Video of the Week: Hotbeds and Coldframes

TURFGRASS

Lawn Calendar for Warm-Season Grasses

Warm-season grasses include bermudagrass, zoysiagrass and buffalograss.

March
Spot treat broadleaf weeds if necessary. Treat on a day that is 50 degrees F or warmer. Rain or irrigation within 24 hours of application will reduce effectiveness.

April
Apply crabgrass preventer between April 1 and April 15, or apply preventer when the eastern redbud is in full bloom. If using a product with Barricade, apply two weeks earlier. Crabgrass preventers need to be watered in before they will start to work.

May – August 15
Fertilize with 1 lb. of nitrogen per 1,000 square feet per application. Remember, more applications will give a deeper green color, but will increase mowing and lead to a buildup of thatch with bermudagrass and zoysiagrass.
   Bermudagrass – Use two to four applications.
   Zoysiagrass --- Use one to two applications. Too much nitrogen leads to thatch buildup.
   Buffalograss – Use one to two applications.
   One Application: Apply in June
   Two Applications: Apply May and July.
   Three Applications: Apply May, June and early August
   Four Applications: Apply May, June, July and early August

June
If grubs have been a problem in the past, apply a product containing Merit or Mach 2. Either product should be applied by mid July. Merit can be applied as early as mid May if there are problems with billbugs or May beetle grubs. Both of these are referred to as grub preventers. Actually, they kill the grubs when they are small but are called grub preventers because they kill the grubs before they cause damage. These insecticides are effective and safe. They must be watered in before they become active.

June is a good time to core aerate a warm-season lawn. Core aeration will help alleviate compaction, increase the rate of water infiltration, improve soil air exchange and help control thatch.

**Late-July through August**
If you see grub damage, apply a grub killer. If Merit or Mach 2 has been applied, this should not be necessary. Grub killers must be watered in immediately.

**Late October**
Spray for broadleaf weeds if they are a problem. Treat on a day that is at least 50 degrees F. Rain or irrigation within 24 hours reduces effectiveness.

Use the rates listed on the label for all products mentioned. (WU)

---

**FRUIT**

**Multiple Grafts on Apple Trees**

Nurseries often sell apple trees that bear more than one variety of fruit. The secret is grafting. All apple trees are grafted, which is done by grafting the apple-producing variety (the scion) on a variety chosen for its dwarfing effects (the rootstock). A tree with more than one variety simply has more than one fruiting variety grafted onto a single rootstock. Grafting allows growers to have a single tree that could produce Jonathan, Red Delicious and Golden Delicious apples. These trees can be a unique attraction and a good conversation point in a fruit garden. If space is limited, a multiple grafted tree may allow growers to have a greater variety of fruit than with individual varieties on separate trees. But there are possible drawbacks. Whoever prunes the trees may not recognize the individual grafts and may unknowingly prune off one of the varieties. Also, varieties may vary in vigor, and stronger varieties can crowd weaker ones. There also may be a difference in susceptibility to disease among varieties and among different kinds of fruit. Some may have resistance to a disease and not require protection, but others are susceptible and do require protection. If the susceptible fruits are protected, the more resistant ones will be sprayed unnecessarily. (WU)

**Blueberries in Containers**
There has been increasing interest recently in growing blueberries in containers. The varieties chosen for this are usually half-high plants that are the result of a cross between highbush and lowbush blueberry species. Such plants can be as small as 18 inches high and wide (Top Hat) but are more commonly larger. Though this can be successful there are several things to keep in mind.

**Acid soil pH:** Blueberries need an acid pH between 4.8 and 5.2. Sphagnum peat moss is very acid and is often used in large quantities in soil mixes for acid-loving plants. As a matter of fact, blueberries can be grown in peat moss alone if nutrients are provided. But I would suggest using a 50/50 mix of peat moss and potting soil. This will provide nutrients as well as some weight so the plant is less likely to blow over in wind.

**Container size:** Though containers as small as 2 gallons can be used on half-high blueberries, a larger container would be advised as they will be more stable in the wind and provide a larger moisture reserve during hot, dry weather.

**Watering:** Blueberries do not have root hairs and therefore are not very efficient in picking up water. Potting soil needs to be kept moist.

**Winter care:** Though the growth of these plants is winter hardy, the roots are not. Either move the pots into an unheated, attached garage or bury the pot in the soil or with mulch in early November. Periodic watering during the winter will be needed.

**Varieties:** Though blueberries will produce some fruit if only a single variety is grown, two varieties will increase the potential fruit crop. Suggested varieties would include Top Hat and Northsky. Each should reach about 18" high though Northsky will likely grow wider than Top Hat. Northblue is another possible choice that should produce more fruit than either Top Hat or Northsky but would reach 2 to 3 feet in height. Finally, North Country is intermediate in size at 18 to 24 inches high and also would be intermediate in the amount of fruit produced.

**Wind protection:** Wind protection will decrease the amount of water these plants need and reduce the chances of leaf scorch.

**Exposure:** Blueberries do best with a minimum of 6 to 8 hours of sunlight a day. Try a northern or eastern exposure. (WU)

**ORNAMENTALS**

Correcting Iron Chlorosis in Trees
Iron chlorosis is a common problem in Kansas because of the high pH in some soils. Though these soils normally contain adequate amounts of iron, the high pH ties up iron so that it is unavailable to plants. Classic symptoms of iron chlorosis are yellow leaves with a network of dark green veins. In severe cases the entire leaf turns yellow and the edges of the leaf scorch and turn brown. Plants may eventually die in such cases.

One of the best methods of avoiding iron chlorosis is by planting tolerant trees. Trees that are susceptible to iron chlorosis include pin oak, sweetgum, and dawn redwood. Moderately tolerant trees are ash, cottonwood, linden, elm, hawthorn, most oaks and ginkgo. Even closely related trees can differ markedly in their resistance. For example, pin oak is notorious for sensitivity to iron chlorosis while most other oaks are moderately tolerant. Also, red, silver and Amur maples are susceptible, but Norway maples are much less so. There are several methods used to correct iron chlorosis in trees. Not all methods work in all situations. The following are the most common.

Soil treatment: The idea is to acidify a small quantity of soil so that the tree can absorb the iron it needs from these areas. This will only work on non-calcereous soils (see companion article). A mixture of equal parts of iron sulfate and elemental sulfur are mixed together, and the mixture is placed in holes made under the dripline of the tree. Holes should be 1 to 2 inches in diameter and 12 to 18 inches deep. Space them 18 to 24 inches apart. Each hole should be filled with the iron sulfate-elemental sulfur mixture to within 4 inches of the soil surface. This method is labor intensive and results are sometimes variable.

Iron chelates can also be used as a soil treatment. The only chelate that is effective above a soil pH of 7.2 is Iron EDDHA. It can be found in the products Sequestar 6% Iron Chelate WDG, Sequestrene 138 and Millers FerriPlus. Use these products in the spring before growth starts. Dry chelate can be sprinkled on the soil and watered in or dissolved in water and applied as a drench under the dripline of the tree. Normally, soil-applied chelates last only one year.

Foliar treatment: Leaves are sprayed directly with iron chelates or iron sulfate early in the season. Response is quick, but leaf burning is possible. Response can be spotty and temporary. Repeat applications may be needed.

Trunk injection or implantation: In this method, holes are drilled in the lower trunk and ferric ammonium citrate (iron citrate) or ferrous sulfate is introduced through the holes. There are both liquid and dry formulations. Methods of application include capsules (Mauget), caps (Medicaps), and a system that feeds liquid material via tubes and tees (Nutri-Booster). Though results can be variable, this method usually has the greatest chance of success. Successful applications often last several years. The preferred time of application is during the spring just after the leaves have fully expanded. Use a brad-point drill bit to minimize tree wounding. Research has shown the uptake is enhanced if the holes are drilled in the root flares near the soil surface. (WU)
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 reduce pH. This works well for many soils. But some soils 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. In many cases you would need well over a pound of sulfur per square foot just to neutralize the free lime.

How do you know if you have a calcareous soil? Add a drop or two of household vinegar to a sample of dry soil and see if it fizzes. If it fizzes vigorously, you have 3 percent calcium carbonate or more. A mild fizz suggests between 1 and 3 percent, and a fizz that is heard but not seen suggests something less than 1 percent. You may also send a soil sample to the Soil Testing Lab here at K-State and ask them to test for free calcium carbonate. This test is expensive ($20) but will give a very precise percentage. Take the sample to your local K-State Research and Extension office, and they will forward it into the university. If you do not know where the office is located, go to: http://www.ksre.ksu.edu/Map.aspx

For information on how to take a soil test in a vegetable garden, go to: http://www.ksre.ksu.edu/library/hort2/mf2320.pdf

So what do you do? That depends on the situation. In vegetable gardens and annual flowerbeds, products can be worked into the soil 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 so that enough iron is available 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 above 7.2, use a chelate that contains FeEDDHA) iron ethylenediamine-diohydroxyphenylacetate). 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.

(WU)

Contributors:
Ward Upham, Extension Associate
To view Upcoming Events: [http://tinyurl.com/fswqe](http://tinyurl.com/fswqe)

**Horticulture 2011  E-mail Subscription**

For questions or further information contact: [Hort WebMeister](mailto:HortWebMeister).  

Brand names appearing in this publication are for product identification purposes only. No endorsement is intended, nor is criticism implied of similar products not mentioned.

“Knowledge for Life”

Kansas State University Agricultural Experiment Station and Cooperative Extension Service