Grape Growing Workshop to be held.
In cooperation with the Meadowlark District Extension office, Highland Community College will host a Vineyard Workshop on Monday, March 26th. The workshop is free to the public and will run 2:00-5:00pm at Crooked Post Vineyard located at 10251 130th St. Valley Falls, KS 66088, just five miles southeast of Valley Falls. Dominic Martin, HCC Vineyard Manager and Viticulture-Enology Instructor will conduct the workshop, discussing winter pruning for both VSP and Hi-cordon systems, trellis maintenance, spring pesticides and more. To RSVP, please contact either Scott Kohl at HCC at 785-456-6006 or Meadowlark District Extension Agent David Hallauer at 785-863-2212 or dhallaue@ksu.edu. Go to http://www.hfrr.ksu.edu/doc3333.ashx for more information about the entire schedule of workshops and list of topics.

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? Start with a date about 2 weeks earlier than normal. (WU)
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

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)

**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 matter 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. (WU)

**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 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. (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)
PESTS

Be on the Lookout for Hackberry Psyllids

These small dark-colored insects are sometimes called jumping plant lice. The adults resemble cicadas in miniature form. They are about 1/8- to 1/5-inch long and small enough to enter homes through ordinary screens. These insects overwinter as adults in buildings (including homes) or in bark crevices on trees.

Since these insects are specific to hackberry trees, only homes near a hackberry tree are affected. If hackberry psyllids become a nuisance inside, use a vacuum cleaner to suck them up. Be sure to discard the bag immediately after vacuuming so they don't escape and re-infest the home.

After mating in the spring, the females deposit eggs on newly emerging hackberry leaves. Nymphs hatch from the eggs and start feeding on the underside of the leaves. Galls form over the nymph and provide a protective covering. If you have ever seen the bumps on the underside of hackberry leaves, you know what these galls look like. Though these galls are unsightly, the health of the tree is apparently unaffected. Spraying the trees with an insecticide when the leaves are unfurling in the spring will eliminate some of the adults and nymphs before the galls have formed. However, good control is difficult to achieve. Once the nymphs are protected by the galls, chemical controls are ineffective. (WU)

Scale Crawlers: Be On The Look-Out!

Due to the un-seasonably warm weather we have been experiencing at this time of year it appears that enough heat units may have accumulated to initiate some insect activity. In addition, certain plant species are exhibiting new growth. As such, it would be prudent to start scouting/monitoring for scale crawlers (and for some scale species, fertilized females). In fact, we have already received reports of Lecanium crawlers present in Wichita, KS. Most scale crawlers are small (<2.0 mm in length) and vary in color from red, light orange, to brown depending on the scale species. In addition, they may be difficult to observe especially on trees or shrubs with light-colored branches or bark as they tend to blend in whereas they may be more easily observed on plants with dark-colored bark or branches.

Scales, when feeding, may inject toxic saliva into plant tissues. In addition, feeding may create wounds that provide entry sites for plant pathogens. For most scale species, males eventually molt into very small, winged, gnat-like insects that live up to two weeks. Their sole function is to fertilize females (for soft scales). Hard scale females continue to molt and later lose their legs;
remaining stationary (sessile) for the remainder of their life.

In contrast, soft scale females retain their legs. Both hard and soft scale females will eventually die (or “kick the-bucket”) and their bodies form a protective covering over the eggs and for emerging crawlers.

One method recommended to detect the presence of scale crawlers is to randomly wrap double-sided sticky tape around branches or twigs, which will capture the crawlers as they migrate on plants. It is best to check the double-sided sticky tape either once or twice weekly. Once scale crawlers are present then you can implement any one (or all) of the following procedures: 1) use a forceful water spray twice weekly to quickly remove all scale crawlers from plants; 2) apply some type of contact insecticide such as potassium salts of fatty acids (insecticidal soap), petroleum or neem-based oils (horticultural oils), acephate (Orthene), or any of the pyrethroid-based insecticides (bifenthrin, cyfluthrin, and lambda-cyhalothrin); and/or 3) apply a systemic insecticide such as imidacloprid, dinotefuran, or thiamethoxam as a drench or granule to the soil if you are dealing with soft scale. This should be done prior to or as soon as new growth emerges. It is important to irrigate afterward (due to the lack of moisture it is recommend to irrigate plants before applying any systemic insecticide) in order to move the active ingredient into the root zone where it can be absorbed by the roots and then translocated to plant parts where the scale crawlers are feeding. Systemic insecticides are more effective against soft scales because they feed on plant fluids, which contain the active ingredient of the systemic insecticides that are being translocated through the plant vascular system. In general, systemic insecticides are “less effective” for managing or suppressing hard scales as these scales are not feeding exclusively on plant fluids.

When using forceful water sprays or applying contact insecticides be sure to thoroughly cover all plant parts, and make repeat or multiple applications for several weeks. Dealing with scales early in the growing season will alleviate having to deal with scale outbreaks later on in the season, which limits management options. (RC)

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