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Use Bokashi to ferment your food scraps. Bokashi eliminates greenhouse gases and saves the planet. Plant your fermented food scraps and get 200% plant growth without fertilizers

Wednesday, December 24, 2008

## The Naked Truth.....about COMPOST!



[http://en.wikipedia.org/wiki/The Emperor%27s New Clothes](http://en.wikipedia.org/wiki/The_Emperor%27s_New_Clothes)

There, I just blurted it out.....there is something untruthful, something not being said about compost. Understanding and committing to practices that are truly sustainable takes courage, involves change, requires forethought and action but gives in return treasures for the effort. At bokashicycle.com we are committed to educating those who really want to know the facts, and believe they will then with knowledge and good science make the planet a better place.

What I have to say today will go against a popular belief so strongly imbedded and advocated by so many that it is certain to engender retorts and denials. But one of the great thrills in science is seeing things as they really are.....seeing the truth, like the child who told the truth about the Emperor's New Clothes in Hans Christian Andersen's 1837 tale of the swindlers. The weavers, had declared they could manufacture the finest cloth to be imagined with colors and patterns that were not only exceptionally beautiful, but most importantly, the clothes possessed the wonderful quality of being invisible to any man who was unfit for his office or unpardonably stupid.

So we are led to believe that an important part of recycling and keeping

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About Me



Larry Green

Dr. Larry Green, MD,Phd is a research scientist with more than 40 years experience in problem solving in the bioscience sector. He is a physician and scientist, keenly interested in finding quality solutions to common problems affecting our daily lives. Like many others, he has witnessed the thoughtless apparent disregard for precious land and resources and believes strongly we can do much to improve the situation by applying good science and common sense. It is possible to reduce green house gas emissions and conserve our precious water reserves far beyond what is currently in practice with relatively little effort with a substantial

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Bokashicycle: The Naked Truth.....abo...

the planet "green" is making and using compost. We are increasingly being told that we've got to get the solid waste out of the landfill, that composting is good, that we should recycle our kitchen scraps, lawn clippings, etc. by composting them, and that compost is good for the soil and plants because it restores naturally what was missing. Plants are supposed to grow better when we use compost.

City and county planners are diverting more and more solid waste to tracks of land where compost is produced and then sold back to the public for garden use. Farmers frequently advocate composting and the use of animal manure to enrich the soil so they can obtain higher yields. A great compost industry has evolved. Giant earth moving machines, mixers, grinders, and trucks are used to move and manage the piles of "decomposing" organic matter that will in time be called "compost".

Gardeners are coached and advised to use compost, to recycle their garden waste materials, and sold tumblers, bins, etc. designed to speed up the decomposition of organic matter so that the product can be used again and again in the garden.

What's wrong with this picture? A lot. It's plain to see we are headed in the wrong direction advocating compost as a sustainable process and it is certainly harming not helping the planet.

So what is compost anyway? Some people will say it is a dark, crumbly, and earthy-smelling form of decomposing organic matter, but it is perhaps better defined as a stable humus material. I like the Virginia Tech bulletin "Compost: What Is It and What's It To You" pithy way of stating what it is.

<http://www.ext.vt.edu/pubs/compost/452-231/452-231.html>

You can't actually define it because no one knows exactly what it is. We can however say a lot about the process. When you purchase or make your compost you are getting something "earthy" at the end of the process but no two batches are ever going to be the same.

The process is well known. You have to collect the organic material and put it in a pile. The decomposition occurs because the naturally occurring microbes in the pile are working hard to consume the mass. They do this by oxidizing the plant material rendering in the end if all goes well a mass of humus.

There are many different types of microbes involved in the process all working together and an important part of the process is keeping the conditions in the pile right so that all of the essential microbes and fungi digesting material are healthy. During the process, because of the oxidation, the pile heats up. The heat is important because if the pile is too cold, the microbes won't survive or the process will be too slow. But if the pile heats up too much, the microbes will die and then you have only a dead heap of partially decomposed organic matter.

As the decomposition commences, a lot of carbon dioxide gas and water vapor is produced and because of the heat in the pile, the gases are driven into the atmosphere. The pile begins to collapse upon itself as the center of the pile decomposes. This results in a substantial drop in the amount of

relatively little effort with a substantial reduction in recycling costs.

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oxygen that is needed to oxidize material. The microbes can not survive when the oxygen level drops too low but other microbes that thrive in low oxygen environments will begin to flourish.

The anaerobic (low oxygen loving) microbes take over and produce noxious gases including ammonia, nitrous oxide, methane, and hydrogen sulfide and many other noxious materials. Because of the heat, these gases are also driven into the atmosphere. The loss of nitrogen in the form of ammonia means in the end the compost nitrogen content is reduced. This is the process of putrefaction and it accounts for the offensive pile odors frequently observed when material is allowed to rot. That's not good.

Anyone who ever tried to manage a compost pile will tell you it is a little tricky. It is almost impossible to maintain the perfect conditions to get a consistent product. You've got to make a pile big enough to get the temperature up to 110 – 150 F, assuming you have a proper mix of microbes. You've got to turn it and mix it adequately to keep the oxygen levels up to support the oxidation and you've got to add enough water to keep the humidity between 50 and 60%. If you turn it too soon, it will cool too fast. You have to add more water as it dries out to keep the organisms working (wasting water).

We're not done yet. The microbes are pretty fussy.....some need organic matter high in carbon content whilst others need organic matter rich in nitrogen. You've got to support these requirements or the pile won't decompose in the manner you'd like. It turns out you've got to have a proper balance of carbon to nitrogen to make the pile work (C: N ratio about 30:1). People usually define carbon as "brown stuff" and nitrogen as "green stuff".....so you mix brown and green materials to try to get the ratio correct.

I think you've got the picture and it is kind of ugly. It's very hard to control this process and virtually impossible to keep it going smoothly all along the way. You just can't mix the pile and keep the temperature, humidity, C: N ratios, and oxygen levels etc. all where they need to be to get a consistent product. When it is done industrially, a lot of energy consuming devices are used to make it better. Temperature sensors, blowers, heaters, sprayers, oxygenators, earth movers, etc. are employed. A lot of labor and energy is consumed to produce a product. It can take easily 6 months from the beginning to the end of the process to have a stable and cured pile of compost.

In the end the humus produced, because of the heat, etc. has been sterilized. The natural microbes that normally inhabit the soil are no longer present. The natural microbes in the soil are intimately involved in assisting plants fix nitrogen and provide many nutrients that plants can readily assimilate. A lot of nitrogen was lost in the decomposition (taken out of the product as ammonia and nitrogen oxide gases and dispersed into the atmosphere). The oxidation of the organic matter results in tons of carbon dioxide and water vapor going into the atmosphere. Have you ever witnessed a steaming pile in the cool morning air?

Is it natural? People frequently like to say composting is natural "nature's way of breaking down the organic matter". Nothing could be further from the truth. When did you ever see mounds of material piled up and rotting in nature? Men recognized that you could accelerate the oxidation and breakdown by gathering and piling material in masses that are properly

aerated and humidified.

In nature material is far more slowly broken down. When the leaves and debris do pile up and become matted down by rain and water, the oxygen is excluded and anaerobic processes take over. Most of the decomposition is occurring at ambient temperatures. Because no one is turning material to get the oxygen levels back to surface conditions, the interior processes resulting in decomposition are anaerobic (at very low oxygen levels). Have you every witnessed leaves as they naturally rot? They form a soggy mass on the ground in the fall and by winter's end have completely disappeared.

The process of composting is not nature's way but man's way of rotting material. It is polluting the planet. We are by composting releasing water vapor, carbon dioxide, ammonia, and numerous other gases into the atmosphere. We are releasing a lot of heat that would not have been produced naturally. If we encourage people to compost, promote composting as an environmentally sound solution, and want to believe it is a sustainable practice that will be good for the planet, we are only fooling ourselves.

Like the child who saw the emperor's suit for what it was, those who want real sustainability will acknowledge there has to be a better way. And there is. We'll talk more about green house gases, microbes, and anaerobic fermentation in the future.

Posted by Bokashicycle at [8:52 AM](#) 

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