



Missouri Environment & Garden

Recycling Autumn Leaves

by David Trinklein

There is something nostalgic about the sound and earthy smell of dry leaves rustling underfoot in the fall of the year. For many, it takes us back to our childhood when going outdoors in early autumn involved seeing who could build the largest mound of leaves. The process, of course, was followed by jumping into the middle of the piles and enjoying the soft landing provided by nature.

Those responsible for removing the leaves might not have viewed the annual ritual with quite the same enthusiasm. The fact is the removal of fallen leaves can be laborious and (at times) expensive. However, leaf disposal is necessary to maintain a healthy, attractive landscape.

Leaves allowed to accumulate over turfgrass and low ornamental plants can pack down and form a tight mat, particularly during the course of a wet winter. A thick layer of leaves can block sunlight from reaching turfgrass, thus reducing the ability of plants to manufacture food. Additionally, leaves also tend to trap and hold moisture in the plant leaf canopy, increasing the potential for disease outbreak.



One way to clear the lawn and recycle leaves is to mulch them into the turfgrass. On a dewy morning when the leaves are still damp, adjust your lawn mower to its highest setting and start mowing. By using a crisscross pattern and double-mowing, leaves often can be reduced to the size of confetti. The tiny pieces of leaves will gradually filter into the lawn and begin to decompose. The end result will

be the release of nutrients for use by the turfgrass. Research has demonstrated that a layer of leaves up to six inches in thickness can be mulched into the lawn with no ill effects.

Composting is another way to prevent damage from fallen leaves by turning them into a useful garden amendment. Compost is partially decomposed organic matter created by biological processes in which soil-inhabiting organisms break down plant tissue. Compost is very beneficial for soil improvement. It binds small

(clay) soil particles together making them larger. This “aggregation” of soil particles helps improve aeration, root penetration and water movement. When applied to sandy soils, compost can help retain moisture and nutrients.

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The soil organisms that breakdown carbon require nitrogen in the process. Most leaves are low in nitrogen and high in carbon. This combination makes their natural decomposition rather slow. Composting is a method of speeding natural decomposition under controlled conditions. The latter involves creating an environment that allow the compost to heat, and to provide addition nitrogen, when warranted.

The carbon-to-nitrogen ratio (C:N) of a material is an estimate of the relative amounts of these two elements it contains. In cases where the C:N ratio of the material being composted is wide (i.e., greater than 30:1), the additional of additional nitrogen will help greatly to hasten the composting process. Additional nitrogen can be added in the form of fertilizer or from organic materials high in nitrogen, such as manure or grass clippings. As a general rule, the C:N ratio of leaves ranges from about 35-85:1.

Constructing compost piles is a quick and effective way to turn autumn leaves into a useful garden product. If the leaves are chopped or shredded before composting, the process can be hastened even further. Other plant material can be added at the same time leaves are being composted. Specialized composting units or bins are available commercially. However, simple enclosures of wire, concrete blocks or treated lumber can be equally effective.

Composting Leaves

A backyard compost pile can be almost any size that is convenient for the space available. However, for best results, it should be no less than about 25 square feet in area at its base and three feet in height. As a rule, larger compost piles are better than smaller ones. Whatever the size, always locate a compost pile in an area that is well-drained.

After setting up the enclosure, start the pile with a layer of leaves or other plant material. The initial layer should be between six and eight inches in depth. Since nitrogen is needed by the organisms responsible for decomposition, add a nitrogen source on top of each layer of leaves. Approximately four pounds of actual nitrogen are needed for each bushel of packed or shredded leaves. This converts to about 10 ounces



of a pure nitrogen fertilizer such as urea, or two pounds of a general garden fertilizer such as 12-12-12.

Water each layer lightly as it is added. A properly constructed compost pile should feel damp to the touch, but not wet. It often is easier to moisten the dry material before adding it to the compost pile than to moisten the entire pile after it is constructed.

If manure is used as a nitrogen source, use a layer from one to two inches deep over each layer of leaves. Make certain the manure is from animals that have not been fed hay or forage treated with herbicides. Certain herbicides have the ability to pass through

the digestive tract of an animal and still retain enough activity to damage sensitive species such as tomato

Temperature is very important in the composting process. As soil organisms decompose the leaves, their body heat causes the temperature in the pile to rise dramatically. The center of a properly made compost pile should reach a temperature of 110 to 140 degrees F in four to five days. At this time, the pile begins "settling," which is a sign that the pile is working properly. When steeling starts to occur, the compost pile should be turned every few weeks until the leaves are thoroughly decomposed and are a uniform dark color. The process of turning mixes partially decomposed material back into the center of the pile while adding oxygen at the same time.

Since soil microbial activity is temperature-sensitive, leaves may not decompose completely in the fall before the arrival of cold weather. The process will resume again when the weather warms in spring. At that time, additional turning of the pile might be necessary.

In addition to mulching leaves into the lawn or turning them into compost, they also may be collected and used as a mulch to protect tender plants (e.g., azaleas and rhododendrons) in the landscape. The best leaves for this use are those that are very stiff and do not collapse (mat) during wet weather. Oak leaves are excellent for use as winter mulch. When used as mulch, leaves should be enclosed in a wire cylinder placed around the plant to keep them in place.

DECEMBER GARDENING CALENDAR

Gardening Calendar supplied by the staff of the William T. Kemper Center for Home Gardening located at the Missouri Botanical Garden in St. Louis, Missouri. (www.GardeningHelp.org)

Category	Week				Activity	
	1	2	3	4		
Houseplants	x	x	x	x	Water houseplants with tepid water. Cold tap water may shock plants.	
	x	x	x	x	Be sure newly purchased indoor plants are well protected for the trip home. Exposure to icy temperatures for even a few moments may cause injury.	
	x	x	x	x	Overwintering geraniums like bright light and cool temperatures. Keep soils on the dry side.	
	x	x	x	x	On cold nights, move houseplants back from icy windows to prevent chilling injury.	
			x	x	x	Holiday poinsettia plants do best with sun for at least half the day and night temperatures in the 50's or 60's. Keep plants away from drafts, registers and radiators and let the soil should dry only slightly between thorough waterings. Be sure to punch holes in decorative foil wraps to prevent soggy soil conditions.
	x	x	x	x	Hairspray works well to keep seed heads and dried flowers intact on wreaths and arrangements.	
	x	x	x	x	If you plan to have a live Christmas tree, dig the planting hole before the ground freezes. Mulch and cover the backfill soil and the planting hole to keep them dry and unfrozen. When you get the tree, store it outdoors in a cool, shady, windless area until the last minute and mulch the roots to prevent cold injury. Don't allow the tree's roots to become dry and spray the needles with an anti-transpirant to reduce moisture loss. Set the tree up in your coolest room. Don't keep the tree indoors for more than one week and plant outdoors promptly.	
	x	x	x	x	Be sure the root zones of azaleas and rhododendrons are thoroughly mulched. Any organic material will do, but mulches made from oak leaves, shredded oak bark, or pine needles are preferred.	
	x	x	x		Christmas trees hold needles longer if you make a clean, fresh cut at the base and always keep the trunk standing in water.	
	x	x	x		Only female holly trees bear the colorful berries. There must be a male tree growing nearby for pollination, if fruits are desired.	
	x	x	x		Hollies may be trimmed now and the prunings used in holiday decorations.	
	Miscellaneous	x				Apply mulches to bulbs, perennials and other small plants once the ground freezes.
x					All power equipment should be winterized before storage. Change the oil and lubricate moving parts. Either drain fuel systems or mix a gas stabilizing additive into the tank.	
x					Clean and oil all garden hand tools before storing for winter.	
x					If you feed rabbits corn or alfalfa, they may leave fruit tree bark unharmed.	