



OUTREACH & EXTENSION
UNIVERSITY OF MISSOURI
LINCOLN UNIVERSITY

Garden Talk!

for the Heartland Garden Enthusiast

June 2003

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Upcoming Events

June 2: Garden N' Grow starts in Kirksville. Call 660-665-9866 for more information.

June 22: Kirksville Area Master Gardener Club Garden Tour

July 21-26: NEMO Fair, Kirksville, MO



KNOW YOUR ENEMY

Many gardeners may worry that without regular sprays of synthetic chemical fungicides, diseases will simply run rampant. But a little knowledge of how disease organisms attack plants and how they spread through the garden goes a long way.

Disease prevention relies on a little background knowledge, especially since you're dealing with a largely invisible enemy. Plant diseases are caused by fungi, bacteria, and viruses. These disease-causing organisms, or pathogens, create disease by using portions of the host plant as both home and food. Once pathogens begin to feed, they cause a variety of symptoms. By carefully examining your plants for these symptoms, you'll be able to get a good idea of what type of organism is causing the problem. Once you've identified the type of disease organism that has infected your plants, you'll be able to treat it, or at least prevent it in the future. In many cases, you won't be able to identify the disease organism by species. Symptoms of diseases may be so similar that the only way to identify the causal organism is by lab analysis of afflicted parts, a service University Outreach and Extension can provide.

Not everything that goes wrong with a plant can be blamed on a disease. Insects can cause disease-like symptoms. An infestation of spider mites can cause yellowed, mottled foliage, and tunneling by borers can cause stem tips to wilt or die back. So when you inspect afflicted plants, be sure to consider insects as a possible cause of the damage.

Nematodes are small, eel-shaped worms, not visible to the naked eye that can parasitize plants and cause disease-like symptoms. Perhaps the most common of the plant-parasitic nematodes is the root-knot nematode. Above ground symptoms of this pest include weakened plants that wilt in the sun, yellow or pale green leaves, and stunted fruit or flowers.

There are also cultural disorders brought on by environmental stresses such as nutrient deficiencies that can mimic diseases. Some disorders, such as blossom end-rot on tomatoes, or tip-burn on lettuce, are caused by environmental stress in combination with a nutritional imbalance. Others such as tomato sunscald or potato black heart, are a product of the environment alone.

Appropriate environmental conditions are almost as important as healthy soils when it comes to disease prevention. You can't control the weather, of course, but your techniques can modify its effects. Proper soil conditions are crucial: well-drained, well-aerated soil helps to keep soil oxygen levels high enough for healthy root growth during warm, rainy periods that favor many pathogenic fungi. Adding organic matter to the soil on a regular basis encourages good drainage and aeration.

Beyond the Garden Gate



Kirksville Area
Master Gardener
Garden Tour
Theme: "Garden Party"
Sunday, June 22, 2003
11 am - 4 pm

Participating Gardens:

- Joyce Blodgett
- Sam & Sandy Fleak
- Peg Ernst
- Annabeth Chevalier
- Cheryl & Mike Engber

Tickets: \$5 each.

Advance tickets will be available at Edna Campbell bookstore and the Adair County Extension Center. Tickets will be sold the day of the tour at Brashear Park.

Plant Sale: A plant sale will be held at Brashear Park the day of the tour.



*There will be refreshments, music, and flower/garden display tables at each garden.

POSSIBLE PLANT PROBLEMS IN NORTHEAST MISSOURI

- Aphids have been found feeding on tender shoots of plants. They are found at the growing tips and on the undersides of leaves. I have seen them on honeysuckle, mums, and apple trees already, and they could be found on most plants, especially perennial flowers. Aphids cause leaves to curl and take on a wrinkled appearance. Insecticidal soap or liquid Sevin can be used for control. Get guidesheet G7274 on Aphids at your local extension center.
- Anthracnose has been found on Ash trees, and Maple trees. I haven't looked at sycamores yet, but if the others have it, the sycamores will too. Look for brown areas along leaf veins. Some leaves will be covered with it. Anthracnose may cause the trees to drop leaves prematurely. A person should not worry. The recent rains triggered anthracnose. There is no effective control at this time. When it stops raining and dries out, and temps get above 85 degrees, the fungus will not be able to survive, and the problem will start to go away. The trees should start to leaf out again in dry, warmer weather. Do an internet search on anthracnose if you need more information.
- Sawflies may still be active. Look for worms at the tips of pines, particularly mugo pines. Sevin can be used to control them.
- With the recent rain, we may start seeing Early Blight symptoms on tomatoes. Maneb and Daconil are the two fungicides recommended by our state vegetable specialist. Early blight symptoms include, lower leaves turning brown and dying, and drying up.
- A lot of vegetable plants have turned yellow or purple do to the recent rains. Too much water causes this.
- It is normal to find ants on Peonies. No control is necessary. Ants may be found on other plants or trees. No control is necessary to control ants.
- Pine trees may start getting some Blights. Look for black dots on the needles. These are the fruiting bodies containing millions of fungal spores. Bordeaux is recommended for many fungal problems on pines.
- Scale insects may be a problem on mugo pines and euonymus. Refer to Guidesheet G7274 on Scale at your local extension center.
- Fireblight is now a problem on apples and pear trees. Refer to Guidesheet G6020 on Fireblight for more information. Fireblight causes the leaves and twigs to turn a dark brown to almost black. The tree looks scorched. There will a bend in twig near the top of the twig/branch.
- I haven't seen them yet, but with the recent rains we may start to see fairy ring—the ring of mushrooms in yards. There is no good control method, other than to just keep breaking them off.
- Remember, if you can't find a guidesheet or information from your local extension center, please do an internet search at our University of Missouri website www.outreach.missouri.edu. Other good horticulture websites are University of Nebraska and Ohio State.

USING SOAP SPRAYS

Insecticidal soap sprays are contact poisons that are absorbed through the cuticle covering the pest's body. Once inside, they make cell membranes leaky, causing severe dehydration. Most vulnerable to soap sprays are aphids, scales, mites, and other soft-cuticled pests. Beetles, grasshoppers, and other pests with hard cuticles, are much less susceptible. The soap sprays remain potent only as long as they are wet, so spray in early morning or in the evening when lower temperatures and higher humidity slow the rate of evaporation. To avoid killing beneficials, keep the pesticide aimed specifically at problem species. Also, test spray a few leaves and inspect them for yellowing or other symptoms of injury before treating the entire plant.



PLANT PROFILE: *Verbena*

Scientific Name: *Verbena x hybrida*

Flowers: round, 3 inch wide clusters of small, brilliantly colored flowers; flower colors include violet-purple, hot pink, magenta, scarlet, white, and soft pink

Bloom Time: summer to frost

Size: 10-18 inches

Hardiness: zones 3-10

Culture: commonly grown as an annual or tender perennial; needs full sun, but will tolerate light shade; will

grow in poor to average soil that is well-drained; heat and drought tolerant.

Propagation: Sow indoors and germinate at temperatures between 70-75 degrees F. Verbenas are also easy to grow from cuttings taken in the spring or late summer to overwinter the plants indoors where they are not hardy.

Landscape Uses: Combine verbenas with other perennials that thrive in dry, well-drained soil, such as lavenders, yarrows, sedums purple cone-flower, globe thistle, and yuccas.

Disease & Insect Susceptibility: powdery mildew

PLANTING UNDER TREES

It is possible to install flower beds under large shade trees without building a raised bed, but you'll have to take several factors into consideration:



how much light and rain can penetrate the tree's canopy of leaves? How thick and shallow are the tree's roots? Even if enough light and rain reach the soil, shallow tree roots can be an almost prohibitive problem.

Tree roots do not grow straight down into the earth, as it is commonly believed; they grow in the top 18 inches of soil, spreading out far beyond the drip line. Roots can quickly invade flower beds and sap all the water and nutrients from them. Maples, sycamores, and beeches are among the worst offenders, and planting beneath them almost always ends in disappointment. Some trees, however, such as oaks and conifers, have deep-growing roots and can coexist well with other plantings. Beds planted beneath small trees with mature height of under 20 feet, typically do well, since such trees have smaller, less invasive root systems. If you find relatively root-free areas under trees where you can place plants, you are in luck; some of the most beautiful landscape scenes are made up of lush plants that thrive and look their best in the shade of handsome trees.

WHY DEADHEAD?

Removing flowers as they begin to fade is an important garden chore, and not for appearance alone. Some perennials, such as pincushion flower and 'Stokes' Aster, may stop blooming if they aren't attended to promptly, and a hybrid perennial allowed to go to seed may in time be crowded out by its less desirable offspring. Deadheading also stimulates some roses-hybrid teas, grandifloras, floribundas, and repeat-blooming climbers-to produce another round of flowers. Cut away the old blooms throughout the growing season, stopping several weeks before the first frost. You don't want to promote new growth that would be vulnerable to the cold. Many annuals need deadheading to keep blooming all summer and to look attractive

Not all plants require deadheading. Species, antique, and shrub roses, as well as climbers that bloom once per season, don't need this. Other plants such as rudbeckia and 'Autumn Joy' Sedum, have ornamental seed heads that enliven a garden through the fall and provide interest into the cold months of winter. would be vulnerable to the cold.

THE BEST GARDEN MONITOR

What's the best monitor of all for garden pests? You are! Unlike commercial growers who have hundreds of acres planted or greenhouses filled with thousands of plants, most home gardeners have the potential to examine all the plants in their gardens on a daily basis. Your own eyes can be more effective tools than fancy pheromone traps are. Here's how to be an effective garden monitor:

- 1) Tour your yard/garden early in the day when it's cool. Insects are less active then and will be easier to spot sitting on or under plants.
- 2) Take a hand magnifying lens with you. The added detail you'll see can help with identifying pests, and telling the pests from the beneficials.
- 3) Check all parts of your plants. Lift up leaves and look for pests on the undersides. Some fungal diseases, like downy mildew, first show signs on leaf undersides. Check around the base of stems where borers may have tunneled into your plants.
- 4) Carry a small notebook. Jot down notes to transfer later to the cultivar comparison records and weather diary in your garden workbook.
- 5) Check soil moisture periodically as you tour the garden. This can give you an early cue whether any of your plants need supplemental water.
- 6) Bring along a pair of pruning shears and a plastic or paper bag. That way you're always prepared to spot-prune diseased leaves or stems and safely remove them from the garden. You can also pull flowering weeds and put them in the bag for disposal.
- 7) Tuck a couple of empty pill bottles in your pocket, that way you can scoop up any unknown insects for later identification.

GARDEN TIPS FOR JUNE

ORNAMENTALS

Week 1

- Watch for bagworms feeding on many garden plants, but especially juniper and aborvitae.
- Deadhead bulbs & spring flowering perennials as blossoms fade.
- Thin seedlings to proper spacings before plants crowd each other.

Weeks 2-3

- Apply organic mulches as the soil warms. These will conserve moisture, discourage weeds, and enrich the soil as they decay.
- Most houseplants brought outside prefer a bright spot shaded from afternoon sun. Check soil moisture daily during hot weather.
- Rhizomatous begonias are not just for shade. Many varieties, especially those with bronze foliage do well in full sun if given plenty of water and a well-drained site.
- Apply a balanced rose fertilizer after the first show of blooms is past.
- When night temperatures stay above 50 degrees, bring houseplants outdoors for the summer.
- Apply a second spray for borer control on hardwood trees.
- Plant tropical water lilies when water temperatures rise above 70°.

Weeks 3-4

- Trees and shrubs may still be fertilized before July 4th.
- Softwood cuttings can be taken from trees and shrubs as the spring flush of growth is beginning to mature.
- Pruning of spring flowering trees and shrubs should be done after flowering.
- Continue spraying roses with a fungicide to prevent black spot disease.

VEGETABLES

Weeks 1-2

- Repeat plantings of corn and beans to extend the harvest season.
- As soon as cucumber and squash vines start to “run,” begin spray treatments to control cucumber beetles and squash vine borers.
- Plant pumpkins now to have Jack-O-Lanterns for Halloween.
- Early detection is essential for good control of vegetable pests.

Learn to identify and distinguish between pests & beneficial predators.

- Stop harvesting asparagus when the spears become thin.

Weeks 2-4

- Start seedlings of broccoli, cabbage & cauliflower to transplant in the fall garden.
- Soaker hoses and drip irrigation systems make the most efficient use of water during dry times.
- To minimize diseases, water with overhead irrigation early enough in the day to allow the foliage to dry before the nightfall.
- Set out transplants of brussel sprouts started last month. These will mature for a fall harvest.
- To maximize top growth on asparagus, apply 2 pounds of 12-12-12 fertilizer per 100 sq. feet, water well and renew mulches to conserve moisture.
- Control corn earworms. Apply several drops of mineral oil every 3 to 7 days once silks appear. Sprays of B.T. are also effective.

FRUITS

Week 1

- Oriental fruit moths emerge. Most serious on peaches where first generation attacks growing tips. Shoots will wilt. These should be pruned out.
- Thinning overloaded fruit trees will result in larger and healthier fruits at harvest time. Thinned fruits should be a hands width apart.
- Enjoy the strawberry harvest.

Weeks 2-3

- Renovate strawberries after harvest. Mow the rows; thin out excess plants; remove weeds; fertilize, and apply mulch for weed control.
- Summer fruiting raspberries are ripening now.
- Begin control for apple maggot flies.
- Spray trunks of peach trees and other stone fruits for peach tree borers.

Weeks 3-4

- Prune and train young fruit trees to eliminate poorly positioned branches and establish proper crotch angles.

TURFGRASS

All Month

- Water turf as needed to prevent drought stress.
- Mow lawns frequently enough to remove no more than one-third total height per mowing. There is no need to remove clippings unless excessive.
- Mow bluegrass at 2 to 3.5 inch height. Turfgrass growing in shaded conditions should be mowed at the higher recommendations.

GENERAL GARDENING

- A mailbox mounted on a nearby post makes a handy place to store and keep dry any small tools, seeds, labels, etc. frequently used in the garden.
- When using any gas powered equipment, be sure to allow the engine a few minutes to cool before refilling empty fuel tanks.

—Missouri Botanical Garden—



Garden Talk!

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