MIDWESTERN BIO-AG'S MINERALIZED BALANCED AGRICULTURE

BIO-NEWS

WINTER 2008 VOLUME 13, ISSUE 1

Health crisis spurs switch to organic

Making the 180 degree turn-around from conventional farming to organic farming can be driven by any number of reasons. None are bigger than the one that triggered Wisconsin dairyman Joe Wavrunek's switch of not just his farming style, but his whole life-style.

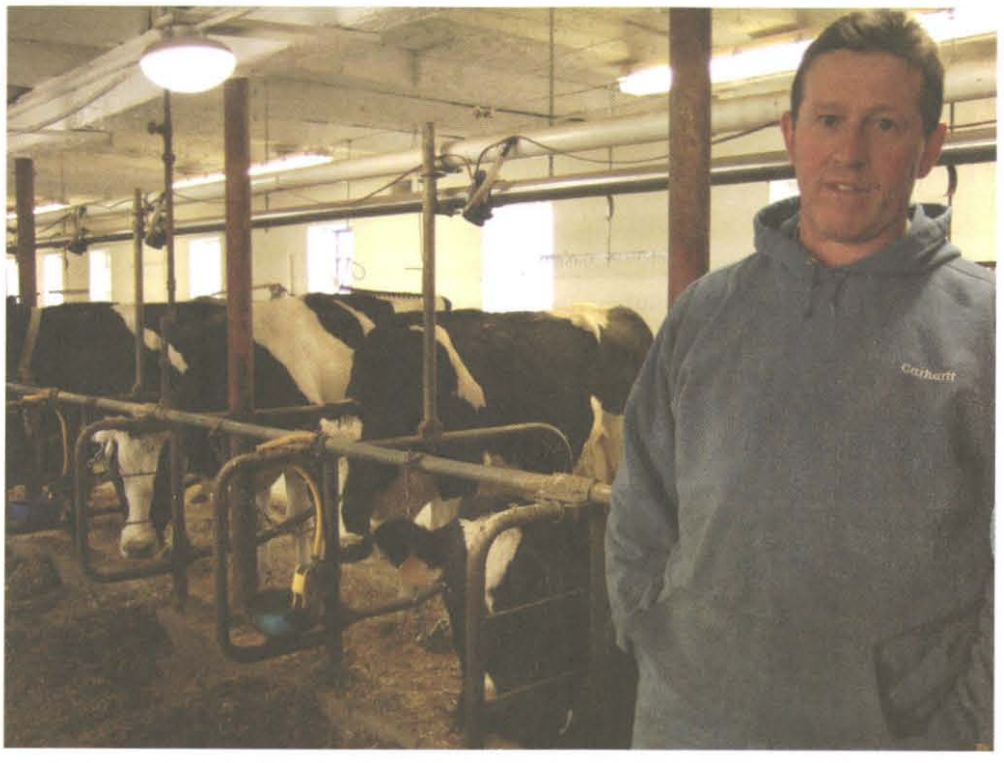
Two years ago, Joe Wavrunek discovered a fast growing mass on his neck. At first, doctors thought it was just a cyst. Further tests, however, led to the diagnosis that it was most likely an aggressive cancer.

Having been to "too many funerals" of those with cancer who'd opted for conventional treatment, Joe chose to pursue natural healing and, at the same time, rid his life-style of the chemicals he believes threatened his own health, and his farm's health. "The stuff God put on this Earth for us, we just have to be smart enough to use it," he said of the natural diet he and his family (and his cattle) now eat.

For himself, Joe traveled to the Wellhouse Center near Madison, Wisconsin where he underwent a series of natural treatments, converted to an organic diet plus natural supplements, and his tumor has stopped growing.

For his farm, Joe went organic. "I jumped in head first," he recalls of the decision to change.

Before life threw him a curve, Joe had spent his life as a conventional farmer. Farming is virtually the only job he's ever had, except for three dismal months right after high school when he worked in a factory. "I hated Monday mornings and the clock didn't move on the wall," he recalls. Joe quickly returned to farming, first with his brother, and then later he bought the family farm (land his great-grandfather purchased in 1883).



Wisconsin dairy farmer Joe Wavrunek turned a health crisis into positive changes on his farm.

> "Pushing the cows just doesn't get you any place."

Though his dad never sprayed, Joe started using chemical weed killers in 1981. He bought BT corn, used Round Up Ready seeds, and injected BST into his cows. The W's 65 cow dairy in those days had a 29,000 lb. herd average, but he couldn't keep the barn full. "I had a lot of DA's and always needed a hoof trimmer."

All the experts told him "You've got to get bigger and be more efficient," Joe recalls. "You made more (money) but you spent more, too. They sell you what you need to fix what they screwed up."

He recalls spraying and when the wind would change, the spray

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Gary Zimmer's Winter 2008 Letter

Dear Farmer/agribusinessperson,

It isn't hard to realize winter is here— just look outside. I think I missed out on our fall, too much travel. Talk about a roller coaster, our weather seems to be one extreme to the next. I'm fairly convinced it's not over yet— this may be the new norm.

It appears to me that when everyone else was planting corn, we should be planting wheat. So this fall when everyone was planting wheat, we planted rye. Not only did cereal rye get hard to find, but the price sure went up.

The good news in all this is that more and more farmers are realizing the value of green manure crops. Putting in rye after corn silage is kind of a no-brainer. We did some oats after corn silage on land we are seeding in the spring. With the beautiful fall we ended up with oats knee high. Being such good local feed we have attracted lots of deer bringing us free manure and spreading it.

I do believe you need to take every opportunity to have something growing on the land. Does our fall rye have more value as a cash crop or as a soil builder? I do know that when I get that soil healthier and mineralized it is sure a lot easier and less risky farming. Purchased nitrogen needs are greatly reduced and healthy crops are not a concern anymore.

> There is a lot more potential in our land – more yield per acre with less input per unit of production is very possible.

The bad news is that we cannot run a successful farm operation chasing the highest priced commodities. If that was the case, last winter we should have sold the cows, this winter sell our hay and corn, and, if we have the perfect crystal ball, next year plant or grow whatever peaks at the highest price— before everyone else does the same. I'm not sure that's farming, maybe that's business but the 'crystal ball farming' is next to impossible.

Farming is a system, we have a nutrient management plan, a crop rotation plan and organic milk to market. Corn is only worth $10 a bushel if you're buying or selling it. We are feeding it, and our focus is and always has been growing healthy, mineralized feeds, and feeding a high level of forages. To get as much milk as possible out of the feeds we grow, the cows must stay healthy and as trouble free as is possible.

Farming— what a challenge! That's why we do this, the freedom and the challenges, and the responsibility to the consumer.

I do believe the consumer is going to pressure the farmer to be more environmentally and animal friendly. Some things that

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....Gary's Winter Letter

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are being done to produce what is called food are sure questionable.

Winter is a time to think and plan. That has never been more critical than it is now to improve these soils. There is a lot more potential in our land— more yield per acre with less input per unit of production is very possible.

Winter meeting topics

Fertilizer prices keep skyrocketing, foreign demand and the weakening dollar are certainly driving forces in these increases. Using local resources, accessing soil nutrients, growing green manure crops, using plants and soil biology to grow your own fertilizer and protect your crop is the wave of the future, and that is biological farming!

My winter meetings this year will be about accessing minerals, growing fertilizer, getting efficient with nitrogen and soluble inputs, looking for limiting factors in corn production, and getting more bang for the buck.

What's new from Midwestern Bio-Ag will be another area I'll focus on.

We are now handling ESN (Environmentally Smart Nitrogen) a new polymer coated urea providing controlled nitrogen release. Not only can we get more efficient, but we can also take away the negatives created by extra nitrogen use.

accessing minerals, growing fertilizer, getting efficient with nitrogen and soluble inputs, looking for limiting factors in corn production, and getting more bang for the buck.

In addition, we now have a new calcium product for organic uses and a pelletized chicken manure available for our fertilizer blends.

Midwestern Bio-Ag is expanding our animal health care division as well. We are now working with Jerry Brunetti's Agri-Dynamics, bringing in new products that will complement our established line of Bio-Vet products, and offering more specific supplements. Read Jerry's article in this newsletter to learn a more about his company.

As always with my winter meetings, you will get the chance to see agriculture in different parts of the U.S. and around the world. This past year I've traveled out west, out east, to Hawaii, Australia, and New Zealand, along with many trips throughout the Midwest.

So please join us at one of our meetings, not only as appreciation for your support and as a celebration of agriculture, but also as a day of learning, sharing ideas, and expanding experiences.

My winter meeting schedule is included in this newsletter, along with a few of the meetings featuring Bob Yanda, president of Midwestern Bio-Ag of Iowa. (You may also check our website, www.midwesternbioag.com for any updates or additions).

Most meetings will be starting at 10:30 a.m. and ending no later than 3 p.m.

I hope to see you during my road travels in the coming months.

GFZ

Healthy mineralized soils are the biological farmers' goal— there are many methods and techniques to help you get there.

Agri-Dyanmics products based on Brunetti's holistic farm philosophy

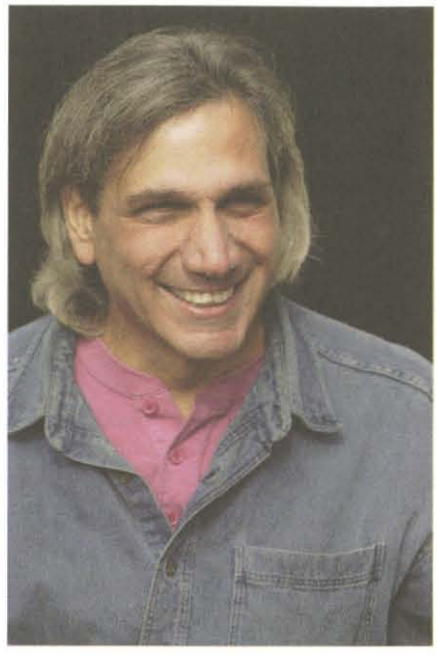
By Jerry Brunetti

Agri-Dynamics is a multi-faceted company involved with a myriad of product lines.

It began in 1979 when I was fully engaged in a service oriented business, catering to approximately 50 clients who were predominantly dairy farmers. The focus of the service was soil fertility using the newly embraced Albrecht model. Ruminant nutrition was involved as it was then practiced, with forage production oriented toward stored hay and haylage. To fill the void of agronomic and nutritional products and to meet our clients' needs, we offered kiln dust for calcium, New Mexico humates, seaweed, fish emulsion and trace elements for foliar application. Feed products were limited to micro-packages of trace elements, vitamins, probiotics and kelp for blending with macro-elements like calcium, phosphorous and magnesium- either on the farm or at the feed mill.

A holistic farm approach was assembled for those clients who were interested in reducing costs, preventing instead of treating problems, and desirous of avoiding and ultimately eliminating toxic inputs.

Fortunately for Agri-Dynamics and its clients, I was mentored by agricultural mavericks such as John Whittaker DVM of ACRES USA fame, Marshall McCullough of the University of Georgia and regular contributor to Hoards Dairyman, and world-wide agronomic consultant, Don Schriefer. Whittaker opened the door to understanding issues like molds and mycotoxins, blood urea nitrogen and rumen acidosis. 'Mac' McCullough was ahead of his time in emphasizing the critical need to feed ruminants a high forage diet. Don Schrieffer was a tillage aficionado, whose mantra, "What are your yield limiting factors?" encouraged his students and clients to look at the entire picture of soil management, especially managing air and crumb structure.



Jerry Brunetti is internationally recognized for his knowledge on natural products for animals and humans.

A holistic farm approach was assembled for those clients who were interested in reducing costs, preventing instead of treating problems, and desirous of avoiding and ultimately eliminating toxic inputs.

Naturally, clients who began managing their farms as organisms also wanted to address their occasional livestock maladies without pharmaceutical drugs. At that time, organic certification didn't exist for meat and dairy.

There were only two economic incentives not to use drugs. One was the loss of revenue associated with dumping milk or withholding meat animals from market. The other incentive was to avoid the stiff penalties associated with having shipped a positive (for antibiotics) load of milk or an animal with drug residues.

My prior experience as a manager of a regional bulk tank unit for the National Farmers Organization with responsibility to oversee quality control, including antibiotic residue concerns, led to my discovery that colostrum whey products could provide an alternative to the challenges of mastitis and calf scours. This became the impetus for launching the distribution of Biocel CBT which continues to be a strong foundation of our current and very diverse product line. The enthusiastic demand for recipes or formulas of botanical infusions (decoctions) and whole crude herb formulas complexed with other supportive ingredients (probiotics, enzymes

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...Agri-Dynamics products based on natural & holistic philosophy

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and nutritional ingredients) led to the Agri-Dynamics nutriceutical product line, which I now appropriately refer to as 'farmaceuticals.'

In the mid 1980's Agri-Dynamics started distributing a non-swelling, montmorrillonite clay called Dyna-Min. This unique product has been used in animal feeding since 1947 and has been extensively researched by Texas A&M, U.C.- Davis, the US Dept. of Interior and private feeding trials. Dyna-min not only provides numerous trace elements but also has the ability to sequester toxins such as ammonia, mold toxins and lactic acid. Thus it's a cost effective buffer, micro-nutrient source, digestive aid and ammonia scavenger. Dyna-min is an important component in Agri-Dynamic's dry formulations and remains a popular trace mineral to add to finished feeds or to offer free choice.

The high costs of livestock replacement is forcing all stockman, both organic and conventional, to pay close attention to all of the nuances of a holistic approach as the 'silver bullet' mentality of yesteryear continues to erode.

Dry formulations utilizing the herbal constituents with synergistic ingredients were the initial formulations along with the colostrum whey serum.

From there botanical aromatics or essential oils were developed for tandem use with other compatible liquids like herbal infusions or teas. Finally, a botanical pharmacy was retained that produced standardized, alcohol tinctures from wild crafted and organic botanicals for the human naturopathic healing professions.

Proprietary blends for specific livestock issues were formulated (e.g. immune support, respiratory support, reproductive support, etc).

Currently, the Agri-Dynamics line addresses nutriceutical support of all the major performance concerns facing livestock. It's very encouraging to the Biological Farmer that these complementary and supportive products are quite effective because sound soil and nutritional practices provide a solid foundation for a vigorous immune system which is quite responsive to our formulas. For the conventional farmer, these products are often used at times of transitional stress, such as calving. They are also very supportive and compatible with orthodox medications. For example, antibiotics, when they work, kill bacteria. But, nutriceuticals can go a step further by supporting both the immune system as well as elimination organs. This is vital to the recovery process.

Agri-Dynamics also recommends other generic, cost effective nutriceuticals to enhance the effectiveness (synergy) of our formulas and to reduce recovery time. We offer an unconditional guarantee on most of the products- no questions asked.

Complementary and supportive products have come of age due to a variety of factors. Organics' popularity is fueled not only by an increasingly health conscious consumer, but also by the bad news reported on drug residues and antibiotic resistance. The high costs of livestock replacement is forcing all stockman, both organic and conventional, to pay close attention to all of the nuances of a holistic approach as the 'silver bullet' mentality of yesteryear continues to erode.

Ecological food production is truly a growth industry and those farmers who are entering the paradigm shift in healthy food production will need the appropriate tools- sound soil management, comprehensive nutrition and effective medicinal products and modalities to address the occasional livestock health challenge.

Putting all these components together entails educating clients about ecological farming practices: comprehensive soil fertility, high forage, nutrient-dense rations and holistic livestock modalities that can address the occasional animal health challenge.

x————x

Midwestern Bio-Ag has a tested and proven line of animal health products that include Bio-Vet nutritional supplements and DFMs. We are pleased to now offer a select group of Agri-Dynamics products as we expand our Animal Health Division in 2008.

Ask your Midwestern Bio-Ag consultant for more information.

....health prompts organic move

(Continued from page 1)
would blow back on him. He also used a pest control service, having the barn treated for flies, other insects, and rodents. Today, knowing how easily chemicals are absorbed by the skin, he wonders about the chemicals that entered his body just by touching stantions, walls or milking equipment inside his barn.

With life giving him a wake up call, Joe abandoned the conventional chemical practices and went in search of something different. Help with the transition, and support for his new goals, was hard to find. "One person said I was nuts, another said that (going organic) was the last straw before losing the farm." But Joe ignored the naysayers. "I talked to anybody who had anything organic" and tried various products.

"I was looking for something, but I didn't know what," until he discovered Midwestern Bio-Ag.

A friend told him about MBA and certified consultant Clem Griesbach, who was working with several farmers in Joe's area east of Green Bay. "I set up a meeting with Clem and went on the MBA program," Joe recalls.

Hearing Gary Zimmer speak at Clem's winter meeting last year had sealed his decision. "I never heard a guy talk that fast, have humor involved, and make that much sense."

Joe doesn't miss the old conventional farming ways. For example,

Joe is working to raise healthy calves from day one.

his first concern is no longer herd average, but healthy, profitable cows are his goal. "Pushing the cows just doesn't get you any place." Today, one year away from organic certification, and using Midwestern Bio-Ag's program, "the cows are healthier," Joe says happily. "Dr. Paul Detloff says correct soils and you'll get the health in the cows. It's starting to happen already."

Today, the Wavrunek farm's vet calls are just for routine health checks— his last herd check on 19 head, 17 were bred, "most on first service." He hasn't used antibiotics for over a year, and the farm's somatic cell count is 160,000. "I haven't had a hoof trimmer since I don't know when. When I was pushing the cows, I had heifers going out the door. I had empty stalls in the barn." Now, "my goal is 15-20 dairy replacements to sell in the fall."

Cattle are fed a home grown diet of corn silage, haylage, barley and beans, with free choice mineral, Redmond salt and kelp.\

His calves are "fat, and healthy and kicking around" he says, a change he noticed after switching off (antibiotic containing) conventional milk replacers to feeding whole milk over a year ago. "If I had a baby that was healthy, why would I feed it medication?" He asks. His theory is that when "mothers are toxic, kids are born with toxins" whether they're human, bovine or any other species.

Crops look good as well. He's turned to cultivating and rotary hoeing his crops, twice each, and uses MBA fertilizers with minerals beyond N-P-K, as recommended by his consultant. The goal, says Clem Griesbach, is to "put minerals in the soil so they go up in the plant and they're in the cow."

The red clay soil of the Wavrunek's farm is high in nutrient holding capacity, but poses challenges in dealing with high magnesium. One simple step Joe took was switching from standard barn lime (high in magnesium) to gypsum.

Yields are good, and input expenses dropped without the high cost of chemicals. Joe grew 40 bushel beans this year and an abundant corn crop— 36 acres filling an 18x70 silo and a 10x200 ft bag, despite the summer's dry weather.

He's added small grains into his crop rotation, including winter barley, which he likes for both the

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"I never heard a guy talk that fast, have humor involved, and make that much sense."

"When I was pushing the cows, I had heifers going out the door. I had empty stalls in the barn."

Winter a prime time to plan for Spring

By Bob Yanda
President, Midwestern Bio-Ag of Iowa

Spring may seem like a long ways off, but before you know it, the time will be here to start gearing up for planting. This is the time of year when you start planning for your 2008 crops. I would like to discuss some ideas you should be considering as winter progresses.

The first and maybe the most important winter task is your own education and information gathering. If you are confused about soil tests, soil balance, fertilizer numbers and/or the importance of certain nutrients, this is a good time to do something about updating your knowledge. (Remember, confusion is the first step in the learning process—so it's okay to be confused!)

> To understand the system and put a successful plan together that fits your farm, you need information and ideas.

To clear the confusion, you can start by contacting your MBA consultant and scheduling a time to review your soil tests and ask your questions. Even before you do that, however, you might want to consider some reading. I suggest two books: *The Biological Farmer* by Gary Zimmer and *Agriculture in Transition* by Don Schriefer. Both of these books are easy reading and provide sound, practical information.

You should also consider attending one of MBA's winter educational meetings. Gary does the majority, and I also do a few. The information that Gary and I present is helpful, but sometimes it is really important to attend just for the opportunity to visit with other farmers who have been farming biologically or organically. Most of the farmers are very willing to share their successes, and even talk about a few things that didn't work out so well. What you learn from them may be just as important and helpful to your operation as the information that is presented by the speaker.

> Remember, yield gains and quality feed are the results of a balanced systems approach.

Other issues to be considering during these winter months are crop rotations, cover crops, soil corrections, manure applications, fertilizers, nitrogen, feed quality, tillage, weed control, planters, and seed varieties. Each one of these items is extremely important and the performance of one is directly related to all of the others. Remember, yield gains and quality feed are the results of a balanced systems approach.

To understand the system and put a successful plan together that fits your farm, you need information and ideas.

I hope to see you at one of the winter meetings, to share some ideas, and to share the fun of biological farming.

Good luck with your planning!

....health prompts switch to organic

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feed and the straw.

His soil, says Joe, has "a nice earthy smell" compared to that of his neighbors where the soil has "no smell, not good for cattle or people."

Because of his focus on mineralizing his feeds, Joe wanted to be sure he wasn't losing his own quality home grown feeds, so he bought his own grinder.

In the future, Joe and his wife Jean (who currently works part time at a restaurant as a baker) would like to open an organic restaurant featuring products from their farm. In addition to the dairy operation, they've purchased two beef heifers as a start to a cow-calf operation, and raise all their bull calves. Their vision is to build the restaurant beside the farm, where customers can watch the dairy herd graze, and see for themselves exactly where their food came from.

A few years ago, Joe couldn't imagine going organic, and now, he's a passionate advocate who lives what he believes. He's feeling good, filled with energy, and is optimistic and enthusiastic about changing his farming style.

"It's a good time to be going organic, because the consumer (interest) is so strong," says Joe. "It's amazing the people that are wanting to know about organic."

Still, he believes you don't do organic for the money. "You've got to do it for your health and the health of everybody else."

Managing N inputs to protect OM

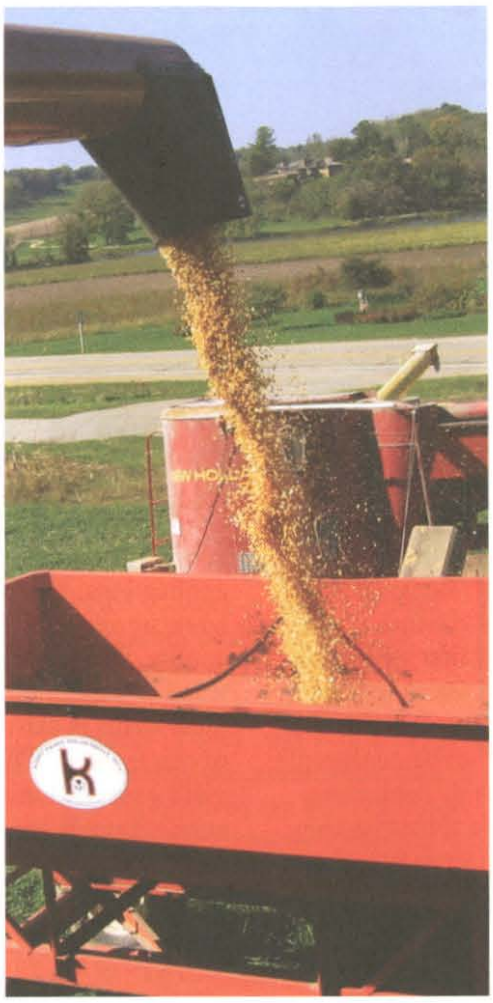
by Leilani Zimmer-Durand
MBA Plant and Soils Research

The biological farmer knows the importance of carefully managing nitrogen inputs. Over-application of nitrogen is recognized as a major problem due N to runoff into waterways and leaching of nitrates into groundwater. A new study highlights another reason not to over-apply nitrogen to crops: loss of soil organic matter[1].

N and Carbon

Since the 1950's, farmers have been told that applications of synthetic nitrogen would help produce both larger yields and build soil organic matter. The theory is that applied N builds organic matter by decreasing the carbon to nitrogen ratio of crop residues, thus speeding breakdown into organic matter.

Here's how it was believed to work: as plants get older they become higher in carbon, while younger plants have less carbon relative to nitrogen. Corn stalks have a C:N ratio of about 60:1, while young clover plants have a C:N ratio of about 13:1. For plant material to be converted into organic matter, it needs to be digested by microorganisms. Microorganisms need N for growth and reproduction, so to digest materials with a high C:N ratio, they take the extra N they need from the surrounding soil. This temporarily lowers soil nitrate and ammonium levels, tying up plant accessible soil nitrogen. Adding synthetic N to crop residues should provide enough nitrogen to the soil microorganisms to prevent N tie up and speed breakdown of residues into organic matter. Over time, this should result in increased organic matter if crop residues are left on the field and preferably shallowly incorporated.



> "Under modern high-yield cropping systems, we are literally burning up our soils through the over-application of nitrogen."

The University of Illinois study, however, shows it hasn't happened that way. The U of I's Morrow Plots, established in 1876 to study crop rotation, have been kept in corn-oats-soybean, corn-oats-hay and continuous corn ever since. Until 1955 the only soil amendments used on them were manure, limestone, rock phosphate or steamed bonemeal.

Beginning in 1955, synthetic N, P, and K were added in varying amounts to sub-plots in each rotation, along with an unfertilized control. Additionally, all crop residues were incorporated into the soil.

By comparing organic carbon levels in 1955 to those in 2005, the researchers found that organic carbon levels decreased in all of the plots, with the greatest loss occurring in the subsoil of plots receiving the highest levels of NPK.

Concluded researcher Richard Mulvaney, "Under modern high-yield cropping systems, we are literally burning up our soils through the over-application of nitrogen[2]."

By applying too much nitrogen, organic matter becomes oxidized, and organic matter carbon is released as CO_2 into the atmosphere.

Anhydrous ammonia is one of the worst culprits, given its high concentration of N (82%). In the anhydrous application zone you get an overdose of nitrogen, and research has shown that after application soil pH goes up substantially[3]. The excess N over-stimulates soil bacteria, causing them to consume too much soil carbon, much of which is lost into the atmosphere as CO^2 .

So what can you do?

This isn't a problem without a good solution. You don't have to sacrifice high corn yields in order to protect soil organic matter. As the University of Illinois researchers concluded, "Fertilization beyond crop N requirements could be reduced substantially by a shift from yield- to soil-based N management, ideally implemented on a site-specific basis[1]."

So, how do you shift to soil-based N management? As a biological farmer, chances are you don't fol-

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...protecting Organic Matter

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low the standard yield-based recommendation of 1 lb/acre of applied N per bushel of corn. You know that there's more to farming than just 'inputs-exports.' There's a whole system in place, and understanding the ability of your soils to produce plant-available nitrogen is part of that system.

All soils have the ability to mineralize nitrogen, or convert nitrogen into a plant-available form. What complicates this is that soils mineralize N at different rates. Soil tests are now available that estimate soil mineralization potential, most notably the Illinois Soil Nitrogen Test. But it's also possible to optimize N inputs through management practices, and by doing your own on-farm research.

Cover cropping is one way of reducing synthetic N inputs. Growing legume cover crops increases atmospheric N fixation, essentially harvesting N for free. You could also plant rye in the fall or oats in early spring and turn the crop down while the plants are still young. This way you're incorporating into the soil a young plant with a low C:N ratio, feeding soil bacteria. The bacteria in turn produce ammonium, another source of free nitrogen.

Nitrogen moves quickly through soils, so unlike other minerals you can't build up a reserve of N by applying more. It's best to band nitrogen right in the row to both decrease the amount of N applied and maximize its efficiency. By applying the nitrogen right where it's needed, a lot less is wasted.

Timing of nitrogen is critical. Putting the nitrogen on later when the growing corn plants are able to absorb the carbon dioxide improves corn yield and reduces N loss.

But how can you be sure you're optimizing your N inputs? The best way to answer this question is to do some research on your own farm. Take a few acres, or part of a field, and apply 15, 20 or 25 percent less nitrogen. Then, compare yields— if they stay high on the reduced N plots, you know you can cut back across the whole field without sacrificing yield.

All soils have the ability to mineralize nitrogen, or convert nitrogen into a plant-available form.

Many biological farmers add carbon, in the form of molasses or plant charcoal, to nitrogen fertilizers. Studies have shown natural carbon sources absorb nitrogen, reducing N loss through volatilization and leaching.

Applying nitrogen inhibitors is another way of reducing N loss, but there are trade-offs with this method. Most nitrogen inhibitors work by suppressing bacterial activity, which obviously isn't a good idea for biological farmers.

Yet another way to reduce N inputs is to use a slow release nitrogen product. This spring, Midwestern Bio-Ag is offering ESN, a coated nitrogen product that releases N at a controlled rate across the growing season. Ask your consultant for more details about ESN.

Using management practices utilized by organic farmers is another way you can reduce synthetic N inputs on your farm. Organic farming is a system proven to increase soil organic matter. It is at the opposite end of the spectrum from applying yield-based synthetic N inputs. Instead, organic farmers rely on legumes, cover crops and manure for nitrogen, as synthetic N sources cannot be used under the USDA organic rules.

Two recent studies show farming organically increases soil organic matter over time. A 23-year study at the Rodale Institute showed organic grain production systems raised soil carbon 15 to 28%, while conventional systems showed no significant increases[4]. A USDA study comparing organic farming to conventional no-till found that the organic system built up organic matter better than no-till, and yielded 18% more corn[5].

In the end, the best measure of healthy balanced soils is being able to apply a low rate of nitrogen while growing a great crop that shows no nitrogen deficiencies.

Citations:

1. Khan, S.A., R.L. Mulvaney, T.R. Ellsworth and C.W. Boast. 2007. The myth of nitrogen fertilization for soil carbon sequestration. Journal of Environmental Quality 36:1821-1832.

2. Richard Mulvaney, as quoted in 'University of Illinois corn plot shows fertilizer myth' in *The Country Today*, Nov 14, 2007.

3. Bouman, O.T., Curtin, D., Campbell, C.A., Biederbeck, V.O., Ukrainetz, H. 1995. Soil acidification from long-term use of anhydrous ammonia and urea. Soil Science Society of America Journal 59:1488-1494.

4. Hepperly, P. 2003. Organic farming sequesters atmospheric carbon and nutrients in soils. www.newfarm.org

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Why plant corn in 38" rows in May?

By Gary Zimmer

Our summer intern, fresh from her third year in a local ag school, asked with surprise, 'Why would you use 38 inch rows when you could increase your yield if you went to 22 inch rows? And isn't it late to be planting corn now? Why don't you plant in April?'

The Conventional System

Here is her take on what she learned about planting corn while growing up on a conventional dairy farm and attending ag school :

The push in corn production is increased plant populations, narrower rows, and earlier planting times. The idea is to get the corn in as soon as possible with the fewest trips across the field.

As soon as the ground can be worked, get in the field, hit it with the tillage tool of choice (or no till) and then plant.

Varieties are triple stacked with a range of insecticides and fungicides, driving seed costs up to $200 a bag and more. With all of the genetic modifications done to seed, it can lay dormant in the ground for a week or more without the fear of it rotting.

Management is not following a formula, it's finding what's best for your unique situation.

Push the limits on plant populations, row width, and time of planting. As a rule of thumb the universities figure you can average about a bushel more per acre for each 1" narrowed. Thus, in theory, going from 38" rows to 18" rows you should gain 20 bushels per acre.

Population counts can go upwards of 36,000 for some fields depending on row width and soil type.

Planting in April is the goal of most producers, the sooner the better as long as the soil is warmed up. They are hoping to gain an advantage in yield by obtaining more GDD's (Growing Degree Days).

The conventional farmer plays a numbers game when figuring his nitrogen needs.

He starts by giving N credits for those previous crops that are allowed credits. Let's say it's a corn-beans rotation on medium textured soil. His yield goal on next year's corn is 180 bushels per acre and the rule of thumb is that 1 pound of N is needed per bushel grown. He gets 40 N credits for last year's soybeans, or 180 minus 40 equals 140. Dairy manure was applied at 6 tons/acre solid and provides 18 N credits (6 ton times 3 N credits/ton) leaving 140 minus 18 or122 N units short. Conventional farmers will have to buy these remaining credits in commercial fertilizer.

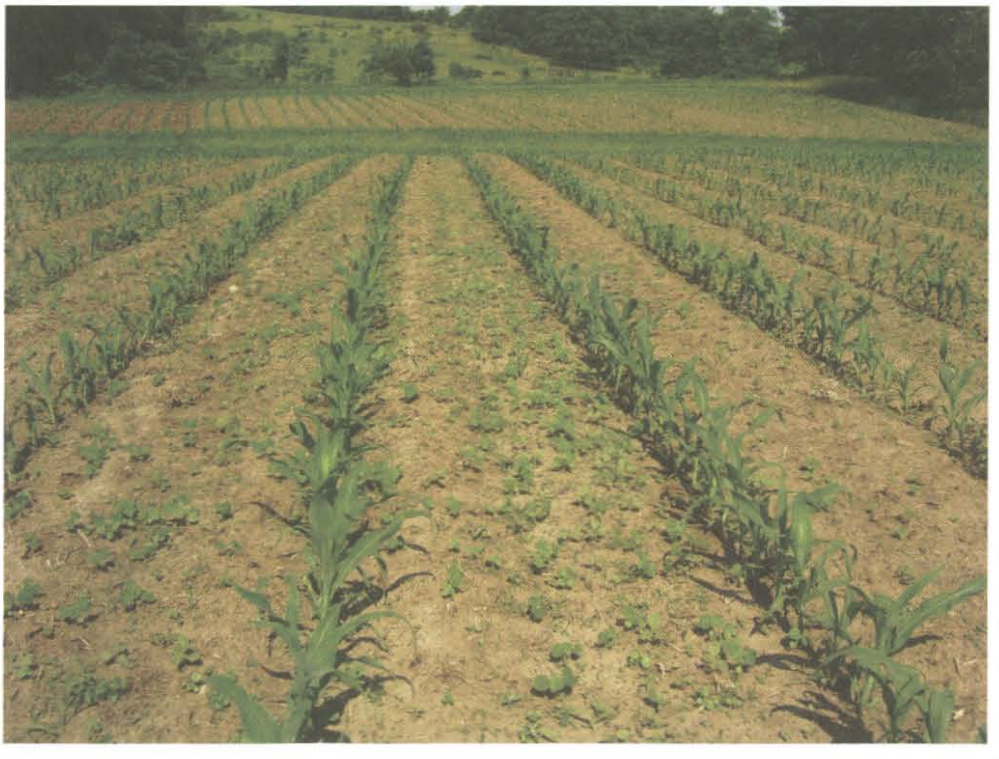
A starter such as liquid 28 might be used for as much as one-third of the total needed. The rest needs to be either top or side dressed, or knifed in.

The Biological System

I'm sure our intern assumed I was either a backward old-style farmer, or that my corn-growing system was due to some weird rules of organic farming.

Management is not following a formula, it's finding what's best for your unique situation. Green

(Continued on page 11)



Corn waiting to be cultivated for the first time at Otter Creek Organic Farms, photo taken June 2007

....why plant corn in 38" rows in May

(Continued from page 10)

manure crops, more surface residues, easier field travel (due to the wider rows), lower input costs, crop health and much more need to be considered on each farm.

There are tradeoffs in every farming decision. Yes, planting a little later may in some years cost you a few bushels on yield. On the other hand, a better stand, early vigorous growth, larger root systems, better soil conditions, and less field compaction are the benefits.

For planting, the soil temperature has to be at a high enough level so that the corn comes up and grows rapidly, getting ahead of the weeds.

Also, because seed treatments aren't available organically, the seed can't lie in the ground waiting for the warm up. Not only will this let weeds get a head start (many like the cold soils), but seed damage and poor uneven stands are possible.

And for us organic guys, weed control is easier with wide rows. It's easier to cultivate 38" inch rows. When you're not using herbicides you need to be able to get into the field to control weeds.

Biological farming is a system. The interesting thing is, at Otter Creek Organic Farm, we can grow over 200 bushel corn on 38" rows planted in the middle of May.

For most conventional farmers, 30" rows do make more sense. You are gathering the sun's energy and the sooner you can canopy, the more opportunity you have. Also, corn plants closer than 5 inches apart may suffer some negative effects from crowding.

So what is our potential? Three hundred to 350 bushel per acre

What is our potential?
What are the limiting factors?
What would *you* do?

conventional corn maybe should be our norm. What are the limiting factors? I'm convinced genetics isn't what's keeping our yields where they are.

So let's say it's possible to do the 300 bushel/acre average. What would your approach be? Would you put on more conventional N-P-K fertilizers? Plant more plants, earlier, thicker, closer?

This topic will be further addressed at my winter meetings and continued in the next issue of the *Bio-News* newsletter coming out in March.

Bring me your ideas at the winter meetings!

Wide row corn, rows just cultivated.

....rBST/BGH/ Transition

(Continued from page 12)

offers the potential for 4-6 additional pounds of milk per cow along with higher levels of available energy for reproduction, health, etc. We encourage you to contact your Bio-Ag consultant today to learn more about this exciting new product.

The adoption of new technology is never easy and as we will learn over the coming months, the transition away from it is just as challenging. Focusing on reproduction and nutrition will allow producers to move away from rBGH/BST and better meet current market demands for dairy products. Midwestern Bio-Ag offers producers exceptional products and services to make their operation more profitable and successful.

Transitioning off rBGH/BST

By Paul Deckard and
Jon Woolever
MBA Staff Dairy Specialists

Changing market demands and public awareness have caused thousands of dairy producers, nutritionists, and consultants to ask, 'Can we manage milk production without rBGH/BST?'

The staff at Midwestern Bio-Ag has a definite answer: *Yes, you can, and we can help!*

Twelve years ago rBGH/BST was offered to farmers, changing the way many dairies managed their cows. Considered the latest in biotechnology, it is a synthetic copy of the cow's natural hormone which increased milk production by an average of 10 lbs per cow per day. This was a significant return on investment and many producers adopted this new technology. Additionally, it was marketed as a tool to manage hard to breed cows resulting in even wider acceptance.

Today things have changed and producers again have to make an important decision regarding rBGH/BST. The consumer, king of the food chain, has spoken and those in the production sector are being forced to listen. Today's consumers are demanding dairy products made from cows not supplemented with rBGH/BST and retailers and creameries are quickly following suit. As farmers are forced to abandon this management tool, a new strategy must be developed to maintain production and profitability.

Midwestern Bio-Ag's Animal Nutrition Division has identified 5 key areas that those producers who have used the hormone need to focus on to make the transition away from rBGH/BST as smooth and profitable as possible.

They are:

1. Reproduction must be priority number one
2. Maximize cow health
3. Feed a balanced ration
4. Transition away from rBGH slowly
5. Look at natural management tools to increase milk production

1) Reproductive performance was the biggest victim when farms began using rBGH/BST because the emphasis was placed on high production with less regard to longevity. Because it was easy and profitable to milk cows 300, 400, even 700 days, producers did not work hard to maintain low DIM (days in milk). Without rBGH/BST, producers must strive to have cows bred at 45-60 days and keep their farm's average. DIM between 150 and 180.

2) Having a strong immune system, addressing mold and yeast pressure, and promoting rumen health are keys to a profitable dairy farm. Using the Keystone Program, MBA's premier nutritional package, farmers are able to keep their cows on track for reproductive performance and milk production.

3) Bio-Ag consultants and staff are trained in providing balanced rations for top production while promoting longevity, reproduction, and cow health. Bio-Ag works diligently to manage nutritional factors such as soluble protein, starch, forage NDF, protein efficiency, and mineral utilization.

4) Producers who choose to stop using rBGH/BST must realize they need to make the transition slowly and with care. An abrupt stop will be enormously stressful to cattle and create a difficult environment to manage successfully. MBA encourages farmers to stop putting new cows on rBGH/BST while letting older animals finish out their current cycle to avoid any possible challenges.

5) There are many safe, natural, and effective management tools available for increasing performance in your dairy herd.

Midwestern Bio-Ag is excited to offer the latest in direct fed microbials (DFMs). Dairy ProP169, developed by Bio-Vet,

(Continued on page 11)

Reproduction will be a major challenge for many herds transitioning off of rBGH/BST

Little Things that Make a BIG Difference

By Dan Davidson
Staff consultant

Years ago I attended a motivational speech by Zig Ziegler. One of the things I remember was his comment that the difference between finishing the race in first place or second place was just little things. MBA Consultant Bob Schmidtknecht often says that "little things don't mean a lot, they mean everything." The difference between a good manager and a great manager is seen in the attention given to the little things.

It seems to me that those who take care of the details are those who have their heart in what they are doing. Passion provides the motivation to follow through and take care of the little things. If the passion is not there, it will be really difficult to be successful. It is easy for all of us to get discouraged at times and wish for other things, but since we know that the grass always look greener on the other side of the fence, we may just need to have a little talk with 'self' to regain our focus.

Enough philosophy, let's get practical. I asked several Midwestern Bio-Ag consultants and staff to share their observations of what are often considered "little things" that are in reality very important. Most of these guys are also farmers, so they speak from personal experience as well as having visited, advised and worked with many successful farms over the years.

Paul Deckard, our dairy specialist, recommends switching water lines from metal to plastic. What's the difference? Stray voltage can prevent cows from drinking enough.

Planting cover crops in the fall is a practice consultant Rick Knopp is seeing many more farmers implement. Using a fertilizer spreader to apply a couple bushels of winter rye can be an efficient way to get the job done.

Bob Schmidtknecht's recommendations begin with cow comfort. Adequate bedding is important. If we would not be comfortable spending the night in the calf pens, we should not expect calves to, either!

On soils, says Gary Zimmer, we need to pay attention to a tight rotation, have lots of plant diversity, be constantly growing green plants to feed the soil biology, and provide balanced fertility with an emphasis on soluble calcium.

Consultant and grazier Steve Hooley, Indiana, reminds us that our attitude can have a big impact on our work. Our relationships to our family and our neighbors are also important. As the family grows, the needs will change, and we need to prepare for those changes. Planning also is needed in regards to feed inventories and markets.

Look for more little tips that can make a big difference in the spring issue of the *BioNews*.

TRADING POST

FOR SALE

Organic certified bull calves, Jersey & Jersey cross. Will be born March, April, and May '08. All calves are raised by their mom. No animal in my herd has ever tested positive for Yohne's. I have tested every eligible animal the past three years. Bob Molini, Wauzeka, WI 608-875-5810

Organic corn & oats and large square bales clover hay 815-449-2668

Certified organic alfalfa hay. Wet wrapped, 49 bales, 5th cutting, very good quality. 574-825-5260

1st, 2nd, 3rd crop organic hay or transitional hay. Large round bales, grown on Bio-Ag program 319-667-2350

Certified organic dairy cows. Pick 15 out of 50 head, 608-485-0396 or 608-537-2963

WANTED

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

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

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

Ads run one-time free in the Bio-News ...
deadline for next issue: March 5
Call Mary at 1-800-327-6012

Midwestern Bio-Ag Winter 2008 speaking schedule

Join us at any one of the following educational meetings provided by Midwestern Bio-Ag and your local Bio-Ag consultant. Gary Zimmer, Midwestern Bio-Ag president, farmer, educator and author will be the speaker. **Meetings start at 10:30 a.m. and conclude by 3 p.m.** Lunch is included. (There are several exceptions to speaker, starting time, and lunch/fee arrangements. Please check the list. Exceptions to this paragraph are noted in the listing below.) We hope to see you there!

Other MBA staff will also be presenting small group meetings throughout the Midwest over the next several months. Your local consultant will notify you of times and locations for any meetings in your area.

Please join us to learn more about biological farming!

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

1-800-327-6012 or www.midwesternbioag.com for updates on meetings

DATE	LOCATION	SPONSOR(S)	PHONE
Monday, Jan. 7	Ayton, Ontario, Canada Centennial Hall, 10 a.m.—3 p.m. — Lunch $$	Al Aime Bruce Newman	519-665-7820
Monday, Jan. 7	Grey Bruce Farmers Week Ecological Evening 7:45 p.m. (Organic Dairying) Fee: $10	Grey County Agricultural Services	519-986-3756
Tuesday, Jan. 8	Grey Bruce Farmers Week– Crops Day 11 a.m. (Cash Crops & Bio Farming) Fee: $20	Grey County Agricultural Services	519-986-3756
Wed. Jan. 9	St. Thomas, Ontario, Canada; Fellowship Christian Reformed Church $$	Ron Scheele Paul Watson	519-762-5358 519-627-0566
Thursday, Jan. 10	West Branch, MI Quality Inn — 10 A.M.	Jonathan Graham	877-250-6679
Friday, Jan. 11	Bad Axe, MI Huron County Expo Center — 10 A.M.	Michigan Consultants	888-825-9373
Monday, Jan. 14	Williamsfield, OH Williamsfield Community Center — 10 A.M.	John Kempf, Andy Shetler & Eugene Derstine	888-825-9373
Tuesday, Jan. 15	Osgood, OH; doors open 9 a.m., 10 a.m. start American Legion Hall $15 lunch;	Tim Wightman clearvu@cheqnet.net	765-277-3352
Friday Jan. 18	Champaign-Urbana, IL; Univ. of Illinois Illini Union 1:30 p.m. and 3 p.m.; Conference Fee	Midwest Organic Production & Marketing	877-455-2687 to register by phone
Monday, Jan. 21	Waupun, WI; Tony's Pizza	Roger Drews	920-324-9306
Tuesday, Jan. 22	Colby, WI Colby Lions Shelter	Rick Knopp	800-436-1459 715-560-6355
Tuesday, Jan. 22	Belgrade, MN VFW Post, 10 a.m. to 2 p.m. *(Speaker Bob Yanda)*	Roman Walz	320-599-4664
Wednesday, Jan. 23	Plover, WI: Elizabeth Inn Hwy I-39 at Hwy 54	Mark Klish	715-366-7671

Thursday, Jan. 24	Black Creek, WI Romy's, W5670 County Road A,	Clem Griesbach	920-739-7584
Friday, Jan. 25	Rollingstone, Minn. Ginny's Supper Club	MBA of Minn: Josh Elsing, Mike Lovlien, Travis Mathison, Pat Troendle	866-485-4300 800-626-8562
Monday, Jan. 28	Platteville Golf & Country Club, 6729 North Water-Hwy 80-N	Justin Spensley	608-732-4405
Tuesday, Jan. 29	Tama, IA Meskwaki Casino Bingo Hotel	MBA of Iowa	888-465-3503
Wednesday, Jan. 30	Kalona, IA; 10 a.m.-2:30 p.m. Chamber of Commerce Building	Firman Hershberger	319-430-0383
Thursday, Jan. 31	Memphis, MO; 10 a.m.-2:30 p.m. Fire Hall	Firman Hershberger	319-430-0383
Friday Feb. 1	Wagon Wheel, Monticello	MBA of Iowa	888-465-3503
Monday, Feb. 4	Spring Green, WI; American Legion Bldg., 137 N. Washington	Tim Williams Jackie Hasburgh	608-225-4518
Tuesday, Feb. 5	Fennimore, WI; St. Mary's Church Hall	Scott Wood Bob Johnson	608-822-4923 608-375-2595
Wednesday, Feb. 6	New Glarus, WI; at the New Glarus Hotel	Duane Siegenthaler	800-228-2189
Thursday, Feb. 7	Menomonie, WI; Holiday Inn Conference Center, just south of I-94 on Hwy 25	Dan Jacobson Dan Davidson	715-271-5526
Thursday, Feb. 7	Lena, IL Community Building *(Speaker Bob Yanda)*	Duane Siegenthaler	800-228-2189
Friday, Feb. 8	Between Durand and Mondovi, WI Club 10	Joe Danzinger Bob Schmidtknecht	715-495-5504 608-323-2069
Friday, Feb. 8	Hillsdale, IL; Mama J's Restaurant *(Speaker Bob Yanda)*	Bob DePauw	309-523-3921
Mon. & Tues. Feb. 11-12	Quarryville, Fairgrounds SE Penn. Graziers Conference	Roman Stoltzfoos	717-278-1070 610-593-2415
Wed-Thurs. Feb. 13-14	Bangor, ME; Bangor Motor Inn Heart of Maine Conference	Heart of Maine	207-947-6622 ext 142
Tuesday, Feb. 19	Bird-in-Hand Restaurant Lancaster Organic Farmer's Coop	Roman Stoltzfoos	717-278-1070 610-593-2415
Thurs-Sat Feb. 21-23	LaCrosse, WI; The LaCrosse Center Upper Midwest Organic Conference	MOSES Upper Midwest Organic Conference	715-772-6819
Tues-Thurs. Feb. 26-28	Pocatello, Idaho; FEE Holiday Inn, 1399 Bench Rd.	Soils Alive Conference	208-547-2488 208-604-1488