



BIO-NEWS

WINTER 2012

VOLUME 17, ISSUE 1

A plan for healthy soils

By Mary Pohlman
MBA Communications

Biological farmers know that a healthy, fertile soil is necessary to grow healthy, high yielding crops. But what is a healthy soil and how can you improve your soil's health?

A healthy soil, wrote Gary Zimmer in his book *The Biological Farmer*, has adequate air and water, balanced levels of essential plant nutrients, plenty of organic matter and a thriving population of the beneficial organisms that help maintain soil health and nourish plants.

So how do biological farmers build and maintain healthy soils? What practices, products and mindsets do they use?

Brian and Kathy Holste work the biological program for healthy soils with a whole list of practices and products. A second generation Midwestern Bio-Ag farmer (his Dad started with MBA back in the 1980's), the Rock City, IL farmer works

Healthy soil, says Brian, is "loose and crumbly, not tight. It should have a good earthy smell—I love the smell of soil in the spring. And it should be highly productive and relatively low maintenance."



Brian and Kathy Holste farm MBA's biological system with an eye on building healthy soils as the foundation of their farm's success.

550 tillable acres, some owned, some rented, with a small dairy operation as well as some cash grain sales.

"It's not one thing," Brian says of finding success with the

biological system but it's doing many things; it's learning from many sources, gleaning good ideas and adapting them to fit his farm and management style.

Brian's soil program, in fact, is a pretty good interpretation of the basic tenets of the Six Rules of Biological Farming: soil balance, quality fertilizers, minimizing

pesticides/herbicides /N; rotations/diversity, controlling soil air and water, and feeding soil life.

Healthy soil, says Brian, is "loose and crumbly, not tight. It

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Gary Zimmer's Winter Letter

Dear farmer/agribusinessperson

I just returned from the annual AcresUSA conference in Columbus, Ohio, a gathering that drew 1600 people from 49 states and 11 countries. It's always a great event, with so much going on and so many enthusiastic farmers with operations of all sizes and types.

I did a three-hour workshop on my topic for this year: What are you managing for? What we think or what we know or we believe is in the end of little consequence. The only thing of consequence is what we do or don't do.

If you are growing a single crop like corn and pouring on the nitrogen and plant protective compounds, you are managing for grasses and the type of soil life that likes, lives on, works with or attacks corn and its' residues; that tolerates the tillage used, the chemicals, the technology altered plants, and the air that may or may not be in the soil. What you do and how you manage the situation you're in guarantees your success or failure.

Going to these conferences certainly could confuse you or send you down a trail that may or may not allow you to achieve



your objectives. How do you sort through all the options? I've been in this biological farming business for over 30 years and have seen many technologies and products come and go, but the good solid basics are always there.

What you do, does it affect your nutrient levels, was it the right stuff and amount? The practice or product, was it to affect your biological or physical or the nutrient levels and balance? You could attend classes on soil balance, growing green manure crops and soil biology. What about no till and soil aeration? How do you sort it all out?

I did have many discussions about tillage or not; it's not the practice, it's the result that mat-

ters! What are you managing for? Loose crumbly ground with lots of life in it; regeneration and rebuilding of soil organic matter. So if you plow, dig, disc or do nothing, are you heading toward your goal? Your objective is well aerated soils, high in fertility but there are many ways to get there. Then there is compost, green manure crops, and carbon. Again, what is your objective? Feed the soil life any time you can and feeding them a variety of plants does lead toward healthy well aerated soil.

Remember, there are lots of ways to do things. What crops to grow and when do I work them in? Also, our objective is

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....Gary Zimmer's Winter Letter

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to have no crust on the ground and when it rains, water needs to soak in. If I want to really take the crops I'm growing to new levels of yield, nutrition and health, having healthy, mineralized soils goes a long ways. It's a system, don't just grab parts and pieces or if you do, you need to recognize the possible restraints and problems you could face.

Winter meetings:

Dairy, corn, alfalfa, more

My winter meetings this year will be about what we are managing for, and will include case studies on a variety of farming operations.

Dairy: I will show you case studies of a group of farmers from South Africa who are grazers and work for profit. They are managing for milk from grass, and they don't want to spend money on equipment. Their issue was nitrogen use (up

to 300# per year) and the need for grain to keep the cows producing at 12,000#. They said they were managing to get rid of the nitrogen use, or at least greatly reduce it, and lowering grain use from 10-12#/cow/day. This would be the reward of their management: reducing N costs, grain usage and having healthy, trouble-free cows.

To reach these goals they really needed to manage for healthy soils with more available calcium and phosphorous so they could have a balance of grass and legumes. They needed to place a lot of emphasis on quality forage with a balance between energy and protein. They also needed an impeccable, perfected dry cow program, not 'out of sight, out of mind' or 'poor pastures in the back forty', saving dollars.

Corn: I will also go over case studies on growing 200 bushel corn, comparing conven-

tional, organic and biological systems. What management systems are required for all three methods or at least, which ones head you toward your goals.

Alfalfa: My presentation will outline the 'how tos' and 'watch out fors' with various systems on case studies on alfalfa. If you were to manage for ten tons of hay per acre, what would your fertility program be? How long will it take? What road will you follow to get you there?

More: In addition, I will do case studies on vegetables, wheat, soybeans and profile a good biological farm, the one that is featured in this newsletter.

I'm sure it will be an educational, information-packed day providing you with more ideas and tools to reach your goals, and what you're managing for.

We also have new research products and our new liquid carbon based fertilizers. Our new dairy team is bringing better education to our consultants and to your farms, along with assistance on your farm to help you achieve your goals within your economics and objectives.

As with many winters, I have a full schedule. It's a challenge, but I enjoy getting the message out and sharing the biological farming story.

Meetings will start at 10:30 sharp (there's so much to cover!) and end by 3 p.m.

See you somewhere this winter.

Gary F. Zimmer

| Mineral | Percent | Lbs/acre |
|---|---------|------------|
| Nitrogen | 3.80% | 201.1 lbs |
| Calcium | 1.69% | 89.6 lbs |
| Phosphorus | 0.31% | 37.7lbs* |
| Magnesium | 0.51% | 26.9 lbs |
| Potassium | 1.89% | 120.4 lbs* |
| Sulfur | 0.28% | 14.7 lbs |
| Zn, Mn, Fe, Cu, B | | 14.26 lbs |
| * Value converted to P ₂ O ₅ and K ₂ O | | |

At the winter meetings, we'll also discuss this chart, which shows the nutrients provided when plowing down a crop of clover estimated at 2.65 tons/acre.

First year research results on MicroHume®

By Leilani Zimmer-Durand
MBA Research Specialist

This year Midwestern Bio-Ag conducted replicated plot trials at the University of Wisconsin's Arlington Research Station to look at the effectiveness of MicroHume®, MBA's new humate-based micronutrient product.

The field selected for this study has rich, black Wisconsin prairie soils which have had a lot of inputs over the years, including dairy manure. The research trial was done on silage corn using the University-recommended conventional fertilizer program. The only variable between the plots was the addition of MicroHume®.

Because this is only one year's data, the results are preliminary, and it won't be possible to draw any firm conclusions until after one or two more years worth of data are collected. That said, this year's results looked promising.

The MicroHume® plots performed very well. Tissue tests were taken twice during the summer to look at both macro and micro-nutrient levels in the silage corn leaf tissue. The results showed some trends toward higher nutrient levels in the MicroHume® plots, especially with boron. Tissue boron levels went up incrementally as more MicroHume® was added.

When the plots were examined just before harvest, there were clear visual differences between the plots that received Micro-

| | Urea | 9-23-30 | MicroHume® |
|---------|--------------|--------------|-------------|
| Control | 215 lbs/acre | 100 lbs/acre | None |
| MH 50 | 215 lbs/acre | 100 lbs/acre | 50 lbs/acre |
| MH 75 | 215 lbs/acre | 100 lbs/acre | 75 lbs/acre |



Above at left is the sample from a control plot, while at right is the sample from a plot where MicroHume® was applied at a rate of 50 lbs./acre.

Below, the sample on the left is from a control plot, while at right is the sample from a plot where MicroHume® was applied at a rate of 75 lbs./acre.



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....First year research results

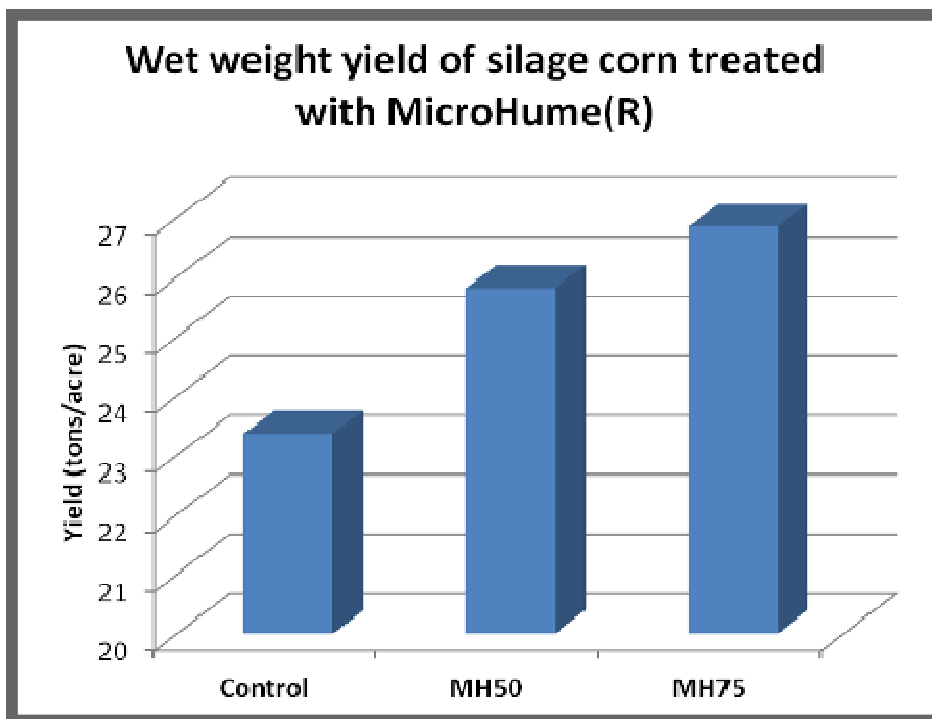
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Hume® and those that didn't. The silage corn on the MicroHume® treated plots looked taller, greener, and healthier. Plots that did not receive MicroHume® had shorter plants that had a lot more dry, yellow tissue on them. Even though plants were not tested for disease, it appeared that there were more disease problems in the untreated plots.

Yield data from this year's trials shows that the plots that received 50 lbs/acre and 75 lbs/acre of MicroHume® yielded more than the plots receiving no MicroHume®. The percent of trace minerals in each plant at harvest wasn't very different between the plots, but with an up to 14% yield increase, more minerals were taken up per acre on the treated plots than on the untreated ones.

We know that micronutrients are essential for plant growth. Deficiencies can occur under intensive cropping if micronutrients are not replaced, and when glyphosate is used because of the interaction between some micronutrients and the herbicide. Micronutrient deficiencies negatively impact yield and crop health. Don't let a micronutrient deficiency be your limiting factor.

Consider adding MicroHume® to your fertilizer blend this year. This Midwestern Bio-Ag exclusive



product is a homogenized, pelletized trace mineral package that includes calcium, sulfur, and humates. Adding humates to trace minerals greatly improves the quality of the product because humates make trace minerals more available, both

through their low pH and the presence of binding sites on the humates to hold on to the trace minerals so they don't leach or tie up when added to the soil. This makes MicroHume® a high quality, efficient form of trace nutrients.

After one year of replicated plot trials at UW's Arlington Research station, silage corn on plots that received MicroHume® outperformed those that did not by up to over three tons per acre. In addition, the plots that received MicroHume® looked better than those that did not, possibly due to less disease pressure.

This trial will be continued next year, so look for an update on MicroHume® research next fall.



.... A plan for healthy soils

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should have a good earthy smell—I love the smell of soil in the spring. And it should be highly productive and relatively low maintenance.” Add in a thriving population of earthworms as an indicator of healthy soil life, and then get it mineralized as well. “That’s what we’ve been striving for,” he states.

“We got started (working with Midwestern Bio-Ag) with a focus on our forages and our hay—typical for a lot of dairymen.” Back then, he recalls, “we had trouble getting enough hay in a season” for the farm’s 80-cow dairy herd and young stock.

The Holste’s began making improvements by applying Bio-Cal®, then added diversity with grasses in the hay (they’re now at about 60% alfalfa, 40% grasses) and, working with MBA consultant Duane Siegenthaler, applied Bio-Ag blend fertilizer, 2-6-20 with calcium, sulfur and traces. “These things have just made our yields go through the roof,” says Brian. Now, he has the pleasant problem of having so much hay that he’s run out of room to store

it and has begun selling some of the excess. And, as an added bonus, “The cows like eating the hay when there’s grass in it. It just feeds better.”

Rotation, cover crops, green manure crops

A short hay rotation is a key part of the biological program on the Holstes’ home farm: corn,

herbicides” to save on time and labor, but very cautiously due to concerns over mineral tie-up.

He does use chemicals to kill out seeding when he’s ready to rotate to corn, spraying in the fall. In the spring he knifes in slurry manure, tills once with a finisher and plants corn.

As soon as the soybean crop is harvested,

Brian drills in winter rye. “It’s a cover crop and a green manure crop,” Brian notes. “Later in the fall, we’ll knife in some slurry, into the rye.” In spring, he spreads ammonium sulfate as a nitrogen source, tilling once with the soil finisher before planting corn.

On the other farms, where he doesn’t have access to dairy manure, he also drills winter rye

after beans but applies MBA’s Chicken manure crumbles (dehydrated, from laying hens) to substitute for manure.

After corn harvest on ground that will go next to beans, he spreads Bio-Cal® on the corn stalks. All the corn and soybean ground gets 2-6-20.

Fields that are going from corn silage to hay get a different

The Six (Modified) Rules of Biological Farming

1. Test and balance your soils and in addition, feed the crop a balanced supplemented diet.

2. Use fertilizers which do the least damage to soil life and plant roots. Watch salt and ammonia levels.

Use a balance of nutrients, with a balance of soluble to slow release and a controlled pH. Use homogenized micronutrients, add carbon and place them properly to enhance performance.

3. Use pesticides, herbicides and nitrogen in minimum amounts and only when absolutely necessary.

4. Create maximum plant diversity by using green manure crops and tight rotations.

5. Use tillage to control the decay of organic materials and to control soil air and water. Zone tillage, shallow incorporation of residues and deep tillage work great on many farms.

6. Feed the soil life, using carbon from compost, green manures, livestock manures and crop residues. Apply calcium from a good, plant available source.

soybeans, corn, then three years hay. With the farm divided into three sections, he’s always seeding down a different section every year. On the other farms, the rotation is corn, soybeans but not really—he grows cover crops in between.

“I like to minimize my chemical use,” notes Brian. “I don’t use any insecticides. We do use

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green manure crop, one that serves two purposes. He drills in oats and tillage radish then spreads pen or yard manure in fall or winter. The oats and radish kill out over winter, leaving clean ground for the new crop. Why oats and radish? “Oats scavenges excess nutrients,” Brian explains, while “tillage radish helps loosen up the soil.” This also saves passes over the field.

The only other nitrogen source Brian uses, in addition to either dairy manure, chicken crumbles or green manure crops, is 300 lbs./acre of ammonium sulfate in the spring. While he had used urea in the past, that’s no longer part of Brian’s program, and he definitely avoids anhydrous. He’s aware of all the warnings about “how potent and dangerous” anhydrous is to applicators, so he believes it’s “just as potent and dangerous to life in the soil.”

The benefits of sulfur

One of Brian’s goals with his fertility program is to be sure that from his various inputs he’s adding 100 lbs. of sulfur to his soils every year. “It helps stimulate biological activity,” he says. The 100 lbs. is “a target I shoot for, which is why I discontinued the use of urea.”

Consultant Duane Siegenthaler recommends sulfur for several important reasons. First, it’s a vital nutrient in plant growth, including playing an important role in complete proteins. Secondly, it’s a key component in breaking down residues and



Brian Holste shows winter rye growing. The cover crop/green manure crop is sparse in late fall, but it will quickly green up in early spring and provide benefits to the soil. Manure was also knifed into the soil.

forming humus, a stable form of organic matter. Continuing applications are needed because it is also a nutrient that leaches easily. And while it’s not one of conventional agriculture’s big three (NPK), it is needed in fairly large amounts. For example, Duane explains, crop residues can easily total 10,000 lbs./acre especially with small grains. It’s recognized that 1 lb. of sulfate sulfur is required per

100 lbs. of residue, giving the requirement of 100 lbs./acre/year.

Sulfur is also known to loosen and aerate soils, reduce excess magnesium and make nitrogen more available.

Healthy soils, high yields

The Holste farms soils definitely meet Brian’s healthy soils criteria of high yielding and that

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WINTER MEETING SCHEDULE 2012

We hope you'll be able to join us at one of the following educational meetings presented by Midwestern Bio-Ag and your local Bio-Ag consultants. Our winter meetings are a great opportunity to learn, share and discuss biological farming.

Gary Zimmer, president of Midwestern Bio-Ag, farmer, educator and author will be the speaker unless otherwise noted, on the topic of **What are you Managing For?** He'll also show pictures from and discuss some of the many farms he visited during his travels this year.

Bob Yanda, president of Midwestern Bio-Ag of Iowa, will speak at numerous meetings. He will discuss the **The Benefits of Balanced Fertilizer for Plant Health, Higher Yields and Improved Profitability.**

We've also listed conferences and other events where Gary and Bob will be speaking this winter; these do charge admission fees.

All meetings start at 10:30 a.m. and conclude by 2:30 p.m. with lunch provided free in most cases (exceptions are noted in the listing). If you have any questions, please call the consultant at the phone number listed. We hope you will join us to for these entertaining and educational meetings!

| | | |
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| Tuesday, Jan. 3 | Midwestern Bio-Ag of Iowa 1.888.465.3503 | Tama, IA at the Meskwaki Casino/Bingo Hotel |
| Wednesday, Jan. 4 | Firman Hershberger 319-430-0383; 319.656.2477 | Kalona, IA at the IA Clothing Center (2 mi north on Hwy 1 to Johnson/Washington Rd, then 1 mi east) |
| Thursday, Jan. 5 | Firman Hershberger 319-430-0383; 319.656.2477 | Memphis, MO at the Fitness Center on Hwy 136 |
| Friday, Jan. 6 | Midwestern Bio-Ag of Iowa 1.888.465.3503 | Monticello, IA at the Eagles Club |
| Tuesday, Jan. 10 | Scott Wood 608.822.4923 Bob Johnson 608.375.2595 | Fennimore, WI at St. Mary's Church Hall |
| Wednesday, Jan. 11 | Joe Danzinger 715.495.5504 Bob Schmidtknecht 608.797.1348 Travis Klinkner 608.633.1981 | Arcadia, WI at the Country Club |
| Wednesday, Jan. 11 <i>Bob Yanda</i> | Andy Miller 217.543.2669 | Arthur, IL at Yoder's Kitchen |
| Thursday, Jan. 12 | Joe Danzinger 715.495.5504 Bob Schmidtknecht 608.797.1348 Travis Klinkner 608.633.1981 | Cashton, WI at the Community Hall |
| Thurs.-Fri., Jan. 12-13 <i>Bob Yanda</i> | National No-Till Conference | St. Louis, MO at the Hilton St. Louis at the Ballpark |
| Friday, Jan. 13 | Ken Anderson 608.498.3832 Andersen Feeds 608.582.2595 | Centerville, WI ; Community/Curling Club on State Rd 54/93 |
| Sun.- Tues., Jan. 15-17 <i>Bob Yanda</i> | Quad Cities Farm Show | Rock Island, IL at the QCCA Expo Center |

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| Monday, Jan. 16 | Dee Meiners 507.456.9406 | Caledonia, MN MacalGrove Country Club |
| Tuesday, Jan. 17 | Andy Glodowski 715.797.1042 | Menomonie, WI ; Pioneer Grill and Saloon, E5699 Cty Rd D |
| Wednesday, Jan. 18 | Ray Yokiell 507.380.5745 | Wells, MN at The Haven |
| Wednesday, Jan. 18 <i>Bob Yanda</i> | Tim Chitwood 608.347.1463 | Waunakee, WI at Rex's Innkeeper |
| Thursday, Jan. 19 CORRECTED! | MBA of Minnesota 866.485.4300 | Plainview, MN ; Stumble Inn 2 at the Piper Hills Golf Course |
| Thursday, Jan. 19 <i>Bob Yanda</i> | Mark Klish 715.347.0545 | Plover, WI Elizabeth Inn and Convention Center |
| Friday, Jan. 20 CORRECTED! | RSVP to MBA of Minnesota 866.485.4300 or 507.932.4300 | Avon, MN ; Joseph's Fine Dining, 322 Blattner Dr; (I-94 exit to Co Rd 9) |
| Friday, Jan. 20 <i>Bob Yanda</i> | Ron Gifford 608.558.7434 800.228.2189 | Barneveld, WI Deer Valley Lodge |
| Saturday, Jan. 21 (Fee to attend) | Lake Superior Sustainable Farming Assn.; 218-879-3829 | Duluth, MN , at Peace United Church of Christ |
| Monday, Jan. 23 | Dee Meiners 507.456.9406 | Owatonna, MN at Cabella's |
| Tuesday, Jan. 24 | Duane Siegenthaler 800.228.2189 | New Glarus, WI New Glarus Hotel Restaurant |
| Wednesday, Jan. 25 | Wayne Meissen 815.298.4350 or 800.228.2189 | Union, IL Roger Heimsoth farm, 6916 Dunham Rd. |
| Wed.- Fri., Jan 25-27 <i>Bob Yanda</i> | Indoor Farm Show | Minot, ND ND State Fair Center |
| Thursday, Jan. 26 | Wayne Meissen 815.298.4350 or 800.228.2189 | Janesville, WI ; at The Milwaukee Grill, 2601 Morse St. |
| Friday, Jan. 27 | Duane Siegenthaler 800.228.2189 | Lena, IL Lena Community Center |
| Monday, Jan. 30 | Jason Hobson 812.340.6919 Alan Kauffman \$10 lunch included | Indianapolis, IN Country Inn and Suites, Indianapolis Airport South |
| Tues. Jan. 31-Thu. Feb. 2 <i>Bob Yanda</i> | Farm Power Show www.iowapowershow.com | Des Moines, IA at the Iowa Events Center |
| Wednesday, Feb. 1 | Southern Indiana Grazing Conf. Victor Shelton 812.882.8210 | Ondon, IN |
| Thursday, Feb. 2 | Alan Kauffman 937.844.9174 \$10, lunch included | DeGraff, OH at the Winner Harvest Barn, 7317 State Rt. 47 West |
| Friday, Feb. 3 | Alan Kauffman 937.844.9174 David Miller \$10, lunch included | Shiloh, OH ; Country Metals Meeting Room, 7316 Amstutz Rd. |

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| Saturday, Feb. 4 <i>Bob Yanda</i> | Bob DePauw 309.737.9379 | Hillsdale, IL; United Methodist Church, 124 Butzer |
| Monday, Feb. 6 | Tim Chitwood 608-347-1463 Dennis Schultz 920.261.6894 | Watertown, WI; Randy Schultz Farm, N8187 Hwy Q |
| Monday, Feb. 6 <i>Bob Yanda</i> | Trevor Pfeffer 519.369.7201 | Ayton, ONT, Canada Centennial Hall |
| Tuesday, Feb. 7 | Justin Wedig 608.482.3124 | Belmont, WI at the Sports Page |
| Tuesday, Feb. 7 <i>Bob Yanda</i> | Bio-Ag of Michigan 1.888.825.9373 | Bad Axe, MI Huron Co. Expo Center |
| Wednesday, Feb. 8 | Clem Griesbach 920.739.7584 | Black Creek, WI Romy's, W5670 Co Rd A |
| Wednesday, Feb. 8 <i>Bob Yanda</i> | Jonathan Graham 989.670.5993 | West Branch, MI Quality Inn Conference Center |
| Thursday, Feb. 9 | Mark Klish 715-347-0545 | Stratford, WI at the CountryAire Ballroom, Hwy P at Hwy 97 |
| Friday, Feb. 10 | Roger Drews 920.324.9306 Jenny Averbeck 920.517.1905 | Waupun, WI Pizza Ranch |
| Tuesday, Feb. 14 | Pat Lozier 208.604.1488 | Idaho; Call for location |
| Wednesday, Feb. 15 | Pat Lozier 208.604.1488 | Idaho; Call for location |
| Thursday, Feb. 16 | Payette Soil & Water Conservation Symposium; 541.889.9689 | Ontario, Oregon Four Rivers Cultural Center (Fee) |
| Sat.- Sun., Feb. 18-19 | Ohio Ecological Food & Farm Assn.; Renee 614.421.2022 | Granville, OH (Fee) High School and Middle School |
| Monday, Feb. 20 | Sam Zook 717.354.0614 <i>Fee for meeting and meal \$35</i> | New Holland, PA Yoder's Restaurant |
| Tuesday, Feb. 21 <i>Bob Yanda</i> | Ray Yokiel 507.380.5745 | Wells, MN at The Haven |
| Tues.- Wed., Feb. 21-22 | Pennsylvania Grazing Conference | Quarryville, PA |
| Thurs.- Sat., Feb. 23-25 | Organic Farming Conference MOSES, 715.778.5775 | LaCrosse, WI |
| Monday, Feb. 27 | Ron Scheele 519.719.0233 Paul Watson 519.627.0566 <i>Meal \$15</i> | Springfield, ONT; Canada; Malahide Community Place, 12105 Whittaker Rd |
| Tues.- Wed. Feb. 28-29 | Innovative Farmers of Ontario 519.986.3560 | London, ONT Best Western Lamplighter Inn |

Don't forget: All MBA winter meetings will start promptly at 10:30 a.m.
Don't miss a minute of these educational and entertaining presentations!

Meet MBA's first Vegetable Production Specialist

Allen Philo joins MBA team

By Mary Pohlman
MBA communications

Living and learning agriculture is a passion for Allen Philo, one that he now will be sharing with Midwestern Bio-Ag's customers. The vegetable production specialist joined MBA in December to bring his expertise to enhancing Bio-Ag's role in working with and providing products for the expanding world of vegetable growers.

Allen is excited at the opportunity to both teach and continue learning about agriculture. "I'm going to learn more about farming by doing this than (I would) by farming," he says. "Everybody has something to teach you. I love working with people who want to get better at growing things and see the improvements on their farms."

"I like working with small farms, with people just starting up," as well as assisting larger, established operations where the fun is in moving them "to take things up to the next level with quality and nutrients in food."

Allen's job duties will include working with growers as a consultant and problem solver, on a fee basis. He'll also work with current MBA consultants to help them improve their skills. In addition, he'll help MBA develop a line of products exclusively for the burgeoning vegetable grower market. "We're going to be building an entire product line for vegetables."

While vegetable production



Allen Philo

might seem to many like a whole other mysterious world, it has the same basic needs as other farming operations. "Soils are the same," he explains, and the nutrient needs of vegetables compared to other crops are similar. One big difference is the wide variety of plant types, as vegetables come from more than five different crop families and may have 3-5 different plants in each family, each with slightly different needs and production protocols. Another dif-

ference is "it's a different world of tools and techniques" for vegetable growers. But don't get hung up on the differences, he advises, because soil always works on the same principles.

Commercial vegetable production, with its dual requirements for both quality and quantity, push plants especially hard. It's like a modern dairy cow, he explains, whose dietary needs far exceed those of its once wild-living ancestors. Plants are no different. Twenty-first century agriculture expects them to produce higher quantities, and over shorter time periods. "We've pushed their minimum needs far beyond what their natural systems can produce," he states.

That's where extras are needed to fill the gaps to keep plants healthy. For example, "Foliar feeds help us put nutrients into the plant in a way that allows plants to be healthy

and increase disease and pest resistance."

Allen didn't set out to have a career in agriculture.

Though he was raised in Iowa, he didn't grow up on a farm. Rather he fell into what became his perfect vocation quite by accident when he

was asked to start a modest vegetable garden where he lived. But the task sparked his interest and a

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"Everybody has something to teach you. I love working with people who want to get better at growing things and see the improvements on their farms."

....A plan for healthy soils

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also means profitable. "I have great corn yields. I'm real pleased, with what I have to spend." In 2011, yields ran a consistent 200 bushel/acre corn and have been as high as 250 in other years. Soybeans averaged 65 bu/acre with yields topping 80 bu/ac on the home farm.

Brian recognizes the value of a "flow of nutrients, recycling nutrients for the next crop."

One final part of his program is learning and studying. "I have read Gary's first book and am in

the process of reading his second book. I enjoy going to winter meetings and reading the Bio-Ag newsletter. It's always interesting to learn how others are doing it and try to make it work for me."

Profitable, successful and good stewards of the land for the next generation (the farm has been in the family for nearly 150 years, and Brian and Kathy hope one or more of their three young sons might someday be interested in keeping it in the family), "I feel good about what

I'm doing."

Brian's advice for those just starting with the biological system? "It's a commitment. Don't expect a miracle in a year," but you will see results, sometimes very quickly.

He also recalls something that Gary Zimmer said: that anytime you can have something green and growing on the land, there's a benefit: it's harvesting the energy from the sun and you're feeding the soil life. With those cover crops/green manure crops "we're harvesting the sun's energy, something God gave us to use. It's really beneficial."

... New MBA vegetable specialist

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thirst for knowledge. Self-educated on soils and vegetable production, he learned by doing, experimenting with ways to improve soils and build organic matter. He read about soils and plants and gleaned ideas from many sources, and to this day, "I study a half hour a night to keep learning."

One of the first books he read, and one he continues to recommend, is John Jeavans *How to Grow More Vegetables*. He also discovered Albrecht's principles and eventually was given a copy of Gary Zimmer's *The Biological Farmer*. Those are three key sources he credits, though "I pull a lot of information from different places."

Three years in charge of field operations and soil fertility programs at the Gardens of Eagan, a 100-acre organic vegetable

farm near Minnesota's Twin Cities, gave him the opportunity to continue to experiment while building his knowledge base of soils and vegetables. It also introduced him to Midwestern Bio-Ag through consultant Mike Lovlien, who was already working with the farm when Allen was hired. "I think I drove Mike crazy," he says with a laugh, with constant questions in search of learning more.

Allen brings to Bio-Ag his experience with solving plant problems through nutrition, familiarity with the concepts of vegetable production, and hands-on knowledge of how to apply biological farming principles to the unique field of vegetable production. "I want to help producers grow healthier, higher quality crops, give them the tools and knowledge on how to make their systems better."

TRADING POST

Wanted

Midwestern Bio-Ag is in need of an Experienced Agronomist: For details about the requirements and rewards for this exciting new position, see the MBA website, www.midwesternbioag.com

Organic Producers: Contact Organic Valley/CROPP Cooperative for future opportunities in organic dairy, eggs, meat, soy and produce. Our Farmer Relations staff would be happy to assist you at (888) 809-9297.

Are you ready to help us change agriculture? Midwestern Bio-Ag needs consultants/dealers to provide our quality products and outstanding service to farmers. Call 1-800-327-6012 for details.

What is your dairy managing for?

By Dave Meidl
MBA Dairy Team

Farmers often ask us, as nutritionists, how can I get more milk? Or, how can I lower my feed bill? What I believe you really want to know is how to improve your feed efficiency to increase your bottom line profitability.

As nutritionists, we sample and analyze the nutritional value of the feeds you grow and make recommendations on how to supplement them to balance the diet for your animals.

The single largest ingredient in your dairy cows' diet is forage, so it makes sense to invest in influencing the quality of that feed. Of course, timing of harvest does relate to quality and some producers do need to start cutting earlier than they do, but

Tips for Improving Forage Quality

- ◆ **Use a balanced fertilizer program.**
- ◆ **Address trace minerals using a plant available, homogenized form.**
- ◆ **Add a soluble calcium source to your program.**
- ◆ **Stimulate soil biology through green manure crops and low salt fertilizers.**
- ◆ **Address any soil imbalances or deficiencies.**
- ◆ **Do a pH correction if needed.**
- ◆ **Shorten your rotation to 2-3 years of alfalfa & maximize yield.**
- ◆ **Incorporate grasses into your stand to improve energy density.**
- ◆ **Choose the highest quality genetics possible. The return on investment is high.**
- ◆ **Harvest at peak forage quality.**

I would challenge you to look further for more ways to improve quality.

Quality really starts with the

soil. What is your soil structure like? Is it hard, tight and compacted? Is it loose and crumbly? What is the soil biology? Is it active or stagnant? Are there earthworms? What is your crop rotation? What does your soil test show? Does your soil need correctives for pH or calcium? What are the phosphorus and potassium levels? How about your magnesium, sulfur or trace minerals?

Do you know that not all fertilizer materials perform the same? Are you selecting forage seed genetics to match the soil and what you want to feed your livestock?

Success really comes down to understanding what you are managing for. We all want high quality, highly digestible feed,

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Solid stemmed alfalfa like this contains more pectin which is a highly digestible energy source for cows.

MBA forages just feed better

By Jon Woolever
Midwestern Bio-Ag Livestock
Nutrition Specialist

Midwestern Bio-Ag fertilized forages, they just feed better.

This is a belief held by a lot of long-time MBA customers. One of the biggest responses they've seen to our fertility plan, besides increased yield and healthier plants, is that their animals perform better when consuming MBA grown forages. In the past, there was no good way to test or measure this response or predict

when it may happen. It was a leap of faith for many new customers. Today, we have a better understanding of how forages respond to our fertility program and what type of performance we can expect from those forages

Let's take a look at some new ways to measure forage quality and help predict improved animal performance. Over the last 15-20 years, researchers have developed and refined methods to predict how much of a forage

that an animal is likely able to digest and utilize. This is measured in a couple of different ways. NDF digestibility 30 hour (NDFD 30) is a measure of how much Neutral Detergent Fiber (NDF) in a forage may be digested within 30 hours after it's consumed by an animal. NDF is the largest component of forages and accounts for a large part of its energy value. Also, the potential 30 hour digestibility of the total dry matter content is meas-

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....what is your dairy managing for?

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but it takes a process to get there. We have to plan for it. That's animal nutrition from the soil up.

Our goal at Midwestern Bio-Ag is to help your operation be more profitable. Our consultants are trained to look at the foundation (soil) of your operation to make it a strong, sturdy platform for raising quality feeds.

When you change the quality of feed you also change the digestibility and availability of the nutrients that feed contains.

The minerals in a healthy plant are more available than feeding rock mineral supplements. The higher the quality of your forage (more pectins, sugars, digestible fibers and lower lignin), the less grain and expensive fat you need to supplement to meet your cows' energy needs. Forages cut later in the



WinterKingII, an MBA exclusive multi-leaf alfalfa, helps maximize forage yield and quality.

day have higher sugar levels which mean more energy, better fermentation and improved palatability. And let's not forget protein and the nitrogen-sulfur link to creating more complete protein.

Healthy soil produces healthy plants which produce quality feed which produces healthier cattle with less off farm supplements purchased. That means a higher level of profitability to you and your family.

....MBA forages just feed better

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ured and reported as IVTDMD 30. These two numbers give an indication of how much material within a given forage is potentially digestible and thereby usable as energy, protein, minerals, etc. Forages grown under the MBA program consistently have produced higher NDFD 30 hr and IVTDMD 30 numbers compared to those grown under a more conventional fertility program.

These estimates are further incorporated into the Relative Forage Quality index used to rank forages and predict relative performance. Although this number alone means nothing, a particular forage's RFQ index is a relative measurement that can be used to compare multiple forages or predict whether production may increase, decrease, or stay the same when switching to a new forage.

RFQ is a continuation of the Relative Feed Value (RFV) index developed at UW-Madison and used extensively by livestock producers. Because RFQ incorporates a prediction of digestible fiber it is the preferred number to use, if available, when comparing forages.

Above is a table showing the improvements in fiber digestibility and forage quality that are

| | NDF % | NDFD 30 | IVTDMD 30 | RFQ |
|-------------------------|-------|---------|-----------|------|
| MBA fertility | 43.1 | 46.9 | 77.6 | 151 |
| Conventional* fertility | 43.4 | 42.0 | 75.5 | 143 |
| Difference | N/S | 4.9 | 2.1 | 8 |
| % Difference | N/S | 11.7% | 2.8% | 5.6% |

*Conventional fertility values are an average of all mixed & legume forage samples sent to Dairyland Labs in Arcadia, WI from June to December 2010.
N/S = not significant

MBA produced forages will have higher energy values, be more completely utilized by the animal, and produce more milk and meat.

possible under the MBA fertility program. This table summarizes over 2,000 forage samples submitted by MBA customers during the past 3 years. They include both legume and mixed hay and haylage samples. When compared to samples from conventional programs, the MBA difference is clear! Although actual NDF levels were the

same, indicating that MBA forages were harvested at similar times and contained similar amounts of legumes and grasses, the quality indicators were significantly better.

With an 11% improvement in NDF digestibility and over 5% better total RFQ values, our producers can reasonably expect that MBA produced forages will have higher energy values, be more completely utilized by the animal, and produce more milk and meat when incorporated into the ration.

What makes Bio-Ag forages

so much better? It starts by using a balanced crop fertilizer and working to address both soil deficiencies and excesses. By incorporating soluble calcium and trace minerals into the fertility program, MBA helps forages realize their genetic potential and produce more digestible fiber with higher pectin and energy levels.

Many producers report that they are seeing more solid stemmed alfalfa plants on our fertility program and that extra pith contains highly digestible, high energy pectins. Also, by shortening your crop rotations and using green manure crops, plants are less stressed by disease and insect pressure and able to direct more of their resources to producing quality feed rather than fighting stress.

Talk to your local Midwestern Bio-Ag representative today to get started producing higher quality, higher energy forages.

Use the highest quality seed available coupled with MBA's proven fertility program to improve yields, digestibility, and forage quality.



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*What are you
managing for?*

2012 MBA WINTER MEETINGS

See the complete schedule inside this issue!