Starting Tomatoes Early

If you would like to have your tomato plants produce earlier in the year, there are certain things to keep in mind. Most people who try to get a jump on the season set their tomatoes out early and hope they do well. However, that is often not a good plan, as tomatoes have to have certain requirements before they will grow well. Those requirements are an acceptable soil temperature for root growth and an acceptable air temperature for both plant growth and fruit set.

**Root Growth:** Tomatoes need a soil temperature of at least 55 degrees to do well. Plastic mulch is most commonly used to warm the soil. Several days may be needed to raise the soil temperature. Check the soil temperature 2.5 inches deep in the soil at about 11:00 a.m. You may wish to lay a drip irrigation line before installing the plastic to make watering more convenient. See accompanying article on laying plastic mulch.

**Air Temperature:** Plants must be protected from frost. Hot caps or water teepees are placed over the young plants to provide protection as well as a higher average temperature to encourage growth. Eventually the plants will outgrow the cover and start to develop flowers. But if the temperature goes below 55 degrees at night, tomato flowers may not set. The plant is not hurt, but the blossom will not set fruit or, if it does set fruit, the fruit is often misshapen.

How early can you transplant? Start with a date about 2 weeks earlier than normal. (Ward Upham)
FRUIT

Planting Fruit Trees

Fruit trees and many small fruit plants are usually sold bareroot, and it is vital that roots never dry out before planting. When plants arrive from the nursery, open the bundles immediately and check for moisture. If the roots are not moist, they should be soaked in water for six to 12 hours before planting. Packages with moist roots can be repacked and placed in a cool, sheltered area if the trees will be planted in a day or two. If wet soils will prevent planting for several days, plants should be heeled in. To do this, dig a trench in a sheltered, well-drained area out of the sun. The north side of a building often works well. Lay the plants so the roots are in the trench, and then place soil over the roots. Firm the soil and add water if the soil isn't already quite moist. You should not leave plants heeled in for more than two to three weeks.

Plants can be placed in a bucket of water, as planting holes are prepared. Make the planting hole wide enough to accommodate roots without twirling them inside the hole. If there is an especially long root, cut it to fit. Twirling long roots inside the hole may eventually girdle the tree. Add organic matter to the area around the planting hole. The treated area should be about 8 feet across. In heavy soil, adding amendments to just the planting hole creates a "pot" effect that can fill with water and drown your new tree. Covering an 8-foot area avoids this problem.

Planting depth is important. Make sure the graft union is between 2 and 3 inches above the soil surface after the tree is fully in place. If the graft union is below the surface, the tree may develop scion roots and any dwarfing effect is lost. Water plants in immediately to eliminate air pockets and ensure there is plenty of water for root uptake. Do not fertilize. (Ward Upham)

Prune Fruit Trees Now

If you haven’t pruned your fruit trees, now is the time. Following are some general recommendations on pruning mature fruit trees followed by more specific instructions on each species. If you have young fruit trees, see the accompanying article in this newsletter.

General Recommendations
- Take out broken, damaged or diseased branches.
- If two branches form a narrow angle, prune one out. Narrow angles are weak angles and tend to break during wind or ice storms.
- Take out all suckers. Suckers are branches that grow straight up. They may originate from the trunk or from major branches.
- If two branches cross and rub against one another, one should be taken out.
- Cut back or remove branches that are so low they interfere with harvest or pruning. If cutting back a branch, always cut back to another branch or a bud. Do not leave a stub.
- Thin branches on the interior of the tree.

Follow the steps above in order but stop if you reach 30% of the tree. For a short video on pruning, see [http://www.hfrr.ksu.edu/p.aspx?tabid=980&cat=Fruit&itemid=64&cmd=view#64](http://www.hfrr.ksu.edu/p.aspx?tabid=980&cat=Fruit&itemid=64&cmd=view#64)

**Specific Instructions**

**Peach and Nectarine:** Peach requires more pruning than any other fruit tree because it bears fruit on growth from the previous year. Not pruning results in fruit being borne further and further from the center of the tree allowing a heavy fruit crop to break major branches due to the weight of the fruit. Prune long branches back to a shorter side branch.

**Apple:** Apples tend to become overgrown if not pruned regularly. Wind storms and ice storms are then more likely to cause damage. Also, trees that are not pruned often become biennial bearers. In other words, they bear a huge crop one year and none the next. Biennial bearing is caused by too many fruit on the tree. Though pruning helps, fruit often needs to be thinned as well. The goal is an apple about every 4 inches. Spacing can vary as long as the average is about every 4 inches.

**Cherry, Pear, Plum:** Light pruning is usually all that is needed. (Ward Upham)

**Pruning Young Fruit Trees**

Young fruit trees should be pruned to begin developing a strong structure of the main or scaffold limbs. This will help prevent limb breakage over the years when the scaffolds carry a heavy fruit load. Apple, apricot, cherry, plum and pear trees generally are trained using the central leader system. The growth pattern for these trees is for a center branch to be dominant and to grow straight up.

Peach and nectarine trees are normally pruned using the open center method because they do not have a strong tendency for one shoot or branch to dominate the growth of other shoots or branches. In this system, the tree is pruned to a vase-like pattern with no central leader.
Regardless of the system used, the three to four scaffold branches should:

• Be no lower than 18 inches from the ground. This makes it easier to prune and harvest the tree once it matures.
• Form wide angles (about 60 to 80 degrees) with the trunk. Wide angles are much stronger than narrow angles and are less likely to break under wind or ice loads.
• Be distributed on different sides of the tree for good balance.
• Be spaced about 6 to 10 inches apart on the trunk with no branch directly opposite or below another. (Ward Upham)

**MISCELLANEOUS**

**Applying Organic Matter in the Spring**

Organic matter improves just about any soil. It acts as a sponge in sandy soils and helps hold water and nutrients. In clay soils, it builds structure, increases friability, increases aeration and improves the water infiltration rate.

We normally encourage gardeners to add organic matter in the fall because of increased availability of many sources of organic matter and the option of adding organic material that is not fully decomposed. Adding organic matter in the spring is fine, but needs to be done more carefully. Be sure any material you use will not burn plants. For example, rotten silage may not have broken down enough over the winter and may release fumes that burn plants. If you can detect an ammonia odor from any material, it is too fresh to use. Good sources of organic matter for spring use would include peat moss, finished compost and well-rotted leaf mold.

The next question is how much to add? The short answer is to add 2 inches of low nitrogen materials such as peat moss or leaf mold to the surface of the soil, and then till as deeply as possible. If using compost or other nutrient rich material, add only one-half inch to the surface before tilling. Too much fertility can result in plants that produce lots of foliage but little fruit.

Actually, it might be helpful to till as deeply as possible before adding the organic material, add the organic matter, and then till again. This gives a couple of extra inches of prepared soil. Just be sure not to till too much. If the soil ends up looking like flour, the structure of the soil has been destroyed. A well-prepared soil should have peds (particles) about the size of grape nuts or a bit larger. (Ward Upham)
Laying Plastic Mulch

Plastic mulch is sometimes used to start vegetables such as tomatoes and melons earlier than normal. Commercial growers use a machine to lay the mulch, but home gardeners must do this by hand. Following are some tips on how this is done.

1. Fertilize according to soil test. You won't be able to add fertilizer after the plastic is down.

2. Work the soil so that the bed can be easily shaped.

3. Use a garden hoe to form a trench along all edges of the plastic. The soil should be pulled to the outside of the bed. The trench should be formed six inches in from the edge of the plastic and extend along both sides and both ends. The trench should be deep and wide enough to bury six inches of plastic.

4. Lay trickle irrigation tube down the center of the bed. This isn't absolutely necessary but it makes it much easier to water. Overhead watering will hit the plastic and roll off.

5. Lay the plastic down and cover the edges with soil. You may need to slit the edge of the plastic where the trickle irrigation tube enters the end of the bed.

6. Plant when the soil temperature reaches the correct temperature for the crop (55 degrees for tomatoes and 60 degrees for melons) at a 2.5-inch depth. Check the temperature at about 11:00 a.m. to get a good average temperature. Check for several days in a row to ensure the temperature is stable. (Ward Upham)

Contributors: Ward Upham, Extension Associate

To view Upcoming Events: http://tinyurl.com/fswqe

The web version includes color images that illustrate subjects discussed. To subscribe to this newsletter electronically, send an e-mail message to cdipman@ksu.edu or wupham@ksu.edu listing your e-mail address in the message.

For questions or further information contact: wupham@ksu.edu

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