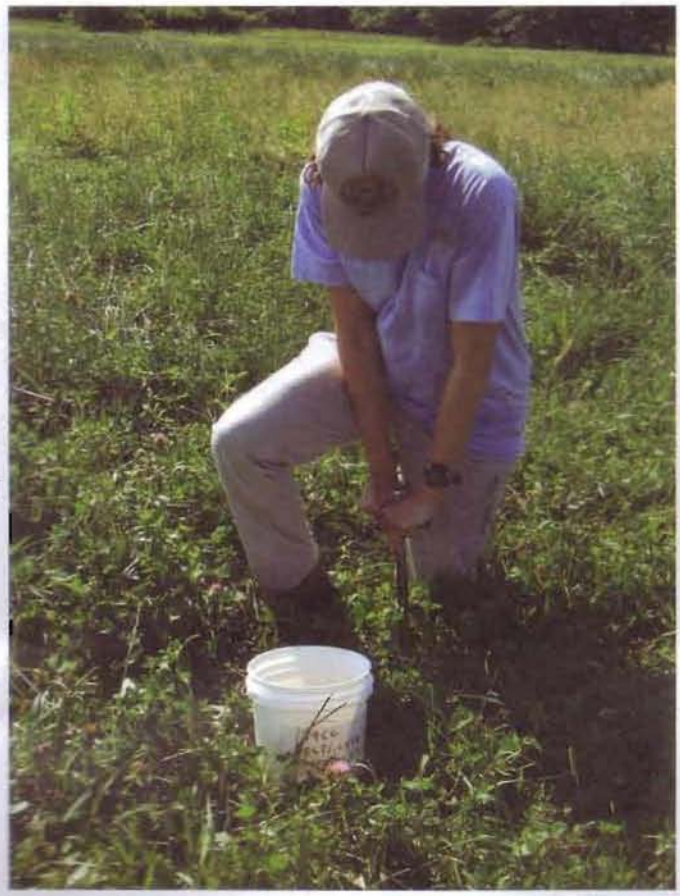
GFZ

MBA Remote Consulting now available

Midwestern Bio-Ag has launched a new remote consulting program to offer our services to farmers and producers who live outside our consultant network.

"We get so many requests for help from farmers all across the country," says Gary Zimmer, "from so many places where we don't yet have consultants. This will help fill the gap for those interested in biological and organic farming. We've designed the program to be effective and affordable."

The program's goal is to help farmers improve soil heath and thereby increase crop yields and quality, as well as improved livestock performance.



Taking good quality, representative soil samples is a key to good soil test results in any consulting program, including our new remote consulting program.

The six step plan links farmers, who provide soil test results along with information on our questionnaire, with MBA staff consultants who analyze that information to provide a 'soil health story' with written recommendations for fertilizers and soil amendments.

The Customer Information Sheet which starts the process is available on our website, www.midwesternbioag.com or by calling 1-800-327-6012. Return the filled out form along with a farm map (FSA maps are preferred), recent forage/tissue tests if you have them and payment of fees.

> "We're excited to offer a program for those farmers who are interested in biological farming but find it so hard to get the help and advice they need..."

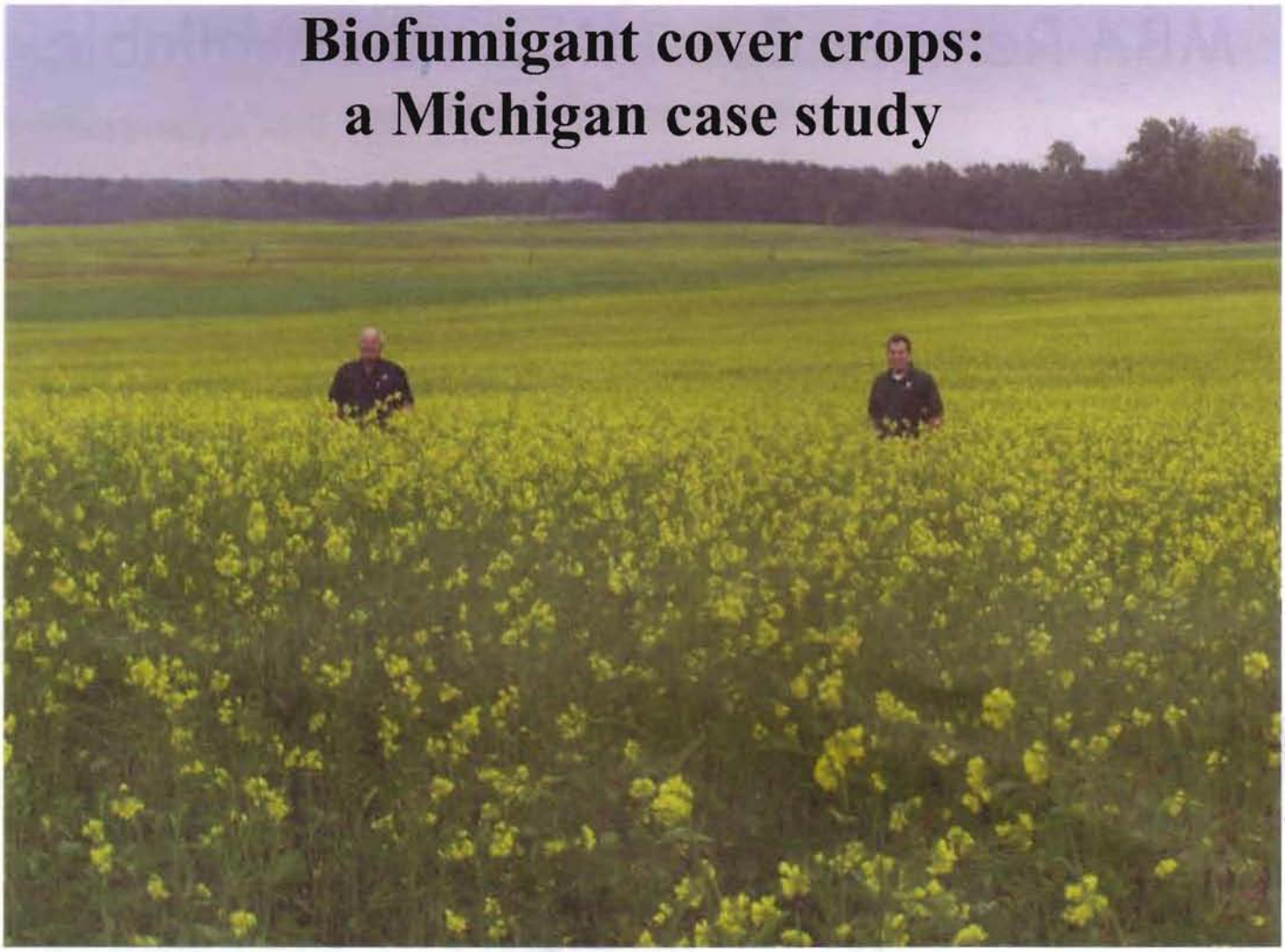
We'll send a soil sampling kit including sample bags, instructions for collecting samples and a submittal form that goes to the testing lab. (Due to differences in soil labs and testing procedures, we do require samples be sent to our recommended lab.) We ask that you submit enough samples to give a fair representation of your soils, for example, one sample per 20 acres.

Once we've got the information and soil test results, our staff will send you recommendations specific to your farm and its soils, and let you know how to contact the consultant you'll be working with.

Fees are based on the number of soil samples submitted, with three packages available. Package A is for up to 10 samples, with a minimum of three for the base price of $200, and each additional sample $50. This package includes one hour of phone consulting. Package B is for 11-20 samples at the same rate ($200 for first three, $50 each thereafter) with two hours of consulting, and Package C is for 21 or more samples (at the same $200 minimum for the first three, $50 each thereafter). Additional phone consulting is available, as is special package pricing for more than 30 samples. On-farm consulting including dairy/livestock, may be available in some areas.

"We're excited to offer a program for those farmers who are interested in biological farming but find it so hard to get the help and advice they need," says Zimmer.

Biofumigant cover crops: a Michigan case study



Flowering mustard plants on a Michigan potato farm, one week before they were worked into the soil.

by Leilani Zimmer-Durand
Midwestern Bio-Ag Research Specialist

Can plants prevent disease and insect infestations?

For potato growers, the use of some types of cover crop can help to reduce costs while improving soil quality. These crops are known as 'biofumigants' because they contain the same nematode and fungal-suppressing compounds as the chemical fumigant metam sodium. But unlike a chemical fumigant, a biofumigant cover crop is less expensive, a lot less toxic to handle, and comes with the added benefit of providing carbon and nutrients to the soil.

'Biofumigants' are plants that contain compounds that suppress soil-borne diseases and plant-feeding nematodes.

How biofumigants work

'Biofumigants' are plants that contain compounds that suppress soil-borne diseases and plant-feeding nematodes. The biofumigant effect occurs when two compounds, found in separate compartments of a living cell, come into contact with each other as the cellular tissue is broken down. These two compounds combine to form the same chemical compound found in manufactured soil fumigants. When released into the soil, it suppresses root-knot nematodes and some diseases, such as the fungus that causes potato early dying wilt, and common root rot (WSU Extension Bulletin, 2003).

In practical terms, the segregation of the two parent compounds in the plant cell means that in order to release the biofumigant into the soil where it can be effective, as many of the plant cells as possible must be broken, and the plant tissue must

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....Can plants protect other plants?

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be incorporated into the soil. There are several ways of accomplishing this, but the most effective are flail-chopping and then rotovating or disking the crop into the soil while plants are still green.

The Michigan potato farm

Midwestern Bio-Ag recently began working with a conventional wheat/potato farmer in Michigan who is interested in reducing soil fumigation, and would also like to improve plant uptake of minerals, particularly phosphorus. The soil on the farm is very sandy (with a CEC of between 3 and 5.5), so the farmer currently applies soluble nutrients several times throughout the growing season.

'Mustard green manure crops have shown great potential as both a large biomass producing green manure crop, and a biofumigant.

Our objective on this farm is to reduce or eliminate the need for soil fumigation, and to improve soil biology, soil organic matter and nutrient-holding capacity through a combination of compost, minerals, and green manure crops.

Mustard green manure crops, in particular white mustard and oriental mustard, have shown great potential as both a large biomass producing green manure crop, and a biofumigant. Studies in Michigan and Washington have shown that planting a mustard green manure crop in the fall in place of applying a chemical fumigant resulted in comparable potato yields at a lower cost per acre. In addition, growers were able to reduce their nitrogen inputs on the following potato crop by between 10% and 25% without any subsequent reduction in potato yield (McGuire 2003, Snapp et al. 2003).

We are hoping to reproduce similar results, and also reduce soluble P inputs, without negatively affecting yield or quality.

Preliminary results from the Michigan test plots

Test plots were set up on a 300 acre field in July of this year, after wheat was harvested. The field was divided into six 50-acre plots. Three plots will be managed as 'biological test plots' over the next two years, the other three will continue to receive conventional management.

To maximize nutrient uptake and to introduce more diversity into the crop rotation, a cover crop blend was planted. The blend consisted of oriental mustard, buckwheat, and ryegrass.

A green manure crop is a crop, which means it needs nutrients and water just like any cash crop. Because one of the major goals of this project is to improve soil organic matter, compost was used as a source of nutrients and carbon for the green manure crop. A week before the green

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SEED	PLANTING RATE	BENEFITS
Oriental mustard "Pacific Gold"	8 lbs./acre	Provides a lot of biomass; once plants are chopped and worked into the soil, acts as a biofumigant
Buckwheat	10 lbs./acre	Grows quickly: suppresses weeds; efficient uptake of P; provides diversity
Annual Ryegrass	4 lbs./acre	Extensive root system builds soil; suppresses weeds; provides diversity

....Can plants protect plants?

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manure crop was planted, 2 tons per acre of compost was applied to the field, supplying approximately 40 units of nitrogen. After the cover crop plants had sprouted, 20 gallons of 28% N was fertigated onto the crop.

Unfortunately, not all factors can be controlled in field research, and two days after the 28% N was applied, over three inches of rain fell. Even with the added organic material from the compost, much of the fertigated nitrogen likely leached through the sandy soil.

The green manure crop was planted on August 14th. By early October the mustard plants were flowering and the cover crop was ready to be chopped and worked into the soil.

However, likely due to nitrogen leaching, the cover crop had not produced as much biomass as expected. Biomass samples were taken on October 8th, one week before the cover crop was worked into the soil. Biomass ranged from 1700 to 2800 lbs/acre across the three plots. This is about 50% less than expected, but as the photo on this page shows, nitrogen loss was a factor in the reduced cover crop stand.

The mustard/buckwheat/rye cover crop showing early leaf senescence and yellowing, signs of nitrogen deficiency.

The reduced biomass affected the amount of carbon and minerals held in the cover crop, but whether it affects the biofumigation ability of the crop is currently unknown. Nematode testing was done on all plots in early October, and will be done again in November, after the cover crop has broken down in the soil.

Once the results of the nematode testing are in, it should become clear how effective the biofumigation was this year.

Nutrient levels in the cover crop are lower than anticipated, but still represent a significant amount of nutrients held in plant material. As the plants decay, these nutrients will be consumed by soil organisms, tying them to carbon and biology, so they will not be easily lost from the soil.

Based on cover crop studies done at North Caroline State University, it is expected that over 50% of the nutrients found in the cover crop will be available for the following crop in the spring.

This is just the first year of the MBA study and we will have more results to publish in the future.

Range of nutrient levels found in the cover crop

Nutrient	Lbs/Acre
N	19-49
P	19-35
K	34-110
Ca	12-27
Mg	3-7
S	4-12

....Dukelow family farms together

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summed up oldest son Chris.

Most feed is home grown, though they do buy protein. Rations are re-figured about four times a year, or when something changes, with the whole family meeting with their consultant, Rick Knopp, to work on adjusting the ration. They test feeds and watch manure as ways of keeping an eye on the situation.

"On our hay, we use Bio-Cal," says Jim. "We can always tell when we rent a new farm. After 4-5 years, the crops get better." Hay gets "a boost from Bio-Cal." Their standard is 500# on all hay ground after first crop. They also fertilize with 5-8-12 or 5-8-2 after second crop. "It seems to be working really good."

The Dukelows also understand that raising that quality hay is only half the battle—harvesting and storing it to retain that quality is of equal importance.

"We like to make our hay quick so that our quality is the same," says Chris. He estimated that they harvest about 100 acres a day in between chores. They have five side by side bunker silos. Keys to quality are packing, keeping it covered, and making it fast, they all agreed, along with adding an inoculant.

"Packing and the facer are the big factors," said Jim, who makes packing one of his responsibilities.

Their consultant Rick Knopp also noted that the design of their bunkers is another key to success. "They are six times as long as they are wide," avoiding the problems caused by having too much face exposed. All the stock are fed out of the bunkers, including the dairy steers they raise, which also helps avoid common problems like spoilage and mold.

Jim Dukelow and grandson Aaron check the face on one of the farm's bunker silos.

Some of the hay is baled, with much of that dry hay going for the dry cows, especially the grassier hay, along with triticale and peas. "Fresh cows also get a bale of dry hay first thing every morning," says youngest son Jon, who manages herd health.

Calving problems are few.

"We haven't had a DA in a long time," he noted.

"Calves are healthy, too," adds Marilyn, who's in charge of feeding them. They have their own well ventilated barn next to that of the young stock.

"Breeding is easy because of the good minerals" in the Bio-Ag nutrition program, Jon also noted. Cows breed on natural heats.

The Dukelows raise all their own replacements. "We haven't bought any (cows) for years but we've been increasing (numbers) every year." They're nearing the peak herd size they want to reach to fit their acreage and the help available, and don't want to get too big. They plan to sell some stock when they reach their goal of about 300 head milking, a number that's "Enough we can handle without hiring more help," says Greg. They have only one part-

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Healthy, home-raised replacements are growing the dairy herd for the Dukelow family.

....Dukelow Farm

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time helper for chores, with the rest -- field work, including some custom manure hauling and combining plus milking-- is a family collaboration. The cows are milked twice a day in the double 12 parlor, usually by Greg and Jim, a task that takes about six hours, with cleaning.

Field work finds Mom Marilyn and Chris's wife Monica pitching in to help (and four year old Aaron already anxious to join in — he's started saving to buy his own tractor).

Soil fertility

Their acreage, one quarter of which is rented, includes 400 acres of hay, 130 of triticale and peas, and the rest in corn for silage and high-moisture corn stored in Harvestore silos. The rotation is triticale and peas, three years hay, then 3 years corn.

With 750 head of stock on the farm (cows, young stock and dairy steers), manure makes up a major part of their fertility program. They put a light coat of manure on fields they're seeding and a heavier coat on fields to be corn.

They use MBA corn starter and don't apply extra nitrogen. "We like the no-salt fertilizers," Jim explains.

Midwestern Bio-Ag, they all agree, gives them the most bang for their buck. "It's the bottom line that counts around here. We aim to make a decent living doing what we love to do, being good stewards of the land and animals. MBA products and principles allow us to accomplish this," says Jim. And despite being long-time customers with the company, "I still like to go to Gary Zimmer's meetings."

....Magnesium

(Continued from page 11)

soils. Potassium and nitrogen move through the soils too quickly which reduces their uptake. These soils are normally low in organic matter and humus and have very limited water holding capacity. If you are dealing with these soil types, make sure low Mg is not your limiting factor in crop production.

As a farmer raising crops, you have certain jobs, one of them is to maximize photosynthesis. You can do this by making sure the plants have plenty of available Mg, regardless of the type of soil you have. Also make sure your plants have adequate zinc.

Zinc has many important functions and one of those is that it is involved with the enzyme in plants that increases leaf size.

Bigger leaves mean more photosynthesis, meaning increased sugar production; increased sugar leads to plants that have a better chance of reaching their true genetic potential. It is all connected— that is why a balance of all the nutrients is essential.

Next time someone starts taking about Mg and all the negatives, make sure you understand the importance of soluble, plant available Mg and all the benefits it provides to the plant.

With adequate levels of magnesium, your plants will be healthier and more productive.

You can hear *Bob speak at this year's Acres USA conference Dec. 4-6 in St. Louis, MO.*

Understanding Magnesium

By Bob Yanda
Midwestern Bio-Ag of Iowa

Leaves from soybean plants growing just a few yards apart in the same field— the leaf on the left grew in the section of the field fertilized with a MBA balanced fertilizer blend, the leaf on the right from the section fertilized with a conventional P-K fertilizer, at the same cost per acre.

When people talk about magnesium in the soil (especially here in the upper Midwest where many soils tend to have an excess), they usually start by listing all the negative aspects of this mineral and forgetting to mention the positive things associated with it.

Magnesium (Mg) is a very important mineral when it comes to plant growth and performance. Let's look at both sides of this nutrient, the good and the bad, to better understand its importance.

Magnesium is the key element in chlorophyll. Chlorophyll is what makes plant leaves green. The leaves attract energy from the sun and through photosynthesis produce sugars (glucose). The greener the leaf, the more photosynthesis.

This is a simple explanation, it's really a much more complex process than that, but the basic thing we all need to know is that nothing happens in the plant until sugars are produced. These sugars are then translocated throughout the plant and all functions in the plant from root growth to reproduction occur.

Magnesium is the key element in chlorophyll.

Also, 20-25% of the sugars in the plant are dispersed out through the roots into the soil to feed the soil biology.

Once we understand how important Mg is in the plant, it is equally important to make sure that Mg is available to the plant either from the soil or from the fertilizer program. There are certain things you can do to improve Mg availability and uptake.

The base saturation of magnesium on your soil test should be between 15-20%. Sandy soils need more Mg while clay soils require less. Remember that soils are not mathematical and it is always better to target ranges instead of exact numbers.

If your soil test levels are above 20% base saturation, make sure you are adding calcium and sulfur to help lower Mg and never apply anything to your soil that would drive the Mg levels higher (such as dolomitic lime).

Remember this, as Mg levels increase in the soil, some negative things also happen.

Soils lose their air and water holding capacity. They become tighter, harder to dry and tillage becomes an issue.

Also higher Mg ties up potassium and suppresses nitrogen uptake.

You can offset these negative affects of high Mg by applying calcium and sulfur (from Bio-Cal, OrganiCal, gypsum, etc.) in your soil correction program and by adding soluble Magnesium with your balanced fertilizer. (Almost all Midwestern Bio-Ag fertilizer blends include soluble Mg.)

If magnesium is too low in your soils, below 12-15% base saturation, there are also negative reactions. This is usually the case in lighter, sandy midwestern

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From CRP to Organic: 10 Points to Consider

1. Soil fertility may be low on CRP land. Sitting idle and non-productive growing complex carbon doesn't add minerals to the soil. You need to soil test to determine soil fertility.
2. Most CRP lands have lots of residues of complex carbons which need conversion to humus. That's a slow process. Soil biology is usually good.
3. Shred residues, disk, rotovate, then wait a few weeks. Work soils shallowly again and plant a green manure crop. Fall rye is a good way to start. This process is very different in the spring.
4. Soluble nutrients are slow to become available on CRP lands. Applying livestock manure and growing a crop with low nitrogen requirements is a good starting place
5. All this carbon and good biology needs to be carefully managed, not burned up by excessive tillage.
6. Outline a farm land management plan: crops to be grown, rotations, soil building crops, nutrients, tillage, weed control and marketing.
7. Growing hay and selling it is selling off minerals and organic matter, which drains soils. These nutrients need to be replaced through the use of livestock manures, fertilizers, compost, and liming materials. Selling hay off of low fertility ground makes things worse.
8. Row crops planted more often than two out of five years are more difficult to sustain regarding weed control and soil organic matter. It isn't easy to meet the organic land management standards with the production of more row crops.
9. Organic land management requires production of organic matter. Always include a green manure/soil building crop in your rotation. Avoid overtilling bare soils.
10. The above comments hopefully will stimulate your thoughts to change your thinking. Successful organic farms do everything they can to get soils healthy and mineralized. They can use any nutrient a conventional farmer can use, just from different sources. Study the organic farm plan from your certifier. Organic farming is about not doing—don't use chemicals, commercial fertilizers, etc. Successful organic farming is about doing — understanding what it takes to farm biologically. Get the tools and find the knowledge.

MBA hosts two day educational meeting

Midwestern Bio-Ag's annual two day Mineralized Balanced Agriculture educational conference will be held Tuesday and Wednesday, Dec. 9-10 at The Voyageur Inn, Reedsburg, WI.

Midwestern Bio-Ag staff, consultants and guest speakers will present materials on a variety of biological farming topics at the annual event.

Farmers and other agri-business professionals are welcome to attend. There is no charge to attend the sessions, but guests are responsible for their own meals and lodging.

Our tentative speakers list includes (and more may be added):

- Gary Zimmer, "You Can't Violate the Principles"
- Bob Yanda, Midwestern Bio-Ag of Iowa
- Karl Dallefeld, Forages/ Forage Genetics
- Leilani Durand, reporting on Bio-Ag Research projects
- Duane Siegenthaler, Precision Farming Through Midwestern Bio-Ag
- John Kempf, MBA consultant from Ohio, on vegetable/ plant production
- Jim Fasching, Midwest Labs, The Role of CEC in Nutrient Access
- Bill Zimmer DVM, Midwestern Bio-Ag, Bio-Vet

We'll also talk about the MBA Forage Program, our Dairy Nutrition program, Icelandic kelp, transitioning CRP land, what's new at Midwestern Bio-Ag, and consultants will share some of their success stories.

The new remote consulting program will also be discussed in more detail.

As soon as we have our schedule set, it will be posted on our website, www.midwesternbioag.com. It will also be available by contacting the Bio-Ag office at 1-800-327-6012.

TRADING POST

Organic Hay for sale— Small rounds, second cutting. 319-533-7413

10 ft. Hart-Carter for sale — ground driven dyna-drive with crometer row, $2,500 Call 715-267-3272

OrganicHolstein heifers for sale— 20 head, recently fresh, sell one or the whole group, Viola, WI call 608-606-3672

Organic corn for sale— 4,000 bushel Call 608-797-0136

Organic alfalfa hay and wheat straw for sale— rounds and large squares. Have tests on hay. 515-370-0036

Herd Reduction Sale— We have grown our organic Holstein dairy herd from 120 to 250 cows in the last 3 years. We are selling 120 head, selected for strength, high forage diets and longevity. Records available. Gary Zimmer 608-225-9839

Hay for sale— 4x4 round bales, 1st & 2nd cutting, net wrapped 262-224-4038

Howard Rotovator— 13 ft. wide, model HR50. Call 515-370-0036

Organic HMSC corn— 18,000 bu., also 400 square bales, 1000# wet. 608-647-2611

3-year rolling acreage contracts from Organic Valley, with a minimum floor price for 15 crops including hay. For program description and enrollment packet, call 888-809-9297 or feed@organicvalley.coop

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! For more information, call 1-800-327-6012, ask for Tim Williams

Wanted– Organic producers of milk, meat and eggs. Now and into the future. Please contact Organic Valley 1- 888-809-9297

Trading Post ads run one time free.
To place an ad in the Winter edition of the BioNews, call Mary at 1-800-327-6012 by Dec. 12.

Energy sources for dairy

From the MBA Dairy Staff

Farmers no longer have $20 milk so everyone needs to be smart in how these cows are being fed. Here at Midwestern Bio-Ag we are making sure that our rations are formulated following the same proven methods as we always have to allow you to be as profitable as possible. We are paying close attention to energy sources such as starch and bypass fat in the diet.

Bypass Fat

Bypass fat provides an extra boost of energy in the ration.

Most cows are in a negative energy balance due to high demands for milk production and low dry matter intake. As a result, the cow uses nutrient reserves, particularly body fat to meet her energy needs. Adding a bypass fat to the ration is a profitable & logical method to replace this "lost" energy. One pound of fat is equivalent to three pounds of shelled corn. Supplemental bypass fats allow cows to keep their body condition, especially after calving.

> Bypass fat provides an extra boost of energy in the ration.

The benefits of feeding bypass fat include: increased milk yield, fat tests can be maintained or improved, reproductive performance is increased because cows return to positive energy balance earlier, and overall energy status is improved. All of this can be accomplished without the harmful effects of overfeeding starch and having low fiber intakes. Bypass fats are inert in the rumen meaning they are not digested in the rumen and do not affect the rumen microbes. The bypass fats are then utilized in the cow's intestines. This makes them different from a regular fat which can interfere with rumen organisms making them less effective at digesting forages.

We recommend feeding Energy Elite or its organic version, NRG Organic. Energy Elite and NRG Organic will ensure your cows are getting the energy they need to produce their best, keep optimum body condition, and breed back at peak efficiency.

We also recommend using Alcomp to provide needed energy and feed the rumen microbes. Alcomp is the perfect fit for most non-organic dairy herds. It provides higher energy, can eliminate animal fat, reduce purchased protein, and allows farmers to use more homegrown forages. With Alcomp in the diet, cows will do less sorting and have less feed refusal.

We recommend the following minimum levels of bypass fat for a dairy herd with high milk production (80 pounds of milk or higher) and feeding Alcomp.

> 80 lbs. w/Alcomp	Amount of bypass fat
Pre-fresh	.25
Post-fresh	.50
Breeding group	.50
Pregnant/low milk	.25

We recommend the following minimum levels of bypass

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....energy sources for dairy

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fat for a dairy herd with medium milk production (below 80 pounds of milk) and feeding Alcomp.

< 80 lbs. w/Alcomp	Amount of bypass fat
Pre-fresh	.25
Post-fresh	.25
Breeding group	.25
Pregnant/ low milk	.25

We recommend the following minimum levels of bypass fat for a dairy herd with high milk production and not feeding Alcomp.

High w/o Alcomp	Amount of bypass fat
Pre-fresh	.50
Post-fresh	.75
Breeding group	.75
Pregnant/low milk	.50

Finally, we recommend the following minimum levels of bypass fat for a dairy herd with medium milk production and not feeding Alcomp.

Medium w/o Alcomp	Amount of bypass fat
Pre-fresh	.25
Post-fresh	.50
Breeding group	.50
Pregnant/low milk	.25

Starch

Starch is another very important energy source in a ration. Cows need a pound of starch for every pound of protein fed in order to maximize protein production all day long. We also need to make sure that the type of starch being fed matches the forage fed.

Starch can ... get you in trouble if it is out of balance in the ration.

An example is long stemmed forage such as baled hay or balage which requires a balance of rolled corn and barley or oats. Paul Deckard, nutrition division manager, says, "1100 microns is a great size for grain in a balage/baled hay based diet. Alternately, 800 microns is more ideal for a haylage diet along with corn silage."

The corn in corn silage is released more slowly allowing for a more finely ground starch product to be fed. It is very important that we have enough starch and protein in the rumen as well as in the digestive tract and intestines.

We recommend that rations include starch levels between 19% and 24% of the total diet.

Starch can however get you in trouble if it is out of balance in the ration. Starch has a large effect on rumen pH when out of balance. When left unchecked, it can cause acidosis.

We like to balance starch to forage NDF. The less forage NDF and/or forage in a ration, the less starch we can safely feed. The more forage NDF in the ration, the more starch its possible to include. Chop length also plays into the picture. The shorter the chop length, the less starch from grains you can feed.

It is extremely important right now with lower milk prices to get the most out of the starch in your ration and to utilize bypass fat for extra energy. Talk to your Midwestern Bio-Ag consultant about making sure you are getting the best possible use of your starch and bypass fat along with the other components of your ration.

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