FRUIT

Cloning Apple Trees

We occasionally receive calls from gardeners who want to know how to treat an apple seed so it will germinate. Usually, the gardener is trying to reproduce an old apple tree that was special for some reason (good quality fruit, planted by grandparents, etc.) Unfortunately, apples grown from seed will not be like the parent. About 1 in every 80,000 apple trees grown from seed will be as good as the apples we are used to eating. Usually you end up with a tree that has small and inferior quality fruit. If you want a tree exactly like the parent, you must propagate that tree vegetatively. In the case of apples, this usually means grafting. Apple trees are actually quite easy to graft, even for novices. Don't be afraid to try this even if you haven't done it before. The step that needs to be done at this time of year is the choosing and cutting of scion wood or small branches that will be grafted on top of a rootstock. However, if you don’t have an existing tree to graft onto, you will need to plant a rootstock this year for grafting onto next.

Fruit trees are normally grafted (or budded) onto specially selected rootstocks. These rootstocks normally reduce tree size. For example, a tree that normally would get 25 feet tall will only reach 10 feet if it is grown on a certain rootstock. Dwarfing rootstocks also allow apples to fruit earlier.

A tree on its own roots normally takes 5 to 7 years before it will bear. Semi-dwarf trees bear in 4 to 5 years, and dwarf trees bear in 3 to 4 years. Unfortunately, dwarfing rootstocks are not well adapted to Kansas. Semi-dwarf trees usually are a better choice for us. Note that rootstock reduces tree size, not fruit size. Therefore, a Golden Delicious tree that only reaches 8 feet tall due to a dwarfing rootstock, will bear the same size fruit as a Golden Delicious tree that is 25 feet tall.

Most nurseries only sell trees that are already grafted. A company that does sell rootstocks is
Another is Cummins Nursery, (865) 233-3539, http://www.cumminsnursery.com/rootstocks.htm though there is a surcharge on any tree that you order less than four rootstocks. If anyone knows of other nurseries that sell rootstocks, let me know, and I will post them in upcoming newsletters. It is also possible to buy a tree from a local nursery and graft your clone into it. One disadvantage of this method is that it is possible to prune off the special clone instead of the cultivar branches by mistake.

Following is the procedure for collecting scion wood.

The ideal branches for scion wood will be from about 1/4 to ½ inch in diameter. Good propagation wood can be made of water sprouts that grew from limbs in the tree or suckers that grew from the trunk. Water sprouts are those small branches that grow straight up from larger, more horizontal branches. If you use suckers, be sure the suckers are growing from above the graft at the base of the tree. This propagation wood is normally taken during February. These can be cut in lengths up to about a foot long. They can be stored in your refrigerator at about 40 to 45 degrees F. Do not freeze. The next step is to decide what rootstock or existing tree you will graft them onto.

This information does not include the grafting or budding details or subsequent care. The Missouri Extension Service has an excellent publication, titled "Grafting," which can be found at http://muextension.missouri.edu/xplor/agguides/hort/g06971.htm (WU)

**Fruit Trees May Be Pruned Now**

This time of year is a good time to think about pruning fruit trees. The pruning can be done in February or March. Pruning when temperatures are below 20 degrees F is not advisable due to possible injury. It is important to prune before dormant sprays are applied to avoid pruning out sprayed wood and discarding it. Also, you are more likely to get total coverage of limbs, branches and shoots after you have pruned. Prune older trees first because older, larger wood tolerates lower temperatures than young trees with small diameter wood. (WU)
Winter Hardiness of Fruit Plants

Extremely cold temperatures may damage fruit plants. Peach trees often have fruit bud damage when temperatures reach 5 to 10 degrees below zero. The tree will be fine as the leaf buds are undamaged.

Note that damage to fruit buds is progressive. In other words, a temperature of minus 10 for a short period will cause less damage than a sustained reading of 10 below zero. Also, the buds will show progressively more damage the further below minus 10 degrees the temperature reaches.

Blackberries also can be damaged at 5 to 10 degrees below zero but this is variety dependent as some of the newer thornless varieties are harder. With blackberries, we are not worried about the fruit buds but the fruiting canes. Cold temperatures can kill all aboveground growth. However, the plant will survive and grow new canes from the crown that will fruit next year.

Apples are hardier, and fruit buds are usually not damaged unless the temperature reaches minus 20 to minus 25 degrees. Red Delicious is one of our most tender varieties and can be damaged when temperatures reach minus 15.

Sometimes cold temperatures are accompanied by high winds, which may have you wondering about wind chill damage to fruit plants. Wind chills can have a profound effect on warm-blooded animals' ability to keep warm. Plants do not respond to wind chill indexes the same as warm-blooded animals because they do not need to maintain a temperature above that of their surroundings. For example, a wind chill of 40 degrees below zero at a temperature of zero degrees Fahrenheit will not cause any more cold injury to plant tissue than a wind chill index of 20 degrees below zero at zero degrees Fahrenheit. Although cold temperatures may not damage plants, wind can desiccate (dry out) plant tissues. Plant tissues require moisture to survive, and high wind velocity can cause moisture loss. This desiccation may be great enough to injure or even kill tissue, particularly the smaller size wood as in peach twigs, apple spurs or blackberry canes. There is no scientific evidence to show that an increasing wind chill index will directly increase plant damage due to cold injury. (WU)

Pawpaw Trees: A Native Fruit

Even though pawpaw is native to eastern Kansas, many people in the state have never eaten one. Fruits resemble fat bananas and are generally up to 6 inches long and as much as 3 inches wide. The taste is unique and is difficult to describe but is often said to resemble bananas or pineapple and has a texture
somewhat like custard. They are rarely grown commercially because they are difficult to ship. Ripe fruit will only hold 2 to 3 days at room temperature and up to a week under refrigeration.

Pawpaw prefers a well-drained, moderately acid (pH 5.5 to 7.0), moist soil and high organic matter content. Organic mulch is also recommended. Irrigation will be helpful to necessary depending on what part of Kansas they are grown.

In the wild, the pawpaw is an understory tree and may do better with partial shade, especially during the first 2 to 3 years. Protection from high winds is also advisable due to the large leaves.

The pawpaw is a small tree that may reach 20 feet high but is less broad. Trees require cross-pollination and so at least 2 and preferably 3 different varieties should be grown. These trees are pollinated by insects other than bees and must be planted close together. Trees should be no further than 30 feet apart in order to insure good pollination.

The soil for planting should be prepared in advance of receiving the trees. Amend the soil with organic matter in the area where the trees will be planted. Do not amend just the soil from the planting hole especially if the soil is heavy and has high clay content. If you do, you have essentially made a pot for the tree that will hold water and may drown the tree. Rather add organic matter to the area in which the tree will be planted before digging the planting hole; at least a 10- by 10-foot square. You may want to treat the entire area where your trees will be planted. Add 2 inches of organic matter to the surface of the soil and then till in. In heavy soils, it may also be helpful to construct berms before planting. A berm is simply an area that is slightly higher than the surrounding soil so water drains well.

The planting hole should be the same depth as the root system but 2 to 3 times as wide. Pawpaws have fleshy roots and are better planted in the spring (April) rather than fall unless container grown. Container-grown plants can be planted virtually anytime.

Keep newly planted trees well watered. The soil should be moist but not waterlogged. Keep the planting area completely free of weeds or any other type of vegetation within 3 feet of the trees. Mulching is recommended.

There has been a significant amount of work done on pawpaw by Kentucky State University. You can reach their pawpaw site at http://www.pawpaw.kysu.edu/

Information on growing pawpaws is available from Peterson Pawpaws at http://www.petersonpawpaws.com Neil Peterson’s pawpaws are the result of 25 years of research and have been widely tested.

The Kansas Forest Service (www.kansasforests.org) has seedling trees available for sale though I would recommend getting named varieties instead if you wish to plant only a few trees. The fruit from named varieties will be of a higher quality than that from a seedling tree.

Named variety pawpaws are available from Stark Brothers (www.starkbros.com) and Raintree
Nursery ([www.raintreenursery.com](http://www.raintreenursery.com)) including some of the Peterson varieties.

The University of Missouri has a couple of different pawpaw cultivar trials. You can find results from one of these trials at [http://www.centerforagroforestry.org/pubs/pawpaws.pdf](http://www.centerforagroforestry.org/pubs/pawpaws.pdf) (WU)

### VEGETABLES

**Preventing Potatoes from Sprouting in Storage**

Home gardeners have had to rely on proper storage conditions (cool and moist) to prevent potatoes from sprouting. But sprouting will eventually occur even if the gardener does everything right. Research by Mary Jo Frazier, Nora Olsen and Gale Kleinkopf from the University of Idaho have found products that should help home gardeners.

These researchers were looking for an organic method to control potato sprouts. They found essential oils from some herbs and spices to be effective sprout inhibitors. Specifically they found that spearmint oil, peppermint oil and clove oil suppressed sprouting by physically damaging rapidly dividing cells in the sprout. Each of these products is so safe that the FDA has approved them for addition to food.

Several application methods were considered though most were only suitable for commercial storage facilities. The only practical method for homeowners was one the researchers labeled a “low-tech” wick method. This was accomplished by placing a small piece of blotter paper saturated with spearmint or peppermint oil in a box with the potatoes. This method was not recommended for the clove oil. Though it was found that peppermint and spearmint oils were equally effective in suppressing sprouts, the peppermint oil was less likely to affect flavor of the potatoes. Reapplication at two- to three-week intervals will be needed for continued sprout suppression. Little to no residue was found on the potatoes from these products due to their high volatility. The first application should be done before sprouting occurs.

Blotting paper is much more difficult to find than it was in the past and so you may want to substitute blank newsprint. However, if blotting paper is desired, try herbarium supply houses. Blotting paper is used to press plant specimens. (WU)
**MISCELLANEOUS**

**New Pecan Blog**

Dr. William Reid, Pecan Research and Extension Specialist for Kansas and Missouri, has a new blog on growing pecans in Kansas and neighboring states. The blog is titled “Northern Pecans.”

There are already six posts for 2011 including an update on the pecan breeding project, how to check scion wood for winter injury, shipping out pecans, Jayhawk’s kernel defect, thinning pecan trees and the 2010 pecan harvest. An additional 24 posts were made in 2010.

Anyone interested in growing pecans would find this blog helpful. The URL is [http://northernpecans.blogspot.com/](http://northernpecans.blogspot.com/) (WU)

**Firewood**

Not all firewood is created equal. Some species of trees are able to produce much more heat per cord of wood. A cord is the amount of wood in a well-stacked woodpile measuring 4 feet wide by 8 feet long by 4 feet high. Following are heat values (in million BTU’s) per cord for various species of tree. The higher the value, the better the wood.

<table>
<thead>
<tr>
<th>Tree Type</th>
<th>Heat Value</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ash, Green</td>
<td>22.8</td>
<td></td>
</tr>
<tr>
<td>Cottonwood</td>
<td>15.9</td>
<td></td>
</tr>
<tr>
<td>Elm, American</td>
<td>19.8</td>
<td>Difficult to split</td>
</tr>
<tr>
<td>Elm, Siberian</td>
<td>20.9</td>
<td>Difficult to split</td>
</tr>
<tr>
<td>Hackberry</td>
<td>21.0</td>
<td></td>
</tr>
<tr>
<td>Honeylocust</td>
<td>25.6</td>
<td></td>
</tr>
<tr>
<td>Locust, Black</td>
<td>28.3</td>
<td>Difficult to split</td>
</tr>
<tr>
<td>Maple, Sugar</td>
<td>24.0</td>
<td></td>
</tr>
<tr>
<td>Maple, Silver</td>
<td>18.9</td>
<td></td>
</tr>
<tr>
<td>Mulberry</td>
<td>25.3</td>
<td></td>
</tr>
<tr>
<td>Oak, Red</td>
<td>24.0</td>
<td></td>
</tr>
<tr>
<td>Oak, Bur</td>
<td>24.9</td>
<td></td>
</tr>
<tr>
<td>Oak, Post</td>
<td>25.6</td>
<td></td>
</tr>
<tr>
<td>Osage Orange (Hedge)</td>
<td>32.6</td>
<td>Sparks, do not use in open fireplace</td>
</tr>
<tr>
<td>Sycamore</td>
<td>19.5</td>
<td>Difficult to split</td>
</tr>
<tr>
<td>Walnut, Black</td>
<td>21.8</td>
<td></td>
</tr>
</tbody>
</table>
The Kansas Forest Service has a publication titled “Managing Your Woodland for Firewood” that is quite helpful. (WU)

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