Midwest Bio-Systems, Inc.

July 2007

Composting Perspective

Technology · Technique · Helpful Tips

Special Mineral-Compost Blends Bring Special Benefits To Missouri Businessman

When Roger Kropf bought a farm near Hughesville, Missouri, in 1996, he decided he needed some extra income. He had been in the "clean-out business," he said, prior to that, meaning that he cleaned out chicken houses after each flock of chickens went out. "I was drawn to the organic side of farming," he said, "because I saw that it was a better way."

In 1997, he attended a Midwest Bio-Systems Advanced Composting Systems Class in Princeton, Illinois. At Edwin Blosser's urging, Roger arrived early and helped to prepare Midwest Bio's compost demonstration site for the class. That experience affected his approach to farming thereafter.

As Roger observed farming practices in his area of Missouri, he quickly found that too much manure spread on tillable land resulted in unbalanced soils as well as an abundance of weeds. The overabundance of nitrogen, phosphorous, and potassium in the manure made unhealthy crops while the weeds flourished. He also found that the litter from the poultry business harbored an overabundance of black beetles. These two problems, and one other - the odor from poultry operations - were opportunities in disguise for Roger's desire for extra income.

He began applying his knowledge of composting to the litter from his turkey barns. He mixed a variety of ingredients to start his various compost piles – pasture grasses, corn and other crop residues, woody materials, fairground bedding, straw, hay, small amounts of his poultry waste and horse manure, plus tree trimmings, clay, a small amount of finished compost to accelerate the breakdown process, "and something green, like alfalfa and weeds, which add a cleansing function to the compost," Roger said. *(See* Mineral, *page 2)*

Inside this issue:

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Editorial Corner

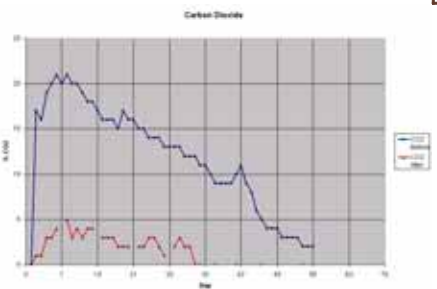

Fig.1

Good Morning! I hope your compost windrows are doing well this nice summer morning.

Are we taking advantage of the tools that are available to help us in our compost operation? One way to determine whether or not we have the best recipe, is to make sure our compost monitoring charts (see Fig.1) show the proper readings graphed of the daily recorded temperature, CO2, and moisture readings. Also a note on weather, and gallons of water added are valuable.

Here are a few tips on the instruments: Avoid storing electronic thermometer in area of extreme temperatures (extremely hot or cold). The hand-held electronic "box" has a built in sensor, separate from the probe, which it uses to establish a baseline. Storing the "box" in extreme temperatures can affect the accuracy of the thermometer. Another real issue is cord failure, especially where the cord joins the probe. We have found that the cord kinks over where the cord joins the 3' probe. For long term usage of the temperature probe we need to take care that we do not pull, bend, or kink the cord where it joins the probe.

Proper use of the CO2 kit – 1. Check probe for obstructions. 2. Check canister. Red liquid should be level with zero on the read-out scale. 3. Insert probe into center of windrow, with tip approximate six inches off ground. 4. End of hose with round tip (looks like a hearing-aid) should be held on top of "button" on canister, depressing valve all the way, being careful to keep canister upright. 5. Squeeze hand pump 18 times while depressing valve. 6. Remove hose band tip from top of canister, releasing valve. 7. Invert canister to expose gases (which were inhaled into top of canister by pumping) to the red liquid. Keep inverted until bubbling ceases. 8. Turn canister upright. Hold until bubbling ceases again. Level of CO2 should read on scale. (e.g. #16 equals 16% CO2 present in windrow.)

Use of the CO2 kit is simple, but sometimes we take the steps for granted, not realizing they are unfamiliar to someone else.

Notice the new section on page 6. This is a reprint article from a newspaper or magazine that featured MBS, or one of our customers. Please notify us if your operation was featured in a publication. We would like to include one article about a customer in each issue. We need your help!

Ernest B Iosser, Vice President

(Mineral, *continued from page 1*)

To enhance that finished compost, he also began to add special mineral blends to his compost, the recipes for which varied according to the proposed end uses of the compost.

While he won't divulge his recipes for his proprietary mineral blends, the end uses thus far include broadcasting one mineral-blended compost on those previously over-fertilized croplands to bring the soils there back to health, and a second one for greatly reducing the ammonia-caused odors from the waste in his turkey barns while also drying the bedding on the floors of the barns.

Is the odor difference noticeable? Since Roger started applying his secret recipes, he chuckles when he says, "My neighbors ask me what I'm doing - why it doesn't smell like it used to." That mineral-blended compost also had a side benefit of reducing the black beetle population so common to poultry operations.

Roger now markets his special blends to area customers – fulfilling that initial purpose he started with over a decade ago.

MBS Adds Japanese Distributor

Midwest Bio-Systems (MBS) recently announced a distribution relationship with Japan Livestock Trading (JLT) of Obihiro, Hokkaido, Japan. This combination delivers Midwest's Advanced Composting System, including the industry's leading composting equipment, to growers throughout Japan.

Tadanaga Komori, JLT's president, had this to say: "Doing business in the dairy industry in Japan, I became aware of the increasing importance of processing manure from livestock effectively and efficiently. Fortunately, I had a chance to visit the MBS booth at the World Dairy Expo in 2006. The company's Aeromaster compost turners and Advanced Composting System seemed to be the technology I was looking for. After I saw a demonstration of the high quality performance of the compost turners, I proposed to market the products in Japan, and we completed a dealer agreement. We have imported three turners since then and our staff has received technical and sales training in the USA and Japan. We appreciate the support MBS has been providing for us. We are very excited about the commercial launch of the product in Japan."

Cary Richardson and Mark Troyer of MBS traveled to Japan in March of this year to set up JLT's first shipment of equipment. Akira Nambu and Daisuke Iwaki of JLT attended one of MBS's Advanced Composting System workshops in March to get up to speed on the system that Midwest has developed and start to apply that to the Japanese market.

Edwin Blosser, owner and president of Midwest Bio-Systems, added this about JLT and their staff: "All of our dealings with Mr. Komori and his team have been very productive and they certainly are interested in raising their applications knowledge to a higher level which will help them achieve a greater degree of success!"

Japan Livestock Trading Corporation has been an exclusive Japanese agent of Wisconsin-based ABS Global for more than 20 years. JLT imports and distributes the high-quality ABS bovine frozen semen and has 40% share of the Japanese market for imported semen. JLT holds a copyright of the U.S. Hoards Dairyman magazine, the most authoritative dairy journal in the USA, and has been translating and issuing the magazine in Japan for the past 18 years, informing Japanese readers of the latest US dairy technologies.

PT-170 Aeromaster Turner operation in Hokkaido, Japan

ACS High Impact Compost Workshop

A 3-day, Hands-On Workshop

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- Commercial Composters
- Dairy Farmers
- Poultry Operations

Advance Registration Is Advised

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Compost's **HIGH** Impact on Soil Fertility

Production of **HIGH** Quality, **Humified** Compost Impact on Soil Fertility

How to Sell the Value of **HIGH** Quality, **Humified** Compost

Comprehensive Training in Compost Production and Marketing

ACS Compost Workshops provide training in the best methods for converting agricultural waste and organic matter into highly effective organic fertilizer. ACS Compost Workshops are located near compost production facilities that practice the Advanced Composting System principles. During visits to the compost site we will demonstrate what was taught in the classroom in a real work environment. Our updated curriculum expands the hands-on time at the compost site to increase the confidence level of participants so that they can go home and produce highly effective organic compost. Compost site demonstrations include windrow building, compost turning, watering and microbial inoculation techniques, and the use of compost process monitoring instruments. The sessions also include production troubleshooting as well as the tips on increasing compost quality without increasing the cost. It is the combination of classroom instruction and compost site work that make the ACS Compost Workshops an effective way for you to get started or improve your existing operations.

The workshop was very informative. The team was interactive and the participants interacted. It was good. The demonstration at the compost site provided invaluable training.

Marty Hemminger
Sandusky, OH

The MBS Workshop covered a wide range of composting topics from the nuts and bolts of how to produce high quality compost to the microbiology that drives the true value of humified compost. The workshop leaders taught with a true passion and their years of experience in the industry were reflected in their teaching. My expectations were exceeded and I could not have been more pleased.

Nathan Kemper, Research Program Associate,
Agricultural Economics and Agribusiness, University of Arkansas, Fayetteville

Midwest Bio-Systems Calendar

ACS Compost Workshops

September 18-20, 2007 - Tampico Community Hall, ***Tampico, Illinois***
Compost site visit - ***Rare Earth Diversified Services***

November 2007 **- West Coast (TBA)**

Workshop Fee: $695 ($620 for additional attendees from same company)
$50 Discount if payment is received by **Sept. 7** for Tampico, IL

Seating is Limited! Register Today!

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Look for us at these upcoming Trade Shows!!

August 15-16, 2007 - ***WHEN Recycling Expo*** **-** York Fairgrounds, ***York, Pennsylvania***

October 2-6, 2007 - ***World Dairy Expo*** **-** Alliant Energy Center of Dane County, ***Madison, Wisconsin***

October 16-18, 2007 - ***Wastecon*** **-** Reno Sparks Convention Center, ***Reno, Nevada***

MBS and Customers In The News

Article featured in: **Sedalia Democrat, Sedalia, Missouri**
Date Published: **June 9, 2007**
Customer Featured: **Roger Kropf, Kropf Ag Services - Hughesville, Missouri**

Hughesville Farmer Gets The Most Of His Compost

By Dennis Rich

Hughesville farmer Roger Kropf filled the bucket of his front-end loader with a mixture of manure, straw, and vegetable litter and dispersed it over the football fieldlong mounds of compost. His son, Morris, followed along behind him, dropping the blade of the compost turner, a large auger mounted to the side of a tractor that churns the material, allowing oxygen to further break down the material into its final form: Humus.

Humus is the final product of the composting process where the manure, crop litter, vegetable scraps and other organic wastes have completely broken down, leaving a nutrient rich mixture that increases the health of the soil and aides in water retention.

Roger, who owns 65 acres of farm land in Hughesville, and his cousin, Galen, of Berryville, Ark., formed Microleverage, an organic compost production company, in 2005. The pair began composting to handle manure and plant wastes from their own operations, then organized the business to sell the product in 1,000-pound and 2,000-pound bags to farms, golf courses and other large operations.

In May, Microleverage began selling their humified compost in 30 pound bags, hoping to attract homeowners and gardening enthusiasts. The product is available for $30 for 30 pounds at nearly a dozen retail outlets, including Hostetler Feeds, 30017 Overstreet Road.

Clayton Knox, manager of Hostetler's Sedalia location, said that the Microleverage compost is distributed in all three of the business's locations. He said initial interest in the product had been high, and "there's really nothing else like it out there."

The compost has been selling well, and Knox said, "We have already started to see some repeat customers."

The product is popular all over, Galen said.

"I produced about 750 tons of compost for the market for 2007, and I only have about 150 tons left. We never have a problem getting rid of it," Galen said by telephone. "In fact, we usually sell out."

Both men celebrated the compost as an organic alternative to chemical fertilizers. "It gives me a good feeling knowing I am making something that helps farmers, and the environment," Galen said.

Like Galen, Roger raises turkeys on his land, but said he plans to start only one more generation. He said he hopes to begin an organic chicken operation to replace it.

"I want everything to be organic on this farm," Roger said.

The bulk of the product is generated by the Kropfs and four other producers, with most of the compost going to large agricultural applications.

During a break in the daily turning schedule he keeps, Roger said it takes from eight to 10 weeks for the material to break down and be ready for market. He said the material is turned once a day for the first couple of weeks, then less as the material reaches maturation. The temperature, carbon dioxide levels, and moisture are monitored carefully, "to help synchronize the process and make sure everything breaks down at the same time. Roger said he prefers to mix "green cuts" of alfalfa or fescue with the material, adding nutrients to the mix. After the composting is completed, a formula of microbes and bacteria is added to help enrich soil and aid the transfer of nutrients to plant root systems.

This mixture was developed by a second cousin to the Kropfs, Edwin Blosser, of Tampico, Ill. Galen said Blosser traveled to Austria to learn composting techniques. Blosser returned and formed Illinois-based Midwest Bio-Systems. The company produces a range of products, including heavy machinery such as the compost turner, to support commercial composting operations. Blosser is also a partner in Microleverage, Galen said.

In addition to supplying the landscape market with humus, the Kropfs are also packaging the compost in 30-pound bags for the backyard gardener.

Everyone Wins

One of Midwest Bio-Systems' customers recently called us about his 12 year old Aeromaster PT-120 compost turner. He wondered if it might be time to move up to the 14' Aeromaster PT-170, but wasn't sure about making that commitment just yet. The old turner was working fine, but concerns about time and wear were beginning to creep in.

During this time of questioning – "Should I or shouldn't I?" – the customer continued using the PT-120 until one day he broke the drum, some tines, a coupler chain, and some other key parts. Midwest Bio-Systems over-nighted all of the replacement parts to him, and he was quickly back in business with the PT-120. However, that incident also provided the impetus for the customer to upgrade to the larger PT-170. He ordered the PT-170 and asked Midwest Bio-Systems to help find a new home for the recently refurbished PT-120 he had been using for so long.

Midwest Bio-Systems was able to find that new home quite soon about a thousand miles away, with a company that wanted a low-priced rental unit. That company tells us that the rental has worked out well for them, too, and in fact they plan to upgrade to a new unit within a year.

What's the moral of this short story? Equipment that lasts and a customer-friendly staff create a win-win situation for all concerned.

Helpful Tips

The Importance of Using Clay

Here's 5 important reasons to use clay in your composting operation:

- **Moisture management**
- **Odor control**
- **Capture more nutrients**
- **Reduce shrinkage**
- **Foundation for humus**

Note: Make sure your clay has no more than 5% sand in it.

Clay is typically found under the top-soil layer. In some locations, the top-soil contains sufficient clay that it can be used as a clay source.

For clay to be effective in compost production it must be a friable fine powder in order to be added to the windrow and mixed evenly throughout.

Composting Prices

In this issue we will begin illustrating the potential value of Humified Compost in a very direct way - by reporting actual prices realized by actual composters from all over. We will, of course, preserve the privacy of those reporting by disclosing prices by geographic region only.

Upper Midwest - $12.00 per ton

Northwest - $36.00 per ton

Mid-South - $199.00 per ton*

Southeast - $26.00 per ton

If you would be willing to contribute your information to the community in this way, please head to http://www.midwestbiosystems.com/pricereport.html and complete the form you will find there. We'll automatically enter you in a drawing for a **free Midwest Bio-Systems T-shirt!**

***This is an actual price for High Quality Humified Compost made with the ACS composting system.**

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We are on the Web!
www.MidwestBioSystems.com

Announcing!

Midwest Bio-Systems (MBS) has introduced the Clean-Sweep tine design, further enhancing the results generated by the company's Advanced Composting System. Due to a near-concentric edge, the tines rotate the windrows more completely, resulting in more complete gas exchange and more thorough rotation of the material between "hot" and "dormant" areas of the pile. An additional benefit is lower maintenance and longer life of the tine due to reduced, more even wear.

The improved material handling results in higher, more consistent fertility content and lower toxicity in the resulting compost.

Edwin Blosser, owner and president of Midwest Bio-Systems, was enthusiastic about the breakthrough: "Anytime we can do something to benefit the soil and enhance plant growth and health, we feel like we've accomplished something, and this is a perfect example of how attention to detail can make that kind of difference."

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