Vegetable Diseases

Garden vegetables can be attacked by a wide range of fungi, bacteria, viruses, and nematodes. Since no single control measure is effective against all diseases caused by these microscopic pests, gardeners must rely on a well-balanced defense to keep diseases in check.

One of the first steps in setting up a disease control program is correct identification of disease problems—the earlier the better. With quick action, you can control leaf spots, blights, and mildews within the same season. Other disease problems may not be treatable this season, but correct disease identification allows you to take preventive disease control measures next year.

Many garden vegetable diseases are easy to identify. Others may need the advice of someone more experienced, such as an Extension agent or plant pathologist. Disease is best identified on plants that are less than 50 percent damaged. Do not use dead plants.

If the Extension agent is unable to identify the disease, he or she can have a plant pathologist diagnose the diseased specimen for a small fee. The pathologist at Mississippi State will identify the disease and send you a report on how to control and prevent the disease. Additional information on diseases and nematodes that attack garden vegetables is available at your county Extension office.

Diseases take their toll in Mississippi gardens every year, but adequate planning and following the recommended disease controls methods will keep your losses to a minimum.

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**Information**

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Extension Service of Mississippi State University, cooperating with U.S. Department of Agriculture. Published in furtherance of Acts of Congress, May 8 and June 30, 1914. GARY B. JACKSON, Director
### Hancock County Events

**Garden Discussion Group**—10:30 a.m. Kiln Public Library. Meet with MSU Extension and Hancock County Library Staff as well as gardeners from around Hancock County and share experiences gardening. Swap plants with other avid gardeners. This garden discussion group is open to gardeners and aspiring gardeners of all experience levels. For more information, contact Kiln Public Library at (228) 255-1724.

**Hancock/Harrison County Cattlemen’s Association Meeting**—7:00 p.m. Knights of Columbus Hall, 22424 MS-603, Kiln. Meeting sponsored by SunSouth John Deere.

### Harrison County Events

**Hancock/Harrison Forestry and Wildlife Association monthly meeting**—11:00 a.m. until Noon. Sherry’s Country Kitchen located at 20180 Highway 53 in Gulfport, MS. All Hancock/Harrison CFWA members are welcome to attend.

### Pearl River County Events

**Pearl River- Stone County Forestry Association Meeting**—12:00 noon. The Sawmill Restaurant, 2205 Highway 49, Wiggins, MS. Anne L. Casey, De Soto District Ranger, will provide an update on longleaf restoration and invasive plant projects.

**Pearl River County Master Gardener Meeting & Field Trip**—Suburban Daylilies, 60 Serene Meadows Dr., Hattiesburg, MS. Lunch meeting to follow.

**Managing Wildlife in the Home Landscape**—11:00 a.m. until 12:00 noon. The Senior Center of South Pearl River County. Presenter: Dr. Eddie Smith, Pearl River County Extension Agent & County Coordinator. No RSVP required.

### Stone County Events

**Pearl River- Stone County Forestry Association Meeting**—12:00 noon. The Sawmill Restaurant, 2205 Highway 49, Wiggins, MS. Anne L. Casey, De Soto District Ranger, will provide an update on longleaf restoration and invasive plant projects.
Garden Calendar: June

Planting

- Plant Crape Myrtles in bloom to be sure of color.
- Replace turf in deep shade with ground cover: Liriope, Ajuga, or Jasmine. Set out Caladiums in shady areas.
- Plant summer annuals Ageratum, Cockscomb, Impatiens, Marigolds, Sunflowers, Four-o'clocks, and Periwinkle.
- Plant Tomatoes late this month to insure harvest late into fall. Cherry Tomatoes are a choice that are heat tolerant.
- Choose Daylilies now that they are in bloom for planting in your garden.
- Divide and replant Iris, cut leaves back to 6 inches after transplant.
- Plant Zinnias and Marigolds now for a second crop of flowers.
- Plant Snapbeans, Lima beans, Cucumbers, Eggplants, Peppers, Squash, and Tomato plants.
- Gladiolus planted now will give lovely fall blooms.

Fertilizing

- Fertilize Camellias with Azalea-Camellia fertilizer if not done earlier in the year.
- Fertilize Bermuda and Zosia grass. Fertilize Tomatoes, Cucumbers, and Zucchinis monthly with 5-10-10.
- Fertilize annuals and perennials.

Pest Control

- Mow lawn in the morning to reduce the chance of starting Brown Spot (fungus).
- Remove Zinnias with powdery mildew and replant.

Pruning

- Prune Oleander after blooming ends. Pinch Dahlias and Mums to assure a compact growth habit.
- Remove blackberry fruiting canes after harvest. Prune new canes to encourage side branching.
- Faded flowers should be removed from Daisy, Daylily, and other summer flowers.
- Prune out dead and damaged wood from trees and shrubs.

In Bloom

Organic or Inorganic Gardening – Which method is best for you?

Let’s face it, interest in organic gardening is increasing with much of the interest directed towards reducing or eliminating the use of conventional pesticides for controlling insects and diseases and/or eliminating the use of synthetic fertilizers. There are now many products in grocery stores labeled organic and people buy them, regardless of their increased price tag. Many claim that eating organically grown foods is much healthier than eating foods produced using conventional methods although there have been scientific studies that contradict such claims. To the contrary, there have been studies showing no difference in healthiness, taste, and environmental sustainability between the two methods. To be honest, it doesn’t matter which method you prefer, it’s your choice as an individual. Both methods can work, and both methods can be sustainable. But there are trade-offs when it comes to organic gardening.

Organic gardening in south Mississippi faces some serious problems with severe insect and disease pressures on vegetable plants. There are many effective conventional insecticides and fungicides but controlling diseases and insects by natural means alone is difficult. There are several insecticides available including Bt and spinosad formulations for caterpillar or larval control or pyrethrums for other insects, but disease control is difficult. Neem oil, bicarbonate, and copper- and sulfur-based fungicides provide some protection against diseases, but the best results for disease management come from selecting resistant varieties and proper timing and spacing during planting. For these reasons, organic gardening is easier on a small scale. Hand-picking insects, protecting natural predators such as ladybugs and assassin bugs and incorporating insect resistant plants such as chrysanthemums could help with insect control. Removing dead or diseased plant tissue, using healthy transplants, and watering in the morning will aid in disease management for both methods of gardening.

Organic fertilizers such as manures, compost or bone meal are derived directly from plant or animal sources and usually contain plant nutrients in low concentrations. Many of these nutrients must be converted into inorganic forms by soil bacteria and fungi before plants can use them, so they typically are more slowly released, especially during cold weather. They improve water movement into the soil and, in time, add structure to the soil. Organics feed beneficial microbes, making the soil easier to work. But they may cost more than inorganic fertilizers and are more difficult to apply because they are less concentrated, supplying fewer nutrients pound for pound. Fresh, non-composted manure can damage your plants as well, because some manure contains harmful amounts of salts and may be a source of weed seeds. If manure from grazing land is used, herbicide residue may harm garden plants. Conventional fertilizers usually contain only a few nutrients – generally nitrogen, phosphorus, potassium, sulfur and sometimes micronutrients, either singly or in combination. These nutrients are in a form readily available to plants and are available in slow-release form. Our soils in Mississippi often do not lack in micronutrients.

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Organic or Inorganic Gardening – Which method is best for you?

Too often the word sustainable is used synonymously with organic gardening while both methods have the potential to be sustainable. Sustainable can be described as the use of a resource in such a way that it does not harm the environment, is economically viable, and is socially responsible. Both methods can incorporate wise water-use practices, add organic matter to improve soil health, etc. But, one must also keep in mind, whether you do organic or conventional gardening, it doesn’t mean pesticide free. All the above-mentioned products are, indeed, chemicals used to control pests and are as safe as the user’s ability to apply them correctly. It’s the way they are used that can make a difference on the environment. Reading and following label directions, applying no more than recommended, and applying products targeted at specific insect or disease pests are three important components in successful gardening and protecting the environment for generations to come.

Photinia

Photinia, and particularly red tip photinia, is a common garden plant in the south. Unfortunately, they do require regular preventative maintenance to keep them looking good. The primary concern here is photinia leaf spot which is a fungal disease that first shows up as bright red spots. As the disease progresses, the spots will begin to merge and defoliation will begin to occur. While many folks are noticing these symptoms on their plants, it is too late to effectively control this growing season.

The control measures of this fungal disease are similar to those used when managing other common garden diseases. First, avoid overhead irrigation if possible. This may be difficult during high rainfall months, but reducing overhead sprinkler use will minimize the problem. Second, if the plant is expressing symptoms remove and destroy any diseased material that falls in the bedding around the plant. Also, avoid overfertilization and summer pruning. These practices stimulate lush new growth which can exacerbate the spread of this fungus. Lastly, if you have plants with a history of leaf spot you should consider a fungicide program including the active ingredients chlorothalonil, myclobutanil, propiconazole, triforine and triadimefon. These will need to be applied multiple times in early spring starting at bud break. Always follow the labeled rates and application instructions.
Edema

Often mistaken for an infectious disease or insect gall, edema (oedema, corky scab) is a common problem for plants when humidity is high or they get too much water. Edema is most frequently caused when plants take up more water through their roots than can be transpired through the leaves. Under these conditions, water builds up in the internal cells of the leaves eventually causing them to burst. This leads to areas of dead cells that are visible as a blister, usually on the underside of the leaf. Although almost any broadleaf plant may be affected, some plants, such as begonias, cacti, geraniums, ferns, violets, tomatoes and beans are particularly susceptible to edema.

Edema symptoms vary by the plant species and part of the plant affected. Usually, symptoms appear on succulent leaves and flowers as small, water-soaked blisters or warts. Individual blisters are approximately 1 to 2 mm in diameter, but may merge to form lines or large areas. The exposed area of the blister will frequently become brown or tan, with a corky texture.

Edema can be controlled by several cultural practices, as well as by changes in the weather. Avoid irrigation or watering during cool, overcast humid weather. For potted plants, remove the saucers under the pot or discard any water that remains in the saucer 30 minutes after watering. Additionally, avoid over-fertilization, especially when plants are growing slowly. Keep soil fertility at optimum levels by testing the soil and following fertilization recommendations. If you are aware of previous problems with edema, keep this in mind when selecting plants and if possible, improve drainage around the plant to prevent the plant from taking up too much water.

Espalier

An espalier is a plant that has been trained to grow in a flat place against a wall or trellis. This technique was originally used by the Romans and spread throughout Europe. Espalier is designed to be very good at conserving space in the garden but also serves as an excellent decorative accent. Espalier is especially effective against a blank wall as a substitute for a row of shrubs.

Almost any plant can be espaliered by continually directing its growth along the desired plane and removing growth in undesired directions. Plants that produce many flexible lateral branches are especially well suited to use as espaliers. Some well suited plants include Ligustrum, Red buds, hollies, crepe myrtles, citrus and apples.

Espaliers can be difficult to train and require significant maintenance. Pre-trained espaliers are often available at nurseries to make it easier and faster for the home gardener to have an elaborate and beautiful specimen. Plants to be espaliered should be planted 6 to 8 inches from the wall or support in well-drained soil. Often there is debris at the base of walls that will need to be removed and replaced with better soil with good organic content.

The training of the espalier can be in a formal or informal pattern. If using a formal design, carefully bend the branches into the desired positions and tie them into place. If no formal design is being followed, branches may be tied in their natural positions so long as no branches cross. To maintain the shape of the espalier, prune and tie new shoots to conform to the desired patterns. Prune all stray branches growing at right angles to the flat surface or any that grow beyond the boundary of the desired patterns.

Because of reduced airflow, espaliered plants can be more prone to disease and insect problems and should be monitored so that any problems that develop can be managed.
Quick Bites
June 2019

Quick Bites programs are offered through the Mississippi State University Extension Service and provide information in a wide variety of topics through interactive video. The programs are held during lunch (12-1 pm) on Thursdays. Sessions will be held in Bost 409 for those who are on campus. Contact your county office to participate via interactive video.

June 6
Summer Cuts for Successful Designs
Lynette McDougald, Instructor
Plant & Soil Sciences
Join us this month as Lynette shares some of her favorites for design. We will have lots of fun!

June 13
Growing Great Tomatoes
Dr. Rick Snyder, Extension Research Professor
Central R&E Center
Do you have tomatoes in your garden? Are they perfect? If not, plan on coming to join Dr. Snyder, our tomato expert for Extension!

June 27
Your First Year Beekeeping
Dr. Jeff Harris, Assistant Extension Professor
Biochemistry, Molecular Biology, Entomology and Plant Pathology
This presentation will provide guidance and how to start a colony of honey bees in the spring and properly care for it to give it the best chance of surviving its first winter. Topics include: installing nucs or packages of bees; feeding bees to draw wax combs; treating for varroa mites; and getting ready for winter.