Transforming Leaves from Trash to Treasure

UPCOMING EVENTS

Kansas Turfgrass Conference in conjunction with KNLA
December 5, 6 & 7, 2017
Kansas Expocentre, Topeka

Mark the date to attend the Kansas Turfgrass Conference in conjunction with KNLA on December 5, 6 & 7 in Topeka.

The conference is an excellent way to learn about turf, nursery and landscape management, visit with old friends, network with new ones, and see all the latest equipment and supplies from local and national vendors.

The conference has been approved for Commercial pesticide recertification hours:
1 Core hour  3A - 8.5 hrs  3B - 10 hrs

International Society of Arboriculture CEUs and GCSAA education points will also be available by attending the conference.

Download a copy of the program, get exhibitor information, or register online
http://www.kansasturfgrassfoundation.com/annual-ktf-conference.html

ORNAMENTALS

Water Landscape Plants Before Winter

This has been a dry fall for much of Kansas. Watering now is important if soils are dry to help alleviate moisture stress.

A good, deep watering with moisture reaching at least a foot down into the soil is much better than several light sprinklings that just wet the top portions of the soil. A deep watering will help ensure that the majority of roots have access to water. Regardless of the watering method used, soil
should be wet at least 12 inches deep. Use a metal rod, wooden dowel, electric fence post or something similar to check depth. Dry soil is much harder to push through than wet.

Although all perennial plants benefit from moist soils before winter, it is especially important for newly planted trees and shrubs due to limited root systems. Even trees and shrubs planted within the last 2 to 3 years are more sensitive to drought than a well-established plant. Evergreens are also more at risk because moisture is lost from the foliage.

Trees or shrubs planted within the last year can be watered inexpensively with a 5-gallon bucket. Drill a small hole (1/8”) in the side of the bucket near the bottom. Fill the bucket and let the water dribble out slowly next to the tree. Refill the bucket once more, and you have applied 10 gallons. Very large transplanted trees and trees that were transplanted two to three years ago will require more water.

A perforated soaker hose is a good way to water a newly established bed or foundation plantings. However, soaker hoses are notorious for non-uniform watering. In other words, you often receive too much water from one part of the hose and not enough from another. Hooking both the beginning and the end of the soaker hose to a Y-adapter helps equalize the pressure and therefore provide a more uniform watering. The specific parts you need are shown in the photo above and include the soaker hose, Y-adapter and female to female connector. It is also helpful if the Y-adapter has shut off valves so the volume of flow can be controlled. Too high a flow rate can allow water to run off rather than soak in.

On larger trees, the soaker hose can circle the trunk at a distance within the dripline of the tree but at least ½ the distance to the dripline. The dripline of the tree is outermost reach of the branches. On smaller trees, you may circle the tree several times so that only soil which has tree roots will be watered.

If using a soaker hose, note the time watering was started. Check frequently to determine the amount of time it takes for water to reach 12 inches. From then on, you can water “by the clock.” Use a kitchen oven timer so you remember to move the hose or shut off the faucet. If you are seeing surface runoff, reduce the flow, or build a berm with at least a 4-foot diameter around the base of the tree to allow the water to percolate down through the soil, instead of spreading out. (Ward Upham)

FLOWERS

Winterizing Roses

Though most shrub roses are hardy in Kansas, other types of roses can be more tender. For example, the hybrid teas have certain species in their ancestry that originated in the warm climate of southern China. These roses need protection to reliably survive Kansas winters. Mound soil or compost about 8 to 10 inches high around each plant. If using soil,
bring it in from another part of the garden. Do not pull it from between plants because this can
damage the rose roots or make them more susceptible to cold.

Mounding is normally finished by Thanksgiving. After the ground has frozen, add a 4-inch mulch
of straw, leaves or hay for further protection. More soil may be spread on top of the mulch to keep
it in place. Do not add the mulch before the ground freezes or mice may invade and feed on the roses
over the winter. The purpose of these coverings is not only to moderate the cold, but also to prevent
warm days during the winter or early spring from stimulating growth that is tender to returning cold
weather. Excessively tall canes should be pruned to a height of 36 inches and tied together to
prevent them from being whipped by strong winter winds. Wind can damage the crown of the plant
or loosen the surrounding soil.

Next spring, remove coverings before new growth starts. If soil was used for mounding, remove
from the area so that the level of soil stays constant from year to year. Wait until after the ground
thaws, or the tops may begin growing before the roots can provide water. (Ward Upham)

**MISCELLANEOUS**

**Garden Soil Preparation — It’s Not Too Late**

Autumn is an excellent time to add organic materials and till

garden soils. Winter can still be a good time to take care of

this chore as long as the soil isn’t frozen. It is far wiser to till

now than to wait until spring when cold, wet conditions can

limit your ability to work soils easily. Working soil when it

is wet destroys soil structure and results in hard clods that

are very slow to break down. On the other hand, dry soil may

need to be watered so it can be more easily tilled. Be sure to

wait several days after watering to let soil moisture levels

moderate. You want the soil moist, not wet or dry, when

tilling.

There is a limit to how much organic material such as leaves can be added in one application.

Normally, a layer 2 inches deep is adequate with 5 to 6 inches being the maximum that can be added

at one time. Shredding the material before application encourages faster and more complete
decomposition due to increased surface area. Remember, soil preparation is an important key to a
successful garden. (Ward Upham)

**High pH Soils and What to Do With Them**

Though there are high pH soils in most parts of the state,
alkaline soils tend to be more common in the central and
western regions of Kansas. These high pH soils can cause
problems for plants by reducing the availability of certain
micronutrients. For example, most Kansas soils have more
than adequate amounts of iron. However, a high pH can make iron unavailable resulting in a condition known as iron chlorosis. Iron chlorosis reduces the health of plants by reducing photosynthesis. Lowering the pH of such soils will eliminate iron chlorosis.

Now would be a good time to have a soil test done to see if your pH is too high. If so, sulfur can be added either now or in the spring to lower the pH. Different textures of soil require different amounts. A sandy soil needs 1.0 to 1.5 pounds of sulfur per 100 square feet to reduce pH one point. A loam soil needs 1.5 - 2.0 pounds and clay needs 2.0 - 2.5 pounds to do the same. For example, if you wished to lower pH from 7.5 to 6.5 on a loam soil, you would need 1.5 - 2.0 pounds of sulfur per 100 square feet.

So, what pH do we shoot for? For most plants, a pH between 6.0 and 7.0 is preferred. Unfortunately, adding sulfur to lower pH is not as clear-cut a solution as we would like. Here are some other factors to keep in mind.

**Free calcium carbonate:** Some soils have free calcium carbonate, actual particles of limestone mixed in the soil. These "calcareous" soils normally have a pH of 7.3 to 8.5, with 8.2 to 8.3 being most common. In order for us to lower the pH with sulfur, all free calcium carbonate must be neutralized first. A recent soil test showed 6.7 percent free calcium carbonate. One pound of sulfur is needed to neutralize three pounds of calcium carbonate. Assuming 80 pounds for a cubic foot of soil, you would need about 1.75 pounds of sulfur per square foot just to neutralize the free lime. Additional sulfur would be needed to lower pH. Adding this much sulfur to a soil at one time is not recommended.

Not all high pH soils are calcareous. Perform this simple test to see if your soil contains appreciable amounts of free lime. Apply one drop of vinegar to dry soil. A vigorous fizz usually means the soil contains at least 3 percent calcium carbonate. A mild fizz suggests a calcium carbonate of between 1 and 2 percent and a fizz that can only be heard suggests the soil has a calcium carbonate content less than 1 percent.

How sulfur works: Elemental sulfur does not lower pH directly. It must first be oxidized to the sulfate form with the result being sulfuric acid. The sulfuric acid produces hydrogen, which acidifies the soil and lowers pH. The oxidation takes place primarily through microbial activity.

**Oxidation takes time:** Microbial oxidation of elemental sulfur takes time and depends on:
- number of sulfur oxidizing bacteria present
- temperature (75-104 degrees optimum)
- moisture content of soil (too wet or too dry will slow down process)
- size of sulfur particles (the smaller the better)

A single sulfur application normally takes at least 2 years for most the sulfur to react and form sulfuric acid. This, of course, depends on the above factors. So, what do you do about calcareous soils? See the companion article in this week’s newsletter for specific recommendations. (Ward Upham)
Iron Chlorosis and Calcareous Soils

Iron chlorosis due to high pH soils is a significant problem in Kansas. Though Kansas soils normally contain adequate amounts of iron, a high pH makes that iron unavailable to the plant. Iron plays a major role in the production of chlorophyll. Thus, a lack of iron reduces the amount of chlorophyll and results in yellowing of leaves. Iron chlorosis weakens, and in severe cases, may kill a susceptible plant.

A popular recommendation for high pH soils is adding sulfur to lower pH. This works well for many soils, but not those that are calcareous. Calcareous soils are those that contain actual particles of calcium carbonate (limestone). Calcareous soils can be difficult to practically impossible to acidify because the sulfur must neutralize all the free limestone before the pH is affected long term. In many cases you would need well over a pound of sulfur per square foot just to neutralize the free lime.

So, what do you do? That depends on the situation. With vegetable gardens and annual flowerbeds, work products into the soil during the time of year when there are no plants present. Oregon State University suggests mixing 5 pounds of sulfur per 100 square feet into the soil before planting. The idea is to form little pockets of acidity that result in enough iron availability for the plants during the year of application. Note that this must be done each year. Another possibility is to use iron chelates. Iron chelates hold the iron in such a way that the plant can get to it. However, not all iron chelates will work in high pH soils. For soils with a pH over 7.2, use a chelate that contains FeEDDHA (Ethylene diamine-N,N bis(2 hydroxyphenylacetic acid)). This can be found in the products Sequestar 6% Iron Chelate WDG, Sequestrene 138 and Millers FerriPlus. Chelates can either be mixed into the soil at planting or sprayed on the foliage early in the season. Reapply as needed. (Ward Upham)

Why Do Houseplants Lose Leaves After Being Brought Inside?

Newly bought houseplants or those brought in from outside often lose at least a portion of their leaves. In order to understand why this occurs, we need to look at how these plants are grown and what the plant needs to do to adapt to its new environment. Houseplants are normally produced either under shade outdoors in southern states or in greenhouses. Also, many homeowners move their houseplants outside during the summer. Regardless, the plants receive much more sunlight than they do in an indoor environment. Research done in Florida in the late 1970s revealed that tropical plants grown under high light conditions produce "sun leaves" while those grown under low light conditions have "shade leaves." These leaf types differ structurally in that sun leaves have less chlorophyll (the substance that plants use to convert sunlight to energy) and the chlorophyll that is present is located deeper inside the leaf. Sun leaves also tend to be thick, small and numerous while shade leaves are more thin, larger, and fewer in number. When plants are moved from one light condition to another they...
need time to adjust. This process is known as acclimatization. If they are forced to acclimatize too quickly, they will drop their sun leaves and produce a new set of shade leaves. If the acclimatization process is slower and less drastic, the plant can convert their sun leaves to the shade leaves that do better under low light. If going from shade to sun, this process is reversed.

Some houseplants are acclimatized before they are sold but many are not. So how do we help our new houseplants or those moved inside acclimatize to their new home environment? Houseplants should start out in an area of the home that receives plenty of light and then gradually moved to their permanent, darker location. This process should take 4 to 8 weeks depending on the degree of difference in light levels between the initial and final location of the plant. Remember, plants need to be acclimatized whether they are moved from a sunny location to one that receives less light or from shade to sun. Understanding plant processes allows us to anticipate potential problems. Acclimatization gives our houseplants a greater chance of retaining leaves and avoiding the stress of completely replacing them. (Ward Upham)

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