

“Is It Done Yet?”

Testing Compost Maturity

The degree of “doneness” that is appropriate depends on how the compost is going to be used. If you are using compost as a topdressing or mulch on garden beds, it is appropriate to use coarser, somewhat less finished compost. If you are going to be working compost directly into the soil close to planting time, then the compost should be mature and should be fine enough to fit through a ½ inch screen. This excludes wood chips or other coarse material that might not yet be fully decomposed. For making up a potting soil for germinating seeds, the highest level of maturity is required and a finer screening – such as to ¼ inch or even 1/8 inch – would be desirable.



With respect to soil incorporation or potting mixes, the reasons for being careful about maturity are summarized as follows in [A Green Guide to Yard Care](#) by Texas Natural Resource Conservation Commission, 1/98:

“Using compost before it is ready can damage plants. Undecayed ‘brown’ materials in the soil can temporarily reduce plant-available nitrogen. Undecayed ‘green’ materials can harbor pests and diseases. Immature compost can also introduce weed seeds and root-damaging organic acids.”

Simple checks of compost maturity:



Compost should be dark, crumbly, with no recognizable food.
Compost should have an earthy smell.

... but these alone are not enough! If you know your compost is already a year or two old, you don’t have to worry. But if you are trying to get compost into your garden quickly, it’s best to take a little time to test it further, especially if you will be planting the area soon. Two additional tests are described below:

The “Jar Test”:

Put some compost in a jar, add water to make it soggy, and seal the jar tightly. Leave it alone for a week, then open the jar (carefully!) and check for odor. If it smells like nice wet earth, then the compost is done. If you notice bad odors then it means that the materials in the compost were not sufficiently decomposed and anaerobic organisms have gone to work on the nutrients that remain. These anaerobes produce unpleasant odors as a by-product, so bad smells are the indicator!

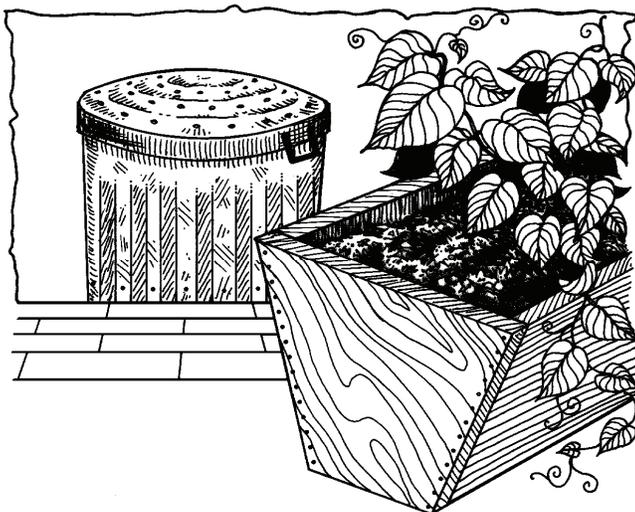
The Germination Test:

First, make up some compost “tea”: mix equal amounts of compost and water and let that sit for 5 minutes or so, stirring occasionally. Pour off the “tea” into another container. (The remaining solids can be returned to your compost pile.)

Then soak a few seeds, such as cress, lettuce, radish, or cucumber in the “tea” and an equal number of seeds from the same packet in distilled water for 2-3 minutes. Lay each set of seeds, clearly labeled, on dampened paper towels on a plate or tray and keep them warm and moist for a few days, until they start to sprout. It may help to place a layer of light plastic over the tray, to hold the moisture in.

Check the seeds every day for 3-4 days. In general, if the water-treated seeds germinate better, then the compost has not aged enough. More specifically, look for differences in how long it takes for the radicle (the early root shoot) to emerge; differences after 3-4 days in the number of seeds in each set that have germinated; and differences in the length of the radicle after 3-4 days.

Since you are only looking at a few seeds, small differences will not be significant. However if you see substantial delays or other differences in the tea-treated seeds then it indicates that the compost is not yet ready for using for planting. It may be that the compost has too high a level of natural salts and it simply needs to sit and “cure” for longer, with exposure to the weather. If you are testing in the Fall, you may wish to mix the compost into the garden bed and wait until Spring to plant.



Many kinds of seeds will work, and testing the ones you will actually be planting would be a good strategy. Cress seeds should sprout very quickly, which makes them desirable for quick testing. The others listed above are also quick to germinate, and the plants are known to be relatively salt-sensitive, so they make good test candidates. Cucumber and radish seeds do not have a very heavy seed coat, so they are more likely to be sensitive to chemicals in the test. Tomato seeds are very resilient, so they are not particularly good as test seeds.