FRUIT

Planting Fruit Trees

Fruit trees and many small fruit plants are usually sold bare root, 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 backfill soil and area around the planting hole. In heavy soil, adding amendments to just the planting hole creates a “pot” effect that can fill with water and drown your new tree.

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 will develop scion roots. Water plants in immediately to eliminate air pockets and ensure there is plenty of water for root uptake. Do not fertilize. (WU)
Apple Tree Sprays

Two common diseases on apple trees are cedar apple rust and apple scab. Though some apple varieties are resistant to these diseases — including Liberty, Jonafree, Redfree, Freedom, Williams Pride and Enterprise — most varieties are susceptible. For a description of disease-resistant varieties, go to http://ohioline.osu.edu/hyg-fact/1000/1401.html

Fungicide sprays during April and May are critical to preventing disease on susceptible varieties. A fungicide that is available to homeowners and very effective for control of apple scab and cedar apple rust is myclobutanil (Immunox). There are several formulations of Immunox, and only one is labeled for fruit. Check the label. Bayleton (Green Light Fung-Away) is excellent on rust but poor on scab. Captan, a common component of fruit tree sprays, is excellent on scab but does not control cedar apple rust. Sprays should be done on a 7- to 10-day schedule to keep the protective chemical cover on the rapidly developing leaves and fruit. An insecticide will need to be added to this mixture after petal drop to prevent damage from codling moths that cause wormy apples. Methoxychlor or malathion can be used as an insecticide. In order to protect bees, DO NOT use any insecticide during bloom.

Although gardeners may continue to use myclobutanil throughout the season, certain other fungicides are more effective on summer diseases such as sooty blotch and fly speck. Consider switching to Captan or to a fruit spray mixture about June 1.

A spreader-sticker can be added to the fungicide-insecticide chemical mixture to improve the distribution and retention of the pest control chemicals over the leaves and fruit. A hard, driving rain of about 1 inch or more will likely wash chemicals from the leaves and fruit. In such cases, another application should be made. You can find information on controlling insects and diseases on fruit trees in our publication titled “Fruit Pest Control for Home Gardens” at http://www.ksre.ksu.edu/library/hort2/c592.pdf (WU)

FreezePruf and Cold Hardiness

Researchers at the University of Alabama and Miami University have developed a product that increases cold-hardiness of plant tissues that have been sprayed with the material. Increased cold tolerance should increase by 2 to 9 degrees F depending on the plant species and the duration of the cold event. Protection lasts up to 4 weeks but must be applied to the tissues you wish to protect. Therefore, if the goal is to protect peach tree
flowers from frost damage, application must be made after the flowers have opened. Though the product will be beneficial if applied at any temperature above freezing, it is recommended the application be made at temperatures above 50 degrees and at least 8 to 12 hours before a freeze if possible.

I will be using this product on a trial basis this year on apricots and peaches. An untreated area will be left on each tree to determine effectiveness. I’ll report back later with results. Surely we won’t be so unlucky as to have 2 years in row with no frost after flower buds open.

If this product isn’t available locally, it can be obtained through Amazon or the Liquid Fence Company at [http://www.liquidfence.com/FreezePruf.html](http://www.liquidfence.com/FreezePruf.html) (WU)

**VEGETABLES**

**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 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.

So how early can you transplant? I’ve gone as early as the first week in April, but I had trouble with flowers not setting when using that early date. I may try about the middle of April this year. (WU)
Bolting and Buttoning in Cole Crop Plants

Broccoli, cabbage and cauliflower are cole crops that have a tendency to bolt (go to seed) or button (produce an extremely small head) if plants are not grown properly. These crops need to be kept actively growing through their production cycle. If they slow down due to underfertilization or are stunted due to overgrowing their container, buttoning or bolting is more likely. If you are not growing your own but rather selecting plants from a retailer, choose small, stocky dark green plants. Even after transplanting, these plants need to be well-fertilized. Fertilize at transplanting with a starter solution and continue to fertilize every 2 to 3 weeks until harvest. Both buttoning and bolting are irreversible. Once a seed stalk starts for form, nothing can be done to force the plant to produce a normal crop. (WU)

TURFGRASS

Managing Turf in Shade

Turfgrasses differ in their capacity to grow in shade. Among Kansas turfgrasses, tall fescue is the best adapted to shade. Although the fine fescues (i.e., creeping red, chewings, hard and sheep) have better shade tolerance, they lack heat tolerance and typically decline during hot Kansas summers. The warm-season grasses have the poorest shade tolerance, although zoysia does better than bermuda and buffalo.

Where shade is still too heavy for fescue, there are other courses of action. The most obvious is to either remove trees, or to prune limbs and thin the tree canopies. Grass will do better under openly spaced trees than under closely spaced trees. Pruned limbs and thinned canopies will allow more sunlight to directly reach the turfgrass.

If possible, raise the mowing height in the shade to compensate for the more upright growth of the leaves, and to provide more leaf area for photosynthesis. The thin, weak turf in the shade may tempt you to fertilize more. Remember the problem is lack of light, not lack of fertility. Too much nitrogen in the spring causes the plant to grow faster and may result in starvation. The nitrogen rate for shaded grass should be cut back to at least half of that for grass in full sun. Late fall fertilization after tree leaves have fallen, on the other hand, is important for shaded cool-season turfgrasses and should be applied at full rate. Irrigate infrequently but deeply. Light,
frequent irrigation may encourage tree feeder-roots to stay near the surface, which increases competition between the trees and the turf. Restrict traffic in the shade.

Many times, the best choice for shaded areas is switch from a turfgrass to a more shade-tolerant plant. For example, English ivy and periwinkle (Vinca minor) are much more shade tolerant than any turfgrass adapted to our area. Another option is simply to mulch the area where turf doesn’t grow well. The trees will love the cool, moist soil and the absence of competition. (WU)

ORNAMENTALS

Cut Down and Destroy Dead Pines!

Got dead pine trees? If you are in the eastern half of Kansas, they probably died of pine wilt, a disease that is widespread in that part of the state. If you are in central or western Kansas, pine wilt is less common but it can still occur in pockets.

Cut down pine wilt infected trees ASAP (by April 1, or May 1 at absolute latest) and burn or chip the wood) by May 1 at the latest (to break the infection cycle. Do not keep the logs piled up — the beetle and nematode can survive in firewood. In addition, be sure to cut the stump down to the ground, and destroy it, too. By destroying the wood you'll destroy the nematode that causes it, and the beetle that spreads it.

For more details on pine wilt symptoms, biology, etc, you can go to this site: http://www.plantpath.k-state.edu/DesktopModules/ViewDocument.aspx?DocumentID=943 (MK)

MISCELLANEOUS

Transplant Solutions and Sidedressing

Transplant solutions are mild fertilizer solutions that are applied to newly transplanted vegetables and flowers. Transplant solutions are also called starter solutions or root stimulators. Plants not given a transplant solution often develop a purplish tinge to the leaves caused by a phosphorus deficiency. Surprisingly, the soil may have plenty of phosphorus but plants often have difficulty taking up nutrients in cool soils. The starter solution places soluble nutrients near the roots so the plants get off to a good, strong start.

Transplant solutions (root stimulators) are available for sale but it is also possible to make your
own transplant solution from a fertilizer that contains more phosphorus than nitrogen or potassium such as a 5-10-5, 10-20-10 or 11-15-11. Mix 2 to 3 tablespoons of one of the above fertilizers in a gallon of water several hours before use. The fertilizer won’t completely dissolve but enough will go into solution to get plants off to a good start. Use about 1 cup of transplant solution for each transplant.

Sidedressing is a fertilization done after the plants are established. A fertilizer containing primarily nitrogen is used to keep plants growing and productive. Nitrate of soda (16-0-0) is often used at the rate of 2 pounds fertilizer per 100 feet of row. More commonly available lawn fertilizers such as a 30-3-3, 29-5-4 or something similar can also be used but cut the rate in half. Be sure any lawn fertilizer used does not contain weed preventers or weed killers. Note that most fertilizers weigh about 1 pound per pint of product.

We have a sidedressing sheet available that lists crops, rate of fertilizer application and timing of application(s) for many common vegetables as well as annual flowers. The sheet can be viewed at [http://www.hfrr.ksu.edu/doc1991.ashx](http://www.hfrr.ksu.edu/doc1991.ashx) (WU)

**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, I 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. (WU)
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 a.m. to get a good average temperature. Check for several days in a row to ensure the temperature is stable. (WU)

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