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Compost Bins and Tumblers do not work!

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From people new to composting... I too frequently have heard people say? ?my composter is not working, maybe I should buy yours,? or ?your composter does not work, maybe I should buy someone else?s.? Here is a news flash, composters do not work, only microorganisms work (compost). It is not about what composter you build or buy, it is about microbiology. This is not about opinions, it is about science. Whether you create a compost pile, build a composter, buy a bin, tumbler, or put the material in the trunk of your car? if you create a healthy environment for the microorganisms you will get effective composting? if not? you won?t. A composter is just a container for material and a tool to help the person composting create the most favorable environment they can for microorganisms to work. Doing that sometimes becomes an art but it must still be based on science. The design of a composter only matter to the degree it makes it easier to create a favorable environment for microorganisms and thereby encourages people to compost. There are a number of compost bins and tumblers on the market to help the urban gardener compost. However like any composting effort, they will only be effective to the extent a person follows the rules for the care and feeding of microorganisms. The compost bin or tumbler just give you a tool to do that? but it is still up to you. Understanding the type of microorganisms involved in composting is important because they will affect the outcome of your composting efforts. There are two basic types: aerobes and anaerobes. The most efficient are aerobes as they work much faster and harder than the lazy anaerobes. However they are much picker about their environment and if conditions are not just right, they either do not develop or they die off leaving you with just the anaerobes. The anaerobes will live and work through almost anything but can take a much long time to get the job done. The key to rapid composting then is creating a healthy environment for the aerobes. I?m going to round off the corners a little and summarize but here is what you must have to create a favorable environment for the aerobes microorganisms: 1) Material, 2) Moisture, 3) Temperature, 4) Oxygen, 5) Time 1) Material?Material is made of up of carbon (Brown stuff) and nitrogen (Green stuff). Nitrogen gives the microorganisms energy and carbon is what they eat. While it can vary based on the material, a 25:1 to 30:1 (C:N) ratio of carbon to nitrogen is considered a good starting point. Particle size is also important as the smaller the size of the material, the more surface the microorganisms can get to. Give the aerobes too much energy (nitrogen) and you can burn them out pretty fast and don?t give them enough food (carbon) and you starve them to death while degrading the quality of your compost. Mixing a variety of materials will typically enhance compost quality. 2) Moisture? This is primarily the transport mechanism for microorganisms but also softens material. Not enough moisture and the microorganisms can?t get around in the material to grow and work. Too much moisture and they get lost or drown. Compost material should be damp as a wrung-out sponge and feel wet, but you should not be able to squeeze out water. Use rain water if possible when you need to add moisture to your compost. Municipal water is fine but remember it is treated to kill microorganisms. Those chemicals are in small quantities and will evaporate but something to think about. 3) Temperature? There are two temperatures to consider in composting; ambient (outside) and composting (material) temperatures. Once the outside temperature drops below 50 degree F composting really begins to slow down and when it gets below 40 it is practically stopped. Temperature of the compost material itself is important and is a good indicator as to the health of your aerobes microorganisms. Heat generated in the composting process can (and should) easily reach 130 digress F and is produced by the

activity of the aerobes. The initial period of heating my only last a few hours to a day or so but is import. The faster the aerobes are consuming the nitrogen and eating the carbon, the hotter the compost becomes. Hence, if your compost stays cold all the time, the aerobes are not happy and will let the anaerobes take over a lot of the work so you better not be in a hurry to get compost. Also compost that heats up properly not only composts faster but is higher quality as it can help kill some of the weed seeds, root structures, and pathogens. Another important fact that a lot of people do not realize has to do with mass. To get effective heating you must have a critical mass of material. In general material mass with less than 9 to 10 cu ft in an enclosed composter are going to have a harder time heating. Some of the composters on the market today are less than 7 cu ft in capacity and simply are not going to heat well at all. They will still compost but you are not going to get enough mass to really heat the material. 3) Oxygen?The anaerobes don?t need oxygen but that is why they have little energy and are lazy and slow. The aerobes are like you and me; they must have oxygen to work and play well. When you put your material together (your recipe) and start composting it can take only a few hours to burn the oxygen out of the core of the material. When this happens the aerobes sit back and wait until you get them more oxygen. This makes aeration of your compost critical if you want to keep these guys working. Remember, their working is where you get your composting heat. No oxygen? no work? no heat. 4) Time?There needs to be a qualification here as to how long it takes to produce compost. You hear many composter manufactures, including us, making claims they can product compost in a couple weeks or whatever. The qualification is that you can call it compost and you can spread it on the ground and use it but it is not fully matured compost. The concept behind the backyard compost bins and tumblers I think follows the 80/20 rule. Get 80% done in the composter and let the last 20% finish in the ground, container or pot. With the proper material mix you can product compost in a couple weeks (80% done) if you understand that it could take the better part of a year to ?finish? the last 20% in the ground. I think this is a great idea because to effectively compost at home and cut the waste stream to landfills we must be able to compost in higher volumes than waiting up to a year for ?finished compost? in each batch. Turns out, this works great. www.Urban-Composter.com [1] (A Composter's blog)

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