



Duke Farms

An Experiment in At-Home Composting

PART II

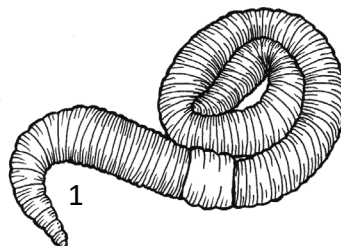
The concept of at-home composting may seem overwhelming, even intimidating, at first glance. The wealth of information available on the subject can be both helpful and harmful, steering you in the right direction while, at the same time, making you feel as though you are missing something important or 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.



Day 8

Last week, the compost pile was started with a bucket of kitchen scrapes and a couple of handfuls of straw. Just seven days later, it already looks quite different!

Decomposers have been hard at work breaking down the “greens” that were provided for them. As can be seen in the series of photographs below, much of what was added to the pile is no longer recognizable. Larger and/or tougher material, such as turnip ends, banana peels (the blackened object in the upper right-hand corner of the third photograph), and eggshells, remain recognizable and likely will for some time; it takes longer for the tiny decomposers – especially with the cooling ambient air temperatures of early fall – to break them down fully. To hasten the decomposition of larger/tougher material, tear or shred it into smaller chunks.

Most of the chosen “brown” material, the straw, also remains recognizable and will for some time. Carbon-rich browns are slower to decompose than nitrogen-rich greens due to differences in their basic physical and chemical properties: 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.



The compost pile last week



The compost pile this week (seven days later)



Turnip ends, a banana peel, and piece of eggshell, not yet fully decomposed



An eggshell and a dried tomato skin, still recognizable

While many decomposers involved in the breakdown of organic matter are too small to be viewed by the naked eye, there are plenty that are large enough to be seen and identified with relative ease. Flies, beetles, bees, wasps, slugs, snails, and, of course, worms, are all common visitors to the compost pile, among many other such organisms. Although not all these visitors are particularly friendly, unless they arrive in large groups, they should be allowed to explore the compost pile without interference – they are providing an invaluable service!

Here are three decomposers that were discovered hunting through the humus this week:



Common Pill Bug
(*Armadillidium vulgare*)

Also known colloquially as roly-polies, wood lice, and sowbugs, the common pill bug is not a bug at all, but an isopod, which is a type of crustacean. It is also non-native, having arrived in North America from Europe centuries ago. Nonetheless, it plays an important role in our soil ecosystem, feeding primarily on decaying plant matter.



Dusky Arion
(*Arion subfuscus*)

Another European transplant, the dusky arion is a terrestrial slug that can be found in a variety of habitats, from backyards and agricultural fields to woodlands and wetland. It prefers to stay hidden, keeping to the undersides of rocks and logs, or amongst the leaf litter. An omnivore, it feeds upon scat, dead insects and animals, and fresh and rotted vegetation alike.



Eastern Yellowjacket
(*Vespula maculifrons*)

The eastern yellowjacket is one of those potentially “unfriendly” visitors to the compost pile, but as long as it is not in the process of building a nest, it should be left alone. This decomposer has a sweet tooth, feeding on fruit, nectar, and honeydew, a sticky liquid secreted by aphids, along with a more carnivorous diet of other insects.

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No photograph of eastern yellowjacket could be taken at time of compost pile check



This week, another bucket of kitchen scraps – consisting of coffee grounds, used teabags, moldy tomatoes, soft squash, and stale bread, amongst other greens – was added to the top of the compost pile. A smaller bucket of wet mulch was also added; the microorganisms present in the mulch will serve to bolster the population currently active in the pile, and the added water will help quicken the decomposition process. This mix was then covered with a thick blanket of straw to shield it all from pests.





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Each week for the month of September, 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'!

