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A Decaying subject?

Dr. Robert Nyvall

[rfnyvall@gmail.com](mailto:rfnyvall@gmail.com)

I find that a real gardener is not a man who cultivates flowers; he is a man who cultivates the soil. If he came into the Garden of Eden, he would sniff excitedly and say: "Good Lord, what humus!" - Karel Capek, author.

Humus and compost are products of the decay process. Organic mulch, which starts out for a different use, will also eventually decay and become humus. From compost to humus is a process much like a production line. Raw materials go in one end and the completed product comes out the other.

The hundreds of pounds of garden plant matter is the raw material from which the final product, humus, is eventually derived. The chlorophyll and blooms are gone but the nutrients and minerals remain in the dead plants and eventually are released through decay to make the soil a "vital", living creature and nourish new life.

Composting is the beginning and starts with a succession of fungi and bacteria that are the "machinery" of decomposition. First are the "colonizing" fungi that break down the easily decomposed plant portions such as cellulose. As these fungi grow, they give off moisture and heat, like any other living organism. The temperature may rise in the compost pile to as high as 160° F, a good sign that the composting process is working. The colonizing fungi die off at these high temperatures and different heat-tolerant fungi and bacteria begin to grow, further continuing the composting process. These high temperatures are usually sufficient to kill weed seeds, disease-causing organisms, and insects.

Almost all kinds of plant materials can be composted. Garden plants such as vegetables and flowers, leaves, small branches, moderate amounts of sawdust and small portions of grass clippings. Large amounts of grass clippings are not a good source of compost since they "mat down" and may also contain pesticides added to the lawn during the growing season. Do not add cat or dog feces because they transmit diseases nor meat, bones, grease, whole eggs, and dairy products since they attract rodents.

Plants will decompose faster if they are chopped up and investing in a good shredder should be given some thought. Additional nitrogen, usually in the form of ammonia nitrate, will speed decomposition as nitrogen is an energy source for microorganisms. A "soup can" per cubic yard is usually adequate. Also, adding moderate amounts of soil to the pile is beneficial since it contains microorganisms. The most important addition to a compost pile is moisture and a good soaking will cause the fungi to begin growing. There are also several

commercial products composed of dehydrated formulations of fungi, normally found in nature, that claim to speed up decomposition in a compost pile.

How to build a compost pile can vary from simply dumping the plant material on the ground to grinding it up and placing it in a well-built compost bin. However, simply throwing organic materials into a pile on the ground will result in a very slow composting process. A compost bin may be made simply out of metal fencing material bent into a cylinder or out of treated lumber. The compost bin should hold at least a cubic yard of material and have a “door” or an easy access to the compost. Ideally, there should be two or three bins so compost can be aerated, thereby encouraging microbial growth, by moving it after a few weeks, from bin to bin. You may also buy commercial “composters” in the form of plastic tumblers, bins, and containers that vary in size from a 5 gallon bucket to large bins.

To continue converting this compost into humus is often equated to the alchemy of turning lead into gold. But if all goes according to plan, the final reward for a gardener is to run hands through soil rich in humus.

Humus is Latin for soil. But in gardener’s language it’s the end product of the rotting of organic matter whether from composted garden plants or, as an example, the natural decay of leaves in the forest. Humus benefits the soil in a number of ways. Soil temperature is modified, organic matter is increased, and essential nutrients for plant growth are supplied.

Humus is one of the few things that soil cannot get too much of. It consists of thousands of organic compounds and is covered with negative ions that keep positively charged plant ions, such as potassium and calcium, from leeching out of the soil. Additionally, humus binds with certain nutrients such as iron to make them more easily absorbed by plants. Humus has a buffering effect which means the soil pH does not have to be exactly “spot on” to grow plants that have a certain soil pH tolerance.

A soil rich in humus is also rich in microbial glues. These glues bind together small clay particles to make larger particles that now have large air spaces between them. The formerly tight clay soil is now breathing and spongy to better absorb water.

However, humus must be continually augmented. Many garden activities such as tilling the soil and using concentrated nitrogen fertilizers hasten humus decomposition.

Tillage aerates the soil causing microbial populations to increase. These larger populations now decompose organic material, in the form of humus, at a faster rate than prior to tillage. A couple months after this population “burst”, the soil becomes depleted of nutrients that can be replaced by adding more humus or inorganic fertilizer.

Nitrogen is the nutrient used as an energy source by microbes. The addition of it to soil also causes an increase in microbe populations, similar to tillage, that hasten the decay of humus.

For those gardeners who have either just started the compost process or have not yet obtained enough compost to be beneficial, Bloomers carries bags of compost.

To paraphrase, “The Latin name for man is derived from humus, the stuff of life in the soil.” - Dr. Daniel Hillel, World Food Prize winner and inventor of trickle irrigation.