Horticulture 2013 Newsletter  
No. 8  February 26, 2013

Video of the Week:  
Coldframes and Hotbeds

TURFGRASS

Lawn Calendar for Warm-Season Grasses

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 must 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. More applications will give a deeper green color, but will increase mowing and lead to thatch buildup 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 imidacloprid by mid July. Imidacloprid can be applied as early as mid May if there are problems with billbugs or May beetle grubs. These products kill the grubs before they cause damage. They are effective and safe but 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 Imidacloprid 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. (Ward Upham)

**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.

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. Several methods are 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 the tree can absorb the iron it needs from these areas. This will only work on non-calcareous soils. 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 can vary. 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. 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. (Ward Upham)

### MISCELLANEOUS

**Don’t Work Soil Too Wet**

We have gone from very dry conditions earlier in the winter to many areas being quite moist due to winter storms. Resist the temptation to work any soil if it is wet. Doing so destroys the structure of the soil resulting in clods that may not break down all summer. To determine if a soil is too wet to work, grab a handful and squeeze. If water comes out, it is much too wet. Even if no water drips out, it still may not be dry enough to work. Push a finger into the soil you squeezed. If it crumbles, it is dry enough, but if your finger just leaves an indentation, more time is needed. Be sure to take your handfuls of soil from the depth you plan to work the soil because deeper soils may contain more moisture than the surface.

If tree planting is in your future, you may want to work the soil as soon as it is dry enough to work. You may then protect that area from becoming too wet by covering with a tarp if rain is forecast near the planting date. (Ward Upham)
Uses of Coldframes
These mini-greenhouses can be useful for serious gardeners. Though often used for hardening off seedlings, they can also be helpful in extending the growing season in the fall for cool-season vegetables such as lettuce, kale, green onions, and radishes. You may also want to start pansies in the fall, overwinter them in the cold frame, and set out large plants that give immediate color in the spring.

Cold frames also can be used to overwinter nursery plants or give the cold treatment needed to force bulbs. In these last two cases, the cold frame is covered with a tarp or something similar late in the fall just before the ground freezes so that the temperature hovers just above freezing. During the summer, you can remove the top and use the structure as a nursery.

Basic Design of Coldframes and Hotbeds
The structure of both cold frames and hotbeds is the same. Basically it's a box covered with glass, plastic or clear fiberglass. The box size varies but is often 5 to 6 feet deep and 6 to 12 feet wide. Height also varies but is often about 18 inches in the back and 12 inches in the front. The slope should face south so that rays from the winter sun can be captured more easily. The only difference between a cold frame and a hotbed is that hotbeds contain a heat source. In the early part of last century, that heat source was often 12 to 24 inches of fresh, straw-laced horse manure placed in a pit under the structure. Today, electric heating cables are often used. Hotbeds are more versatile than cold frames and allow young, tender plants to be started earlier in the year.

Cold frames and hotbeds used to require almost constant attention. Venting is absolutely necessary on bright, sunshiny days, even if the outside temperature is relatively cool. If the frames are not vented in a timely manner, the plants can easily overheat. Venting is normally done by having the clear covering (glass, fiberglass, or plastic) fastened to a frame that is attached to the box portion of the structure with hinges. This sash is propped open to let excess heat escape when temperatures demand. Though sashes can be propped open by hand, today automatic ventilators are available that use a temperature-sensitive compressed gas to open sashes. These do not require an external power source and can be set to open at different temperatures. Cold frames and hotbeds can be purchased, or you may want to build your own. Plans for constructing either structure can be found at:
http://extension.missouri.edu/explorepdf/agguides/hort/g06965.pdf  (Ward Upham)
VEGETABLES

Heirloom Tomato Study

Tom Fowler, with the University of Missouri Extension Service, did a study on heirloom tomato varieties last summer and shared the results with us. The total number of tomatoes for the year, total weight and average ounces per fruit are listed below.

<table>
<thead>
<tr>
<th>Variety</th>
<th>No.</th>
<th>Weight (lbs)</th>
<th>Oz/Fruit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boxcar Willie</td>
<td>89</td>
<td>29.80</td>
<td>5.36</td>
</tr>
<tr>
<td>German Johnson</td>
<td>94</td>
<td>72.60</td>
<td>12.36</td>
</tr>
<tr>
<td>Aunt Ruby</td>
<td>65</td>
<td>47.40</td>
<td>11.67</td>
</tr>
<tr>
<td>Big Red</td>
<td>7</td>
<td>6.20</td>
<td>14.17</td>
</tr>
<tr>
<td>Prudence Purple</td>
<td>95</td>
<td>62.20</td>
<td>10.48</td>
</tr>
<tr>
<td>Beef Steak</td>
<td>185</td>
<td>82.60</td>
<td>7.14</td>
</tr>
<tr>
<td>Big Rainbow</td>
<td>138</td>
<td>98.60</td>
<td>11.43</td>
</tr>
<tr>
<td>Roma</td>
<td>386</td>
<td>38.80</td>
<td>1.61</td>
</tr>
<tr>
<td>Mortgage Lifter</td>
<td>83</td>
<td>74.80</td>
<td>14.42</td>
</tr>
<tr>
<td>Abe Lincoln</td>
<td>233</td>
<td>135.00</td>
<td>9.27</td>
</tr>
</tbody>
</table>

This is one year’s data so take it with a grain of salt but note Abe Lincoln. Most heirlooms are not even close to yielding what a good hybrid does but Abe Lincoln is right in there. Also the average weight of an individual Abe Lincoln tomato is more than any of the hybrids Tom evaluated. Many of the heirlooms produce larger tomatoes than Abe Lincoln but not the hybrids. So why wouldn’t Abe Lincoln make it as a commercial variety? It is too soft and won’t ship. However, it would be a great tomato for homeowners if they can keep it healthy. These old heirlooms often have poor disease resistance, especially to the wilt diseases such as Verticillium and Fusarium wilt. Sources for seed can be found at [http://www.hfrr.ksu.edu/doc3643.ashx](http://www.hfrr.ksu.edu/doc3643.ashx) (Ward Upham)

Contributors: Ward Upham, Extension Associate

To view Upcoming Events: [http://tinyurl.com/fswqe](http://tinyurl.com/fswqe)

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