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Horticulture Facts

Leaf Disposal

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How do you and your community dispose of leaves? Do you dump, burn, or compost them? Or do you use them for mulch? Since July 1, 1990, leaves and other landscape and yard waste have been banned from Illinois landfills. Leaves should not present a serious problem, however, because there are a variety of uses for them.

Mulch

Leaves make an excellent mulch beneath trees, shrubs and other landscape plantings. Large trees growing in the forest naturally have a layer of decayed leaves and leaf mold beneath them. This organic layer is the home of many beneficial organisms such as earthworms and mycorrhizae. When native forest areas are disturbed and developed, the health and vigor of the remaining trees usually decline. This decline can often be traced to the removal of the natural ground litter, changes in soil moisture, soil compaction, increases in soil temperatures, and reduced root growth.

Compared to fresh green grass clippings, tree leaves that drop in the autumn are relatively dry and can be used as a mulch with little or no odor problems. Leaves collected in the fall with a lawn mower bagger will contain some grass clippings. This mixture of leaves and grass can also be used as a mulch without odor problems.

Composting

When placed in a pile in the presence of adequate moisture, biodegradable organic materials such as leaves will decompose. This decomposition occurs as microorganisms, mainly bacteria and fungi, use the organic material as a food source. Because the microorganisms are not 100% efficient and the unused chemical energy of the organic material is released as heat, the pile will self-heat. This process is called composting. Eventually the readily biodegradable organic materials are exhausted, decomposition slows down, and the pile cools.

Leaves are an excellent source material for compost. The microorganisms found on leaves are sufficient to start the compost process. Commercial inoculums are not necessary and therefore not recommended. The rate of leaf composting is dependent on leaf type, leaf surface area, moisture, oxygen, temperature, carbon:nitrogen ratio, size of the compost pile, and frequency of turning the pile.

Leaves from different tree species will decompose at different rates, but the end product is the same. Leathery leaves such as oak leaves contain more lignin and other woody substances and therefore take longer to decompose than fine-textured leaves. Leaf decomposition can be accelerated by increasing the surface area. Surface area can be increased by mowing the leaves while they are being collected or shredding them after collection. Leaves collected in a lawn mower bag will contain some grass clippings. Since they contain more nitrogen than the leaves, they will help to increase the rate of decomposition. Additional nitrogen will speed the rate of composting, but the composting process can complete itself without additional inorganic fertilizers.

Dry leaves will require moisture for composting. In early autumn, leaves will have a moisture content of 30 to 40%. Late season leaves will have less than 20% moisture. Leaf composting proceeds best with 40 to 60% moisture. It is a good idea to use a garden hose to wet leaves that are to be composted. Since fresh grass clippings contain 60 to 70% moisture, they can be mixed with leaves to provide moisture. If the compost pile begins to smell, it is an indication that it is too wet.

Oxygen is needed for aerobic decomposition to occur. If the oxygen supply is low, anaerobic decomposition will occur and the compost pile will begin to smell. This problem can be corrected by turning the pile to add more air.

As leaves decay they produce heat. To get good heating, a compost pile should be at least 3x3x3' (1 cubic yard) in size. Large piles will heat up and compost faster than small piles. The pile size should not exceed 8' in height or width, however this should not be a problem for homeowners. The heat of an active compost pile will peak at 140° to 150°F. When the temperature of the compost pile begins to decrease, it is time to turn the pile. Although turning will cool the pile, it will heat again. Ideally, the turning process should be repeated three to four times to get finished compost.

Turning of the compost pile is the composter's best management tool. As previously indicated, turning is important in controlling compost pile moisture content, oxygen content, temperature, and odor.

Uses of Leaf Compost

The best use of leaf compost is as a soil conditioner. It is an excellent organic soil amendment to improve the tilth of heavy clay soils or to improve the water-holding capacity of sandy soils. Leaf compost also contains a biological component (earthworms, beneficial insects, and microorganisms) that can enhance the productivity of garden soils.

It is recommended that leaf compost be added to flower beds and vegetable gardens. 50 lbs of leaf compost/ 100 sq ft of garden area will provide a fertilizer level capable of producing 120 bushels of com/acre.

Leaf compost can also be used as a substitute for peat moss when planting trees. Use about 1/3 leaf compost by volume in the backfill of in the planting hole. It is important to note that the pH of leaf compost is slightly alkaline with a pH of 7.0 to 7.3. This material should not be used as a soil amendment around acid-loving plants.

Leaf Burning

Leaf burning is a controversial environmental issue. People suffering respiratory ailments often find that the air pollution caused by burning leaves aggravates allergic and asthmatic symptoms and makes breathing difficult.

Many local governments prohibit leaf burning. Although no state laws prohibit leaf burning, in Illinois state restrictions on leaf burning do exist:

- Leaves may be burned only on the premises on which they are produced or at sites provided by and supervised by a local government.
- Local governments may prohibit the burning of leaves.
- Local governments may regulate burning by specifying times and/or weather conditions during which leaves may be burned.

Check with your local law enforcement agency or fire department before burning leaves.

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