

Direct Application of Organic Materials

Solid Waste Management Fact Sheet No. 7

There may be an easier, simpler way to incorporate organic materials into garden soils than building a compost pile. Organic materials can be directly applied to garden soil and incorporated with a plow or tiller, allowing the decomposition or composting process to occur directly in the soil rather than in the compost pile. The autumn season, when a variety of organic materials are available in the form of prunings, leaves, garden refuse, and lawn renovation clippings, is an ideal time to do direct application of organic materials to garden soils.

Limitations of being able to directly apply materials to garden soil occurs from the inability to plow or till large quantities of organic materials into the soil at any one time. You will probably have to limit yourself to an application of no more than 5 to 6 inches of organic materials to the soil surface unless you have some large scale tilling equipment or commercial plow. A backyard garden tiller should be able to directly incorporate 4 to 5 inches of organic materials at one time into garden soil without a great deal of difficulty.

To directly apply organic material to garden soil, spread the materials over the surface of the soil at a depth of 4 to 6 inches, and go over the garden area with a roto-tiller or plow as deep as you can physically work the soil. This is best done in the early autumn season since it allows time for the natural decomposition of these organic materials to occur during the late fall and winter months, the soil will have a chance to compact and settle before spring planting season, and soil nutrients will not be "tied up" in the process.

Nutrient "Tie Up"

Large populations of microorganisms necessary to break down the organic materials require fertilizer elements to support the population. The source for these fertilizer elements will be the garden soil that the materials have been incorporated into. For a period of 1 to 2 months nutrient materials may be unavailable to plants but rather have been utilized by the microorganisms

instead. After the decomposition is complete, the organisms die and release the nutrients back into the soil, along with any additional nutrients contained in the organic material. For this reason, direct application of organic materials is best done in the autumn season so that the decomposition will be completed before planting time next spring. If direct applications of nutrients are made in the spring or summer season, additional fertilizer must be added to compensate for the nutrients that will be removed by the microorganism population.

If you have difficulty incorporating all of the organic materials at one time, allow the materials to stand for 1 to 2 weeks and repeat the tilling process. This will allow organic materials that have been covered and begun to decompose and break down, allowing for a more complete incorporation of organic materials that remain near the surface of the soil. It is also important that after the tillage process, the soil should be moistened, if this does not occur by natural rainfall to encourage a complete and rapid decomposition of the organic materials. However, be very careful not till or cultivate soil if it is excessively wet since this may create clods that will be difficult to break up and prepare a fine seed bed for later planting.

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