THINKING OUTSIDE THE SHOPPING CART

In the conventional food system, food travels 1,500 miles or more on average from farm to table. Only about 10 percent of the fossil fuel energy used in the world’s food system is used for producing the food; the other 90 percent goes into packaging, transporting, and marketing. Locally produced food is more energy-efficient, with the majority of the energy use going toward food production.

On any given day more than half of the U.S. population eats no fruit or vegetables. By joining a CSA (community supported agriculture), you and your family are ensured a weekly supply of fresh, delicious, and nutritious vegetables. Only 1 of 10 children ages 6 to 11 eats the recommended 5 servings of fruit and vegetables. Surveys of CSA members reveal that becoming CSA members, households significantly increased their consumption of vegetables and fruit. Since the turn of the 20th century, 97 percent of fruit and vegetable varieties have become unavailable commercially, replaced by only a few uniform varieties. CSA farms are extremely diverse, growing 30 to 50 different types of crops and hundreds of different varieties. Many CSA farms grow heirloom varieties known for their taste rather than their ability to withstand shipment across the country and the globe.

In a typical year, more than 10,000 new food items are introduced in grocery stores, mostly highly processed, packaged foods. Many CSA farms introduce people to lesser known crops such as sunchokes, fennel, and celery as well as purple potatoes, yellow watermelon, and beauty heart radishes. Conventional farmers receive less than 25 cents of your consumer food dollar on average. CSA farmers receive 100 percent of your consumer dollar, and this helps keep small family farms in business. The average U.S. citizen spends less than 12 percent of his or her disposable income on food. A CSA membership is both a great value and a great way to support the local economy with your food dollars.

Top 10 items purchased at a grocery store: Marlboro cigarettes, coca-cola classic, pepsi-cola, Kraft processed cheese, diet coke, Campbell’s soup, Budweiser beer, Tide detergent, Folger’s coffee and Winston cigarettes.

Top 10 items delivered by a typical CSA farm: tomatoes, lettuce, carrots, beans, potatoes, peppers, squash, onions, peas, broccoli.

Source: John Hendrickson, page 4 of “From Asparagus to Zucchini”.

University of Missouri System, Lincoln University, U.S. Department of Agriculture & Local University Extension Councils Cooperating  
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**FIREBLIGHT**

Fire blight is a bacterial disease affecting apple, crabapple, pear, hawthorne, pyracantha (firethorn) and related species. The bacteria commonly live over winter in cankers (old diseased areas) in the tree, from which they ooze in early spring. The bacteria usually are spread from the cankers by insects and by wind-blown rain. Sometimes careless pruning practices also may spread the bacteria. The succulent new shoot growth also is susceptible to bacterial infection in the spring and early summer. When infected, the tender tips wilt, die and assume a characteristic "shepherd's crook" appearance. These infections often kill a foot or more of the terminal growth. Apple leaves and shoots turn rusty brown in color; in pears, these parts turn black. In either case the dead leaves remain attached to the dried shoots.

One of the best ways to avoid fire blight is to not plant varieties that are susceptible. The most susceptible apple varieties, essentially in the order given, are Gala, Jonathan, Yellow Transparent, Lodi, York and Wealthy. Apple varieties such as Red Delicious, Golden Delicious, Dayton, Liberty and Jonafree usually are only slightly affected and generally do not require special treatment for fire blight. Eliminate fire blight infections by pruning out diseased branches. Dormant pruning to remove overwintering infections helps reduce inoculum for the next season. To avoid spreading bacteria during pruning, dip or spray the pruning tool before each cut with a 10 percent solution of bleach (one part bleach to nine parts water). Dry and oil tools after use to prevent rust.

Streptomycin is a bactericide used to control fire blight. Various products are labeled for application to apples, pears and ornamentals. Sprays are generally applied when wet weather occurs during bloom and temperatures are 60 to 75 degrees F. A minimum of two applications are necessary to provide control. Consult the label for specific application instructions. Fire blight has been observed to be most severe on vigorously growing trees. For this reason, the amount of fertilizer (mostly nitrogen) applied needs careful attention. Allow the tree to show when it needs fertilizer rather than making routine applications each year. The disease may appear for several years in various degrees of severity, then show little or no damage for a few years. Fire blight is most severe in springs when soil moisture is high, when bud and shoot development is rapid, when temperatures of 60 to 75 degrees F persist, and when frequent rains occur (especially wind-blown). These conditions promote rapid development of succulent shoots and blossoms that favor both the rapid multiplication and subsequent dissemination of the bacteria. During seasons like this, homeowners with valuable susceptible ornamental and fruit plantings need to be especially diligent in their fire blight control programs.

**Source:** MU Guide 6020

**ANTHRACNOSE ON SHADE TREES**

I have had several calls this spring/summer regarding Anthracnose on shade trees. It is a common problem this time of year and especially during a year of a lot of rainfall. Anthracnose of shade trees is caused by a group of related fungi whose development is favored by cool, wet conditions. The fungi have very specific host associations so that maple anthracnose is not the same disease as oak anthracnose, although the symptoms of these diseases may be similar.

Primary hosts in Missouri include: Ash, Birch, Elm, Hickory, Linden, Maple, Sycamore, Tulip tree, Walnut, and White Oak.

Symptoms and diagnosis: Although the site of infection, symptoms and signs and severity of infections vary with species, anthracnose fungi typically create spots that form around the leaf veins, causing the death of the vein and the surrounding tissue. Over time these areas tend to fall out, giving the leaves a very ragged appearance. Leaf margins, interveinal areas and some petioles can also be infected, causing malformed and blighted leaves.

Anthracnose infections on some species, particularly sycamore and oak, are not restricted to leaves, but also infect the

(Continued on page 3)
SEPTORIA LEAF SPOT AND EARLY BLIGHT OF TOMATOES

Septoria leaf spot and Early Blight are common fungal diseases of tomatoes in the home garden. Knowing the symptoms of these common problems is very important so that the proper control measures can be taken. Virtually anyone who raises tomatoes has likely had a problem with Septoria leaf spot. This disease infects the lower leaves first and gradually works its way up the plant. The first symptom of this disease is yellowed leaves, which upon closer inspection have small (1/8 to 1/4 inch) brown to tan spots. As the disease progresses, the leaves become brown and crispy and eventually fall off.

Early blight infections also begin on the lower leaves and eventually work upward. Infected leaves turn yellow and develop tan to brown spots as well, however, these spots are larger than those made by Septoria leaf spot. The spots enlarge rapidly and by the time they reach over a 1/4 inch, concentric rings may be distinguished in the dark brown portion of the spot. This patterning is not seen on the spots made by Septoria leaf spot.

Septoria leaf spot and Early Blight can be managed in the same way since there are many similarities in their life cycle and symptoms. Because both these fungi survive between crops on infected tomato debris, remove and destroy debris soon after the plants stop producing. Use as long of a rotation as possible between solanaceous crops. Splashing water spreads these fungi and growth is favorable during periods of heavy dew and extended leaf wetness. Minimize leaf wetness by watering from below and staking or space plants farther apart to improve air circulation within the canopy. Reduce leaf contact with soil by mulching, pruning leaves and refraining from walking or working in the tomato patch while foliage is wet. Most plants with this disease will produce well despite being infected, however, this is dependent upon if the infection occurs early or late in the season. If the disease is severe year after year and limits production, fungicide applications that contain chlorothalonil (Daconil), mancozeb or copper spaced 7 to 10 days apart can be applied. Fungicides should be used in addition to the other management tactics.

Source: Missouri Environment and Garden, Volume 7, No. 7

CEDAR-APPLE RUST

Numerous small, yellow spots appear on the upper leaf surfaces of apple and crabapple trees, usually during late April or May. Later, cluster cups are evident on the underside of the leaf spot. The fungus that causes this disease also produces galls on juniper.

Plant resistant varieties. Although eradicating junipers is not feasible, removing galls from nearby junipers may be of some benefit. Avoid planting crabapples adjacent to junipers. Fungicides can provide good control, with proper timing. Make the first application when gelatinous, orange tendrils are noticed on the cedar galls, usually in mid-April. Continue the applications on a 7 to 10 day interval as long as galls are active. Chlorothalonil (for crabapples not intended as food only), fenarimol, ferbam, mancozeb, maneb, myclobutanil, propiconazole, thiophanate-methyl or triadimefon are labeled.

Source: MU Soil and Plant Diagnostic Services

Integrated management strategies: Because spores of anthracnose fungi over winter in leaf litter and on dead branches, raking to remove infected leaves in the fall and pruning dead branches will reduce the inoculum available to create infections for next season. Promote air circulation by thinning excessive twig and branch growth. Keep trees growing vigorously. Fungi are available to control this disease on many hosts, however, they are most appropriate and economical for younger, newly transplanted trees that may not be able to withstand defoliation.

Source: MU Soil and Plant Diagnostic Services

(Anthracnose on Shade Trees Continued from page 2)
JULY GARDENING TIPS

Ornamentals
- Continue to pinch mums until mid-July. Pinching after this may delay flowering.
- Deadhead perennials (remove dead flowers) that have finished blooming.
- Prune climbing roses and rambler roses after bloom.
- Spider mites may be a problem during hot, dry weather. Leaves will become speckled above and yellowed below. Evergreen needles appear dull gray-green to yellow or brown.
- Water newly planted trees and shrubs thoroughly at least once a week.
- Fertilize trees and shrubs by July 4. Late fertilizing may cause lush growth that is more prone to winter kill.
- Black Spot may be a problem on roses. Remove and pick up infected leaves and spray fungicides as needed.
- Powdery mildew may be found on lilacs. It is rarely harmful and shrubs grown in full sun are less susceptible.
- Divide irises now.

Vegetables
- Blossom end rot of tomatoes and peppers may become a problem. Maintain soil moisture and do not let soils dry out. Place a layer of mulch 2-3 inches thick around plants.
- Keep weeding! Prevent weeds from going to seed.
- Dig potatoes when the tops die. Plant fall potatoes by July 15th.
- Harvest onion and garlic when the tops turn brown.
- Keep cucumbers well watered. Drought condition will cause bitter fruit.
- Sow seeds of carrots, beets, turnips, and winter radish for fall harvest the last week of July. Also set out broccoli, cabbage, and cauliflower transplants for the fall garden at this time.

Fruit
- Protect grapes from birds!
- Prune out old fruiting canes of raspberries after harvest is complete.
- Apply second spray to trunks of peach trees for peach borers.
- Early peach varieties ripen now.
- Blackberries will begin to ripen soon.

Turf
- Water lawn frequently enough to prevent wilting. Early morning irrigation allows turf to dry before nightfall and will reduce the chance of disease.
- Monitor lawns for newly hatched white grubs. If damage is occurring, apply appropriate controls, following product label directions.

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