Compost vs Mulch

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There's words to a comical Hawaiian song that says, "It's fun when you know how it's done!" and this seems to apply to many things in life. In gardening and farming, compost is an important component to enrich and fortify soil, and provide a home for microorganisms. Making compost is like baking a cake. You gotta get the ingredients right and it needs to bake at the right temperature for a specified amount of time.

Mulch is a different matter. Mulch is not compost, but is a key component in the creation of compost. Using it in place of compost can have detrimental effects on your crop, even turning leaves yellow. Mulch is organic matter such as grass clippings or ground up trees. Mulch needs to go through a process of breakdown to convert it into compost. The key ingredients are carbon, nitrogen, air, water, time, and ultimately heat.

The ideal nitrogen ratio is around 20:1. All mulched material has a carbon-to-nitrogen or C:N ratio. The woody stuff has more carbon and can have ratios as high as 225:1, while the more green stuff has more nitrogen. Having an equal amount, by weight, of green material and browns or carbon is a start. Greens would be fresh grass, while dried grass and woody material are browns.

A key element in making compost is temperature. The compost needs to heat up to 140 to 160 degrees F in order to kill seeds and diseases or pathogens, and this is determined by using a compost thermometer, usually with a 2 foot or longer sensor. You can tell your compost pile is cookin' and has the right proportions of brown and greens by how fast the pile heats up.

Under ideal conditions, the microorganisms will thrive and do their magic by breaking down the material quickly. The rule of thumb is to turn the pile five times in fifteen days so the whole pile breaks down evenly. The amount of days required to complete the process can vary considerably, from 15 to over 30 days.

The moisture of the pile should be around 50%, so it feels like a wrung-out sponge The right amount of water is key; too much and you drown the microorganisms, and too little and the process is slowed considerably. The same with air; not enough air and the microorganisms suffocate, and with too much water the pile will instead produce methane and sulfur to stink up the place. As a result, you will not have nutritious compost.

When the microorganism's job is done, the temperature will drop, the materials will stabilize, and now you have compost ready to spread or mix into the soil. The nutrient quality of your mulch will depend on the quality of materials added to create it. Adding nutrients such as blood, bone, seaweed, and manure or even fertilizer only adds to the quality and nutrition of the material. With a computer, garbage in, garbage out, but in composting, some of that garbage is very valuable.

For more detailed information on making compost, download this publication from the UH CTAHR website: <u>http://www.ctahr.hawaii.edu/oc/freepubs/pdf/HG-41.pdf</u>