



# COMPOSTING PERSPECTIVES

TECHNOLOGY · TECHNIQUES · HELPFUL TIPS

JANUARY 2008

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## Top of the Heap

### *Turning Waste Into Gold In the Composting Business*

There are a lot of products called “compost” on the market, but there is a big difference in the price they bring. There are composters, mostly at municipalities and large farms, who are simply neutralizing a waste problem. They mix some nitrogen and carbon into a pile and have a rough product that is technically compost, but the value of their compost is little more than straight manure. They give their compost away or sell it “dirt cheap.”

Then there are the high-value composters who carefully cultivate their compost, putting it into windrows, covering it to create the proper humidity, and spraying it with inoculants that generate a highly complex and valuable soil ecosystem. These composters are able to do more than just neutralize waste—they sell dirt for gold and people are willing to pay the gold price because it is that valuable. High value composters can get more than \$2,000 a ton for their product while others with just a little less equipment and know-how are nearly giving it away.

The difference between the gold composter and the waste composter is based on one thing — building value into the soil. The principles, practices, and habits that make the difference between the two are what we will explore here.

Before we get into the habits of successful composters we should take a look at the levels of building value into the soil, going from manure to gold.

Let’s begin with the lowest level of the “pyramid” (pictured on the next page) — straight manure. It has the lowest production cost, but it only sells for around 15 dollars a ton. That’s not going to pay off very well. The best you could do would be to add it to your own crops, but even then you’re not *(continued on page 2)*

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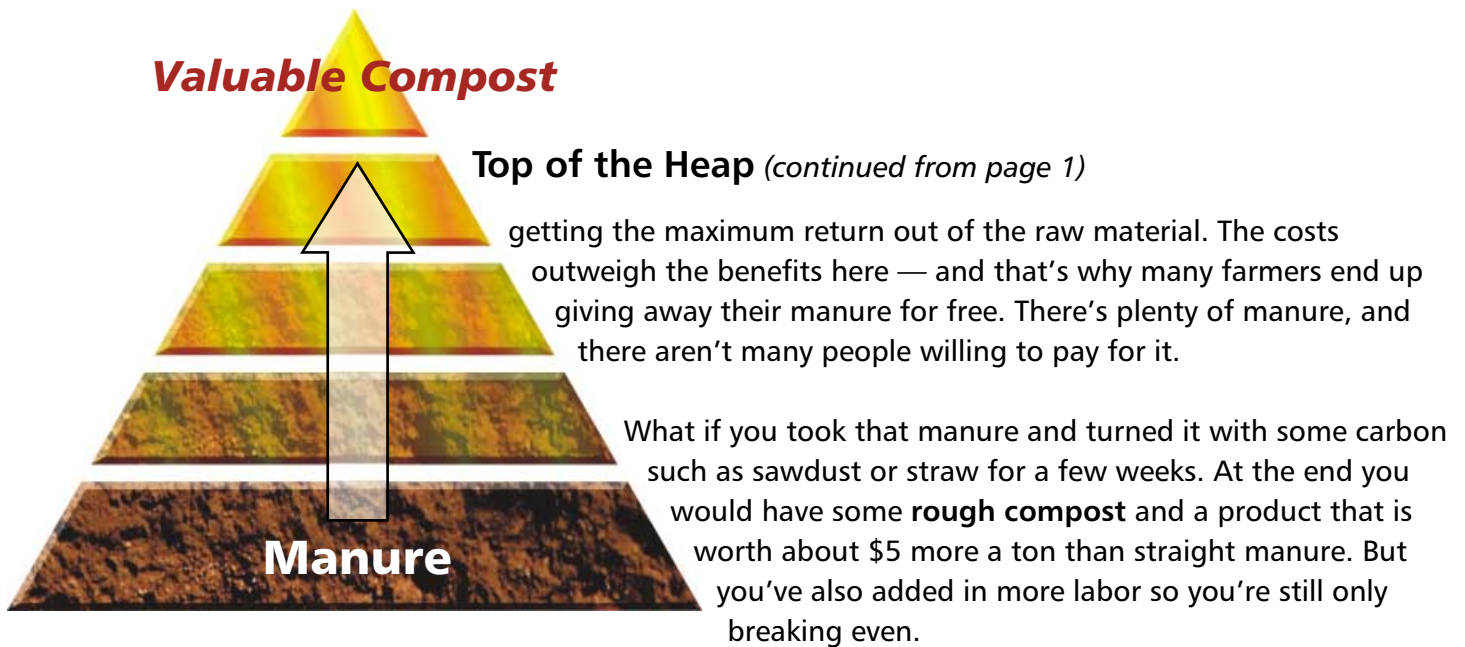
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## The Composting Pyramid



The next step up is developing a **custom recipe** with the right balance of carbon and nitrogen, the right moisture, and the right level of porosity. Here you’re really beginning to add value. Your compost is no longer undifferentiated waste, but a valuable product. Because you’ve put some work into it, you’ve entered a market with a little less supply and increasing demand.

Then let’s say you add some inoculants to give the soil just the right balance of microbes. At this point you not only have compost but a **soil ecosystem**.

Take this soil ecosystem and cultivate it with a turner that generates humidity by spraying the compost as it turns and you now have a **compost ecosystem**.

Cover that humidified compost ecosystem with specialized fabric in a windrow and you now have an even more refined **humified compost ecosystem**.

Take that humified compost ecosystem and begin to add special recipes of inoculants and compost ingredients to customize it for particular grower needs — like golf courses and greenhouse gardeners — and you have an **even higher value compost**.

Begin putting that compost into fifty or twenty-five pound bags and you can begin selling the compost for even more, making that ton of compost a **retail product**.

Here we’ve finally gotten to the top of the compost pile — the “gold standard” — which is retail selling of a carefully crafted, specialized product. The composters who are able to truly add value to their compost are those who have followed all the steps of adding value to their compost, often combining custom blending for specialized customers — like golf courses — with retail sales. This brings us back around to the habits of successful composters. Looking again at the “Composting Value Pyramid” above, we might say that the habits of successful compost sellers are these:

*(continued on page 3)*

## *Top of the Heap* (continued from page 2)

### **Successful compost sellers...**

- Create a specialized product
- Create a distinctive product
- Know how to communicate to the needs of specific buyers
- Know how to package and tell the story of their compost
- Know how to leverage the right compost inputs to add value
- Know how to leverage the right compost processes to add value

In the end, the thing that makes the difference between the waste compost seller and a high-value seller is the quality and complexity of the product and the ability to package and communicate that quality and complexity. It's really just like any other business.

What's the difference between a Lexus and a Yugo? Quality, complexity, and the ability to explain the difference.

**Save money by purchasing now!** In spite of recent fuel and materials cost increases, MBS has committed to honor all current price quotes through February 29, 2008.

## **Value-Based Marketing of Composted Products**

"A race to the bottom" is a typical description of compost prices in recent years. Attaining higher prices has been a challenge throughout the history of the industry. Using marketing principles gleaned from other industries, one company has managed to obtain prices a factor of 10 to 100 times greater than many published prices of compost. This has come about through specific attention to each of the "Four Ps" of marketing: **Product, Price, Place, and Promotion**, as well as to factors such as **niche marketing, sales force development, and packaging**.

The product focus has been in two areas: the **quality and composition** of the product itself, and developing a **variety of specialty products**. Production of humified compost is accomplished with similar operating expenses by paying greater attention to the overall process of composting.


- Rather than using low price as a differentiating factor, **premium pricing** has been used as a market signal of higher value and quality.
- **Place (distribution)** has been carefully designed to provide direct sales to specific, high-value customers, as well as sales through retail channels.
- **Promotion** has been given just as much attention as production, with a significant emphasis on education, value and usage.
- The company has discovered, identified, and cultivated several specific **niche markets** that place high value on tailored products based on humified compost.
- A **professional sales force** has been deployed in order to separate the selling and production aspects of the business and allow each to focus on their respective role. Packaging has been designed and developed to support the high quality, premium priced positioning of the product.


# MEASURE, PLAN, TAKE CONTROL...


## *A Systematic Approach to Soil Fertility*

Attaining soil fertility goals means first *measuring*, then *planning a strategy*, and finally *taking control*. We do this by leveraging nature to work with us, not against us, in sustainable production and composting technology.

- Measuring** — First, it is important to measure the baseline CPBH. CPBH stands for the **C**hemical, **P**hysical, **B**iological, and **H**istoric information required to develop an effective soil fertility program. Once we numerically document the situation, we can formulate a plan to get to the fertility level we want.
- Planning** — With a CBPH Baseline that gives you a current snapshot of your soil fertility, you can initiate a plan to maximize yield and quality, balance the soil, feed the crops, and activate defenses against weeds, insects and diseases. A crop sequence can be put into place that addresses nitrogen and nutrient sources, reduced weed pressure, and protection of the beneficial microbial population with a continuous supply of growing roots.
- Taking Control** — The Baseline tells you where you are, the crop sequence tells you where you plan to go, and the fertility program gives you a firm grip on the fertility controls necessary to be successful.

International Bio-Solutions				
Baseline Analysis Results For:				
		Program: 15 North and South Organic: No Acres: 80 Crop: Corn		
		Lab: Midwest Bio-Systems, Inc. Lab ID: Sample ID: S326	Date Sampled: 3/10/2003 Date Submitted: 3/10/2003 Date Reported: 3/10/2003	Sample Location North and South Sample Acres 80
Chemical		Result	Desired Range	
CEC	Cation Exchange Capacity	6.3		
Percent Base Saturation	Nutrient	Units		
	Potassium	K %	10.2	5.9
	Calcium	Ca %	75.3	69.76
	Magnesium	Mg %	11.2	15.19
	Hydrogen	H %	3.2	0.5
	Sodium	Na %	0.2	5.2.0
Ammonium Acetate (T) Bray 2 Extracts + Soluble Test (A) or Morgan Extract	(T) Calcium	Ca Lbs/Acre	1900	1200-3000
	(A) Calcium	Ca Lbs/Acre	540	600-1500
	Available/Total	%	20%	40-50%
	(T) Magnesium	Mg Lbs/Acre	170	300-500
	(A) Magnesium	Mg Lbs/Acre	40	150-250
	Available/Total	%	24%	40-50%
	(T) Phosphorus	P Lbs/Acre	310	200-400
	(A) Phosphorus	P Lbs/Acre	150	100-200
Available/Total	%	48%	40-50%	
(T) Potassium	K Lbs/Acre	500	300-650	
	(A) Potassium	K Lbs/Acre	200	150-375
	Available/Total	%	40%	40-50%
	Sodium	Na PPM	3	30-80
Micro-Nutrients	Zinc	Zn PPM	10.5	4
	Manganese	Mn PPM	31	18
	Iron	Fe PPM	86	18
	Copper	Cu PPM	1.0	1.6
	Boron	B PPM	0.9	1.4
Water Soluble Tests	Nitrate	N Lbs/Acre	22	20-70
	Sulfur	S Lbs/Acre	36	50-90
	Conductivity	Ergs US	220	200-300
	Redox Potential		25.5	26.29
	pH		6.2	6.5-7.0
SMP	Buffer pH		6.7	6.7-7.3
	Organic Matter	%	1.6	2.0-4.0

International Bio-Solutions				
Baseline Analysis Results For:				
		Program: 15 North and South Organic: No Acres: 80 Crop: Corn		
		Lab: BBC Laboratories Lab ID: 40375 Sample ID: Rolley A	Date Sampled: 3/8/2004 Date Submitted: 3/9/2004 Date Reported: 3/16/2004	Sample Location North and South Sample Acres 80
Biological	Enumeration	Desired Range	Diversity	
Aerobic	32,000,000	10million - 1billion	1.6	Aerobe : Anaerobe Ratio 8.4 : 1
Anaerobic	3,800,000	>1/10 of aerobes	0.5	
Fungi	10,000	500,000 - 5million	0.2	
Actinomycetes	43,000	100,000 - 1 million	0.9	
Pseudomonads	100,000	1000 - 1 million	1.2	
N-Fixing Bacteria	2,300	500,000 - 2 million	0.3	
Total Species Richness Diversity (SRDT)		> 9.5	4.7	Diversity

International Bio-Solutions			
Baseline Analysis Results For:			
		Program: 15 North and South Organic: No Acres: 80 Crop: Corn	
		Lab: Midwest Bio-Systems, Inc. Lab ID: South Quarter Sample ID: South Quarter	Date Sampled: 3/8/2004 Date Submitted: 3/9/2004 Date Reported: 3/16/2004
Physical	Result	Desired Range	
Penetrometer	150	200-300 lbs	
Sieving	250	>50% Stable Aggregates	
Specific Gravity	70	Depends on Soil Type	



# A LIVING SOLUTION...

## *The Act Line of Fertility Products*

Good fertility results from a complex mixture of nutrients and the right soil microbes to deliver them. A system of complete, living fertility is what the Midwest Biosystems Act fertility program delivers.

- **Act N** — Introduces strong nitrogen fixing bacteria that work to make the soil's natural nitrogen available to plants so that synthetic nitrogen does not need to be added.
- **Act Phos** — Releases nitrogen fixing, phosphorus solubilizing bacteria that break down the soil's phosphorus for plants to use.
- **Act Foliar** — Releases yet another kind of robust nitrogen fixing bacteria to stimulate photosynthesis, when sprayed directly on plants' leaves.

**Act N and Act Phos** work in the soil to stimulate the earth's natural biological cycles. They are then applied directly to young plants to insure that the full power of the nitrogen and phosphorous processing bacteria are available to the plants.

**Act Foliar** is then applied directly to a plants leaves to stimulate photosynthesis and enabling the plant to draw maximum nutrients from the soil.



- **ActPak** — ActPak Compost Tea Activator catalyzes a diverse mixture of microbes and sustains them while the tea is being applied to plants and to the soil.

ActPak enhances compost tea by providing for maximum growth and diversity of biological agents. ActPak is added to compost tea before application — it acts as a catalyst to spring the compost's microbes to life so that they will immediately go to work in the soil.

### **ActPak is perfect for anyone wanting...**

- Optimal biological diversity in the soil
- Increased plant health
- A non-toxic compost tea enhancer
- Improved soil well-being
- An OMRI listed product for organic production

Midwest's Act Fertility Program is a simple to use solution that delivers complex nutrition to the soil. This is a solution that will replace expensive, short-term chemical solutions with a fertility program that will build the health of your soil ecosystem for many years to come.



## Poultry Bedding: *New Ideas from Midwest Bio-Systems*

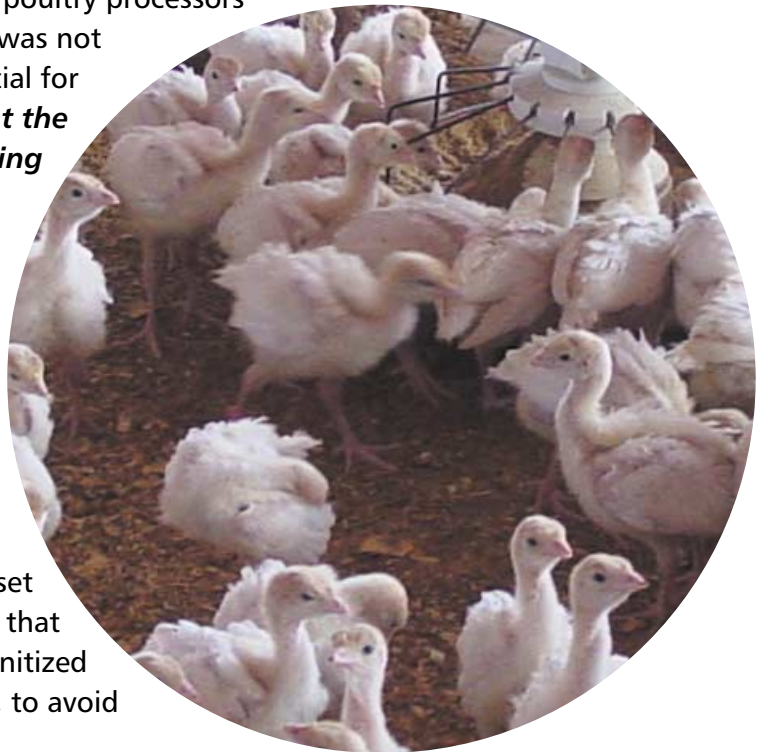
By Edwin Blosser, CEO, Midwest Bio-Systems — *This article is an abstract of Edwin's speech which he will be delivering at the U.S. Composting Council Conference February 11 at 2:30 p.m.*

Broiler chick production in the United States has steadily increased since 1975. With this increase in hatchery production comes an increase in hatchery waste. Usual methods of disposing of hatchery waste include landfill, land application, rendering, and egg wringing. However, composting technology may be a realistic alternative to convert nitrogen rich hatchery waste into matter suitable as a soil amendment and organic fertilizer.

The concept of compost use in poultry bedding has been limited by the fact that those who started the process are themselves in the poultry business. The large poultry processing operations are extremely concerned about the potential transfer of poultry diseases from one operation to another. To the extent that spent poultry litter is used as an ingredient in the compost produced for bedding, the remote possibility exists that the compost could spread a disease from one producer to another.

For this concept to be accepted by the industry, the poultry processors would have to be confident that the compost used was not produced from animal manure and poses no potential for the spread of poultry diseases. ***We recommend that the bedding compost be produced by someone making only manure-free compost, thus eliminating the potential for delivering manure-based compost through human error.***

The issue of disease spread should be addressed initially and directly with the poultry processors and their field representatives to be sure that their concerns are laid to rest before bedding product sales are attempted. If the bedding provider plans also to offer services to clean out spent litter, assurances would be needed that either a separate set of equipment was used to haul away spent litter, or that the equipment used was adequately cleaned and sanitized before being used to bring in the bedding compost, to avoid contamination.



***Midwest Bio-Systems has developed and deployed a processing system the combines the unique properties of humified compost with specialized minerals and wood shavings to produce poultry bedding that suppresses pathogens and reduces ammonia in the barn.*** The presence of ammonia has a negative impact on bird health and weight gain. In poultry operations, ammonia is controlled by exchanging the air in the houses for fresh air from the outside — the higher the ammonia levels, the more fresh air must be introduced into the house. If the outside temperature is below the temperature required in the poultry house, the outside air must be heated. The cost of heating the poultry barn in the winter will be directly related to how much outside air must be introduced. ***The same unique humified compost properties also produce dryer floors, better feed conversion, fewer mortalities, and saves on heating and ventilation costs.***



**Create Highly Effective  
Humified Compost**

**Advanced Composting  
System Workshops**

## **Upcoming Workshops**

**March 11-13, 2008 — Sonora, CA**

**March 18-20, 2008 — Myerstown, PA**

**May 20-22 — Tampico, IL**

**July (TBA) — Canada**

**September 16-18 — Tampico, IL**

**November 11-13 — Georgetown, KY**

**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**.

“ 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, Ark.*

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.

## **Seating is limited — Register today!**

**Contact us today for  
pricing information:**

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## ***Look for us!***

Call for more information — 1-800-689-0714

### ***U.S. Composting Council Conference***

Feb 9 – 12, Oakland, CA

- Look for us at booth #51...
- Equipment demonstrations will include the new **SP-170 Self-Propelled Compost Turner!**
- MBS CEO Edwin Blosser will be addressing the Council Feb. 11 at 2:30 p.m.

### ***World Ag Expo***

Feb 12 – 14, Tulare, CA

- Come see us near the International Pavilion
- Equipment demonstrations

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