Horticulture 2012 Newsletter
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Video of the Week:  Cool-Season and Warm-Season Vegetables

UPCOMING EVENTS

Orchid Show Next Week

The Kansas Orchid Society is hosting the American Orchid Society Spring Meeting and the Southwest Regional Orchid Growers Association Show from April 27-29 at the Hyatt Regency Hotel, 400 W. Waterman, Wichita, KS. Admission to the show and sales area is free and open to the public from 9:00 am until 5:00 pm Friday, April 27 and Saturday April 28; and from 9:00 am to 4:00 pm Sunday April 29. Hundreds of orchids of all types will be on display. Ten vendors from all over the U.S. and one from Ecuador will have plants and supplies for sale.

VEGETABLES

Setting Out Tomatoes

Gardeners often try to get a jump on the season by planting tomatoes as early as possible. Though this can be successful, there are certain precautions that should be observed.

Harden off plants: Plants moved directly from a warm, moist greenhouse to the more exposed and cooler conditions outside may undergo transplant shock. Transplant shock causes plants to stop growing for a time. Plants can be acclimated to outside conditions by placing them outdoors in a
location protected from wind and full sunlight for a few days before transplanting. Another way to harden off plants is to transplant them and place a cardboard tent or wooden shingle to protect them from wind and sun for 2 to 3 days. The best conditions for transplanting is an overcast, still day.

**Protection from frost:** Tomatoes cannot tolerate frost. Though we are past the average date of the last frost in most of Kansas, watch the weather and cover the plants if frost threatens. A floating row cover or light sheets can be used for protection. Actually a floating row cover can be left on the plants for two to three weeks to increase the rate of growth and establishment.

**Adequate soil temperature:** Tomato roots do not do well until soil temperatures reach a fairly consistent 55 degrees F. Check the temperature at 2 inches deep during the late morning to get a good average temperature for the day. Plastic mulch can be used to warm soil more quickly than bare ground. Purple leaves are a sign of phosphorus deficiency due to cool soils.

Other tips for getting tomato plants off to a fast start include:

1. Use small, stocky, dark green plants rather than tall, spindly ones. Smaller plants form roots rapidly and become established more quickly than those that are overgrown.

2. Though tomatoes can be planted slightly deeper than the cell-pack, do not bury the plant deeply or lay the stem sideways. Though roots will form on the stems of tomatoes, this requires energy that would be better used for establishment and growth.

3. Use a transplant solution (starter solution) when transplanting to make sure roots are moist and nutrients are readily available.

4. Do not mulch until the plant is growing well. Mulching too early prevents soil from warming up. (WU)

**Red Plastic Mulch and Tomatoes**

Plastic mulches have long been known to provide advantages for the vegetable grower including earlier fruiting, increased yields and weed control. More recently advantages have been noted for colored mulches over the more traditional black plastic mulch. With tomatoes, the color of choice has been red. Though normally there is an increase in production of marketable fruit with red mulch over black mulch, the amount of the increase varies with the type of year we have. There may be no increase during years of near-perfect weather or up to a 20% increase with less favorable growing conditions. A good average expected increase is about 12%.

So, how do you apply plastic mulch? Commercial growers have a
mulch-laying machine that applies the trickle irrigation line and the mulch in one operation. Home gardeners must do this by hand. The first step after soil preparation is to place a trickle line near the center of where the mulch will lay as the plastic will prevent rainwater or overhead irrigation from reaching the plants. Then construct trenches for the outer 6 inches of the plastic mulch. This allows the center of the bed to be undisturbed with the edges of the mulch draping down into the trench. Fill the trenches to cover the edges of the mulch. This will prevent wind from catching and blowing the mulch. If the soil has been tilled, a hoe is all that is needed to prepare the trenches. (WU)

**Rhubarb Harvest and Seedstalks**

Rhubarb, like asparagus, is a perennial vegetable. It is harvested for the leaf stem, which is also called a petiole. Some years rhubarb will produce large, hollow-stemmed seedstalks that arise from the center of the plant. These should be broken or cut out as they appear so that energy will go into plant vigor rather than seed production. It will take several weeks for all the seedstalks to appear so be vigilant in removing them. Newer varieties of rhubarb are selected for vigor, bright red-colored stalks and less of a tendency to produce seedstalks than the older types. (WU)

**Help for New Vegetable Gardeners**

Kansans that are new to vegetable gardening often don’t know how much of each crop to plant. K-State Research and Extension has a publication that can help. The “Vegetable Garden Planning Guide” gives information on the size of planting needed per person and the average crop expected per 100 feet. Also included is a garden calendar highlighting suggested planting dates and expected harvest dates. Crop specific information is detailed including days to germinate, plants or seeds needed per 100 feet of row, depth of planting, spacing within the row and spacing between rows. You can find the publication at your local county extension office or online at: [http://www.ksre.ksu.edu/library/hort2/mf315.pdf](http://www.ksre.ksu.edu/library/hort2/mf315.pdf)

Another, more in-depth publication titled the “Kansas Garden Guide” is also available. This 77-page booklet has sections on planning a garden, composting, improving soil, seeding and planting, garden care, watering, planting gardens for fall production, insect and disease control, container gardening, season extension and harvesting and storing. This is followed by an extensive section on how to grow specific vegetables and herbs. You may order the print
FRUIT

Fruit Tree Sprays and Rain

A spreader-sticker should be used in fruit tree sprays to improve the distribution and retention of fungicides and insecticides on fruit and leaves. However, even with a spreader-sticker, a rain can reduce the length of time the materials are effective. Less than one inch of rain since the last spray will not significantly affect residues. One to two inches of rain will reduce the residue by one half. Reduce the number of days until the next spray by one half. More than two inches of rain since the last spray will remove most of the spray residue. Re-spray as soon as possible. Details on when and what to spray are available in the K-State Research and Extension publication, "Fruit Pest Control for Home Gardens" at http://www.ksre.ksu.edu/library/hort2/c592.pdf. (WU)

ORNAMENTALS

Accumulated Stress May Result in Death of Plants

We have received reports of trees in numerous areas of the state being slow to leaf out, losing branches or not leafing out at all. The cause in most of these cases seems to be stress-related. Last summer was very hot and dry and placed a number of plants under stress. This was followed by a warm, dry, open winter which further stressed root systems. Let’s look at some of these situations and what should be done to compensate, if anything.

Trees that lose individual branches should have those branches cut out. Note that there are other possible causes of branch loss such as verticillium wilt. You may want to take a sample to your county extension office to have them send it through our plant disease lab on campus if you suspect disease rather than stress. To find out more about verticillium wilt, go to http://www.hfrr.ksu.edu/DesktopModules/ViewDocument.aspx?DocumentID=1737.
Trees that are slow to leaf out need to be given some extra care so that further stress is avoided. See the last paragraph in the article for recommendations.

We may see more damage as we transition into summer weather. Plants may wither seemingly overnight. These trees probably died earlier but had enough food reserves to put out leaves and even to grow for a period of time. When the food reserves become depleted, the plants will die suddenly. Be careful not to confuse this with feeding damage from May beetles or other insects. May beetles will strip a tree of leaves rather than leave them wilted and dead on the plant. Healthy trees will easily recover from May beetle damage by throwing out a new set of leaves. Before any tree is cut down, check the twigs. Dead trees will have brittle, dry stems that snap. Live stems may break, but they won’t be dry. If the tree is still alive, give it time to put out a new set of leaves.

If you suspect you have plants under stress, try to water them once a week if we do not receive rainfall. Trees should be watered to a depth of 12 to 18 inches if possible. Water from the trunk out the edge of the branches. Though this will not reach all the roots of a tree, it will reach the majority of them. Trees normally have at least 80 percent of their roots in the top foot of soil. Shrubs should be watered to a depth of 8 to 12 inches. Check the depth of watering by pushing a wooden dowel or metal rod into the soil. It will stop when it hits dry soil. (WU)

**PESTS**

*Aphids on Roses*

Aphids are “out-and-about” on a variety of plants including chrysanthemum, oak, and rose. Although roses are one of the most beautiful plants grown in landscapes and gardens, they are susceptible to attack from a multitude of arthropod (insect and mite) pests. In fact, roses may be attacked by different aphid species such as the potato aphid ( Macrosiphum euphorbiae) and the cotton aphid (Aphis gossypii); however, the predominant species that feeds on cultivated roses is the rose aphid ( Macrosiphum rosae).

Rose aphids are soft-bodied, pear-shaped insects approximately 1/4 inches long. They may vary in color from green to pink to red. There are two tubes, called cornicles that protrude out from the end of the abdomen.

Rose aphids overwinter as eggs on rose canes. Rose aphids typically start feeding on roses in early spring as the new flush of growth emerges. They cluster on leaves, stems, and developing buds. Rose aphids feed on plant fluids (phloem) with their piercing-sucking mouthparts, and tend to congregate in large numbers, feeding on terminal growth such as leaves and developing flower buds, and on leaf undersides.
Their feeding causes leaves to curl upward and deform flower buds. Flower buds may abort or fall prematurely before opening. In addition, rose aphids produce copious amounts of honeydew, which is a clear, sticky liquid exudate produced during feeding. Honeydew attracts ants, wasps, and hornets and serves as a growing medium for black sooty mold fungi. In general, rose aphids do not normally cause direct harm to roses unless they are present in excessive numbers, in which case, they may kill buds or reduce flower size. Rose aphids, like many aphid species, have a very high reproductive capacity (produce LOTS of young), which may result in populations increasing to abundant numbers during the season.

Rose aphids are susceptible to many natural enemies such as parasitic wasps (parasitoids) and predators (e.g., ladybird beetles, green lacewings, and syrphid flies) that may provide some level of regulation depending on the number of rose aphids present. Routine (twice per week) forceful water sprays will remove aphids quickly from rose plants without harming natural enemies. This technique is effective as long as it doesn’t promote diseases such as black spot. Contact and/or systemic insecticides may be effective in controlling/regulating rose aphid populations. Contact insecticides [e.g., insecticidal soaps, horticultural oils, malathion, orthene, and pyrethroids (bifenthrin and cyfluthrin)] may need to be applied multiple times and thorough coverage of all plant parts is essential in order to prevent outbreaks of rose aphids from occurring.

When using systemic insecticides (i.e., imidacloprid), it is important that applications be made early to ensure that the active ingredient is present in new growth just as rose aphids start feeding. (RC)

**MISCELLANEOUS**

**Kansas Wildflowers and Grasses Website**

Kansas has many beautiful wildflowers. If you have noticed a wildflower and wished you could identify it, visit Kansas Wildflowers and Grasses at [http://kswildflower.org/](http://kswildflower.org/)

Not only are wildflowers covered but also grasses, sedges and brushes. The site has 4,256 photos of 700 plants organized to help anyone, including non-botanists, with identification. Wildflowers and grasses are not only listed by color but also by time of flowering. Grasses and sedges are grouped and plants are also listed by common and scientific names. Each plant has a separate page listing botanical information as well as height, time of flowering, habitat, distribution, forage value and comments. Multiple photos are also included with each photo able to be enlarged by clicking on the image. The photography is excellent. Many thanks to Mike Haddock with K-State Libraries for developing this superb site. (WU)
Field Bindweed Control

Field bindweed is difficult to control, especially for homeowners, but there are options.

**Home Vegetable Gardens:** Weed control requires taking the treated portion of the garden out of production for a time.

**Solarization** - Solarization uses the energy from the sun to produce heat that pasteurizes the soil.

Follow these steps to solarize a garden area:

1. Select the hottest time of year to solarize, usually mid-June to mid-August in Kansas.

2. Work the soil deeply, and smooth the surface so the clear plastic will make uniform contact with the soil.

3. Water well. Moisture encourages seed to germinate and existing bindweed to grow so plants can be killed by the heat. The water also helps conduct the heat deeper into the soil.

4. Spread clear polyethylene film over the area. Seal the edges and seams with soil to prevent air from circulating under the plastic. One mil film is most effective at creating heat, but is likely to be torn apart by Kansas winds. Film that is 4 mil thick is more likely to last.

5. Leave the plastic in place for 4 to 6 weeks. The longer time is more effective.

6. Remove the plastic after 6 weeks. If you leave it in place longer, it may become brittle from exposure to ultraviolet radiation and be difficult to remove. You can plant the next day.

**Glyphosate** - Glyphosate is sold under a wide variety of names, the most common being Roundup. Take the garden out of production when treating.

1. Roundup is a non-selective herbicide that will kill whatever it hits. But it is inactivated when it contacts the soil.

2. Roundup is most effective when applied to bindweed that is at or beyond full bloom. You can treat earlier but don't skip the late summer to fall application.

3. Do not apply to bindweed that is under moisture stress or not growing well.

**Turf:** Selective herbicides are available. An herbicide with the trade name of Drive (quinclorac) has, until recently, only been available to commercial applicators. However, there is now Drive packaged for homeowners and is available from Monterey Lawn and Garden.
There are also homeowner combination herbicides that contain Drive such as Ortho Weed-B-Gon Max + Crabgrass Control and Bayer All-in-One Lawn Weed and Crabgrass Killer.

Commercial applicators can also use Drive (quinclorac) as well as Q4 (contains quinclorac). Products with Drive work about as well as glyphosate but are selective.

Note that lawns treated with Drive should not use clippings in compost or as mulch as Drive is very stable on grass clippings. We recommend clippings be returned to the lawn anyway but if they are bagged, they should be discarded. Do not apply products with Drive over exposed roots of trees and ornamentals. It would be best to avoid spraying beneath the canopy of any trees to avoid possible damage. If there are plans to convert a section of lawn to a vegetable garden, do not use Drive on that area. Eggplants can be damaged if planted within 12 months of areas treated with Drive, and tomatoes can be damaged if planted within 24 months.

**Shrub Beds:** Use a spray of glyphosate between plants. Use a shield if spraying near plants to keep spray from contacting green plant material. Remember, glyphosate will hurt your shrubs if it contacts green tissue.

It is possible to control field bindweed by pulling, but you must be extremely persistent. I remember reading a study from the 1940s that found that bindweed produces enough energy to start strengthening the roots when it reached the six-leaf stage. So, if pulling, never allow plants to produce more than six leaves. (WU)

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