Duke Farms

An Experiment in At-Home Composting

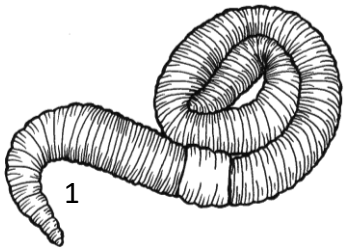
Part III

The concept of at-home composting may seem overwhelming, even intimidating, at first glance. The wealth of information available on the subject can be both helpful and harmful, steering you in the right direction while, at the same time, making you feel as though you are missing something important or doing something wrong. Fortunately, there is surprisingly little that can go seriously amiss when it comes to composting in your own backyard!

Check out the Duke Farms' educational resource
The Black Gold Standard: A Beginner's Guide to Composting
on the Distance Learning Portal for a thorough explanation of the composting process; the many benefits of both composting as a waste disposal method as well as compost as a soil amendment; and a helpful breakdown of different composting systems.

This resource will focus on the composting process as it plays out in real time, in an open bin system, utilizing the hot/active method – which involves weekly turning of the compost pile, vigilant monitoring of its temperature, and the regular addition of both "greens" (nitrogen-rich organic matter like fruit and vegetable scraps) and "browns" (carbon-rich organic matter like newspaper and straw). It will also explore the answers to interesting questions such as what organic matter looks like after one, two, three weeks of exposure to the elements and decomposer activity, and what some of those decomposers are.

In short, this experiment will illustrate just one of the many ways to compost at home easily and effectively.



Duke Farms

Day 15

In Part II of this series, the different physical and chemical properties of carbon-rich "browns" and nitrogen-rich "greens" – and therefore the different rates at which they decompose – were discussed:

"Browns contain more cellulose and lignin, dense, fibrous polymers that contribute to strength and rigidity in organic matter such as leaves, paper, and wood (all commonly-used browns in compost piles). The higher concentrations of cellulose and lignin in browns makes them more difficult to process."

However, even organic matter that technically falls into the "greens" category can remain undecomposed for days, weeks, or even months.

Pictured below is a radish found in the compost pile – or, rather, the husk of one. It has been cleanly hollowed out by decomposers; the soft, white flesh is gone, leaving behind the thick skin. But if the radish is considered a "green", why has it not decomposed in its entirety?

Fruit and vegetable skin, on average, contains *3 to 4 times more fiber* than a serving of the flesh alone. Two of the main components of fiber are cellulose and lignin, which, as was mentioned above, contribute to strength and rigidity in organic matter…and are therefore much more difficult for decomposers to consume. So, even though fruit and vegetables provide the compost pile with nitrogen, tough material such as apple cores, banana peels, avocado skins, watermelon rinds, and pumpkin stems may be found amongst the humus long after their sweet, colorful tissue has been nibbled away.

Duke Farms

The extended decomposition time of fruit and vegetable waste like skins, cores, and pits is one of the main reasons as to why representatives of natural areas have begun to advocate against leaving such waste along hiking trails and at camp sites. Despite being "organic" in nature, skins, cores, and pits are, in truth, quite similar to paper litter in that, although they will eventually decompose, until they do, they are unsightly and of little use to the ecological community of the area in which they have been disposed. In fact, they are not only of little use, but also potential choking hazards for any animal that attempts to eat them, especially considering many fruits and vegetables favored in the eastern United States are not native to this region.

TRAILSIDE/CAMPSIDE DECOMPOSITION TIME

APPLE CORE
About 2 months

ORANGE PEEL
Up to 6 months

BANANA PEEL
Up to 2 years

If you carry it in, be sure to carry it out!

In Part II of this series, it was also noted that, in order to hasten decomposition, large material – such as whole fruits and vegetables, loaves of bread, and thick paper and cardboard – should be torn into chunks or shredded into bits. In the first photograph below, an eggplant, a gourd, and a few potatoes that had been buried in the compost pile almost from the day it was assembled have been unearthed. Surprisingly little decomposition has occurred in the two weeks since then, despite consistently high temperatures, a moist surrounding environment, and an active population of decomposers. The surface area and thick skin of these vegetables have proven to be too great of obstacles for the majority of the pile's decomposers to overcome.

The second photograph shows that the eggplant, gourd, and potatoes have been cut into much smaller pieces, their fleshy portions exposed, before being returned to the compost pile. This should quicken the process!

Duke Farms

Duke Farms

Each week for the month of September into October, you can check in to see what the compost pile looks like, watching the decomposition process in real time and uncovering the variety of incredible organisms that make compost happen!

Let's get cookin'!