

# Plant Wise

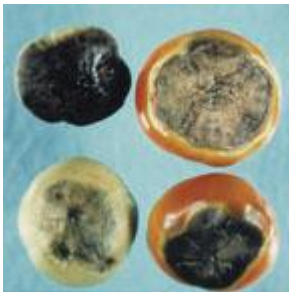
IOWA STATE UNIVERSITY  
University Extension

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## Trouble in the Tomato Patch



*Blossom end rot on tomatoes appears as a brownish black spot on the blossom end (bottom) of the fruit.*

By Richard Jauron  
Horticulturalist  
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Red, juicy tomatoes picked from the garden are a summertime treat. Tomatoes are easy to grow, but can be damaged by insects and diseases. Other problems, such as blossom end rot, fruit cracking and sunscald also can occur on tomatoes.

### Blossom end rot

Blossom end rot is a common problem on tomatoes. Secondary organisms invade the brownish black spot and cause the fruit to rot. Blossom end rot is most common on the earliest maturing fruit that ripen in July and early August.

Blossom end rot is caused by a calcium deficiency in the developing fruit. Wide fluctuations in soil moisture levels impair calcium uptake by the root system of the tomato plant. Excessive nitrogen fertilization may also contribute to blossom end rot.

To reduce blossom end rot, water tomato plants on a weekly basis during dry weather to provide a consistent supply of moisture to the plants. (Tomato plants require about 1 to 1-1/2 inches of water per week during the growing season.) Mulch the area around the tomato plants to conserve soil moisture. Avoid over-fertilization. Pick and discard fruit affected with blossom end rot. The removal of the affected fruit will allow the tomato plant to

channel all of its resources into the growth and development of the remaining fruit.

### Fruit cracking

Another common problem is fruit cracking. Cracks usually appear at the top or stem end of the fruit. Cracks radiate out from the stem (radial cracks) or circle the fruit in concentric rings (concentric cracks). Like blossom end rot, fruit cracking is associated with wide fluctuations in soil moisture levels. A heavy rain or deep watering after a long, dry period results in rapid water uptake by the plant. The sudden uptake of water results in cracking of ripening fruit. Generally, fruit cracking is most common on the large, beefsteak-type tomatoes.

As with blossom end rot, fruit cracking can be prevented by supplying the tomato plants with a consistent supply of moisture during the summer months. Conserve soil moisture by mulching the area around tomato plants with dried grass clippings, straw, shredded leaves or other materials. Also, plant tomato varieties that possess good crack resistance.

### Sunscald

Initial symptoms of sunscald are shiny white or yellow areas on the sides of the fruit exposed to the sun. Later, the affected tissue dries out and collapses, forming slightly sunken, wrinkled areas. Secondary organisms invade the affected areas causing the fruit to rot. Sunscald occurs on fruit exposed to the sun during periods of extreme heat.

Losses due to sunscald can be reduced by growing tomatoes in wire cages. Cage grown tomato plants provide good foliage protection for the fruit. Also, control Septoria leaf spot and other foliar diseases, which defoliate the plants and expose the fruit to direct sunlight.

Despite the loss of a few tomatoes to blossom end rot, fruit cracking or sunscald, most tomato plants will produce a good crop with proper care. A bacon, lettuce and tomato sandwich sure sounds good right about now.

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# Japanese Beetle Season is Underway

By Jorden Kolpin  
Plant & Insect Diagnostic Clinic  
Iowa State University Extension



The first reports of the Japanese beetle for the year have been received. And so it starts.

The Japanese beetle has been one of the most troublesome urban insect pests in the eastern U.S. since it was imported into New Jersey with ornamental plants from Japan in about 1916. It has spread on its own and with nursery stock and sod throughout the eastern half of the U.S. Japanese beetles have been present in Iowa since 1994 and have been reported in 44 of Iowa's counties. See the map below.

REPORTED JAPANESE BEETLE DISTRIBUTION IN IOWA  
1994 TO 2009



Adult Japanese beetles are present from late June through August. They feed on the foliage and fruits of over 350 kinds of plants but are best known as pests of fruits, vegetables, garden flowers, trees and shrubs. Their feeding causes scarring on the surface of fruits and chewing damage on leaves and destruction of flowers. They prefer roses, raspberry, grape leaves, and crabapple and linden tree foliage.

Control of adult beetles is difficult because they emerge daily for a period of several weeks. Handpicking or screening on high-value plants may be of benefit in isolated situations with limited numbers of beetles. Spot spraying infested foliage of high value plants with carbaryl (Sevin), permethrin (Eight) or cyfluthrin (Tempo) may reduce damage for several days, but multiple applications are required to maintain control. Spraying the adult stage is not an effective strategy for prevention of grub damage to turf, and treatment of turf does not prevent adult damage to ornamental plants. Tree foliage can be protected with a soil-drench

application of systemic insecticide, though best results are achieved when treatments are applied several weeks ahead of beetle emergence.

Use of a floral lure and sex attractant traps is not recommended. Research at the University of Kentucky showed that the traps attract more beetles than they catch, and plants near the traps may have more damage than if no traps are used at all.

*Editor's note:* I noticed the first Japanese beetle in my garden this year on June 20. It didn't take long (a matter of a day or two) before I was seeing them munching away on at least a dozen different kinds of plants; from vegetables, to flowers, to ornamental grasses! I was a bit squeamish the first few days about grabbing them, placing them on the ground and stomping them. I made sure I had a good pair of gloves on every time. I even tried cutting them in half with my clippers so I wouldn't have to feel their fat, little bodies, squirming between my fingers. You have to be fast and precise to make that work! I wasn't very successful.

But there is just something about seeing a plant you have nurtured and cared for and enjoyed the beauty of being completely decimated by this nasty little insect. 10 days later and I have overcome all reservations, hesitations, and reluctance. I am now....Beetle Slayer. Forget the gloves, no more stomping - that takes too long, clippers? - get serious. Now I simply pick the little buggers off my plant and squish! Thumb and forefinger are the only tools I need. I can kill dozens in a matter of minutes. So do I really think my actions are going to decrease the overall population of Japanese beetles in our part of the state? Of course not, but in my little corner of the world, in my garden, there are many Japanese beetles that will **not** be making a banquet of my favorite plants!



# Invasion of the Multi-legged Creatures from the Back Yard

Excerpts from two articles by:  
Dr. Donald Lewis  
Department of Entomology  
Iowa State University

Household invasion by several / dozens / hundreds / thousands / millions of millipedes (take your pick) is again a common problem across Iowa. Some background information may be useful.



Millipedes live outdoors in damp areas such as under leaves, needles and dead plant debris, or in cracks and crevices. They feed on damp and decaying vegetable matter and are beneficial as "recyclers" of organic matter. However, they become pests when they migrate into buildings as accidental invaders. They are most active at night and usually hide during the day in cracks and other moist locations.

Millipedes are harmless; they do not feed upon building structures or furnishings and they cannot bite or sting. Millipedes cannot reproduce indoors. All millipedes found inside wandered in by mistake.

## Why so many?

Millipedes enjoy a damp location, but do not tolerate overly wet or saturated ground. The recent rains have put them on the move with nocturnal migrations to more suitable locations. It adds up to a real mess for large numbers of home and business owners.

## What to do?

Unfortunately, chemical control of millipedes is not easy nor is it certain. Residual insecticides applied outdoors (to reduce their numbers at the source or to prevent entry) are not terribly effective. Breeding sites may be a long distance from the building and will be difficult to treat because of the organic cover at the site. Still, residual insecticides such as Sevin, permethrin, Dursban, and diazinon can be applied in a 5- to 20-foot wide barrier around the building to reduce entry. Thorough application will aid in control, but reliance on chemical control alone is often unsatisfactory.

Cracks, gaps and other points of entry around windows and doors and in foundation walls should be sealed if possible. The indoor use of household insecticides provides little if any

benefit. Millipedes that wander indoors usually die in a short time because of the dryness, and spraying cracks, crevices and room edges is not very useful. Sweeping or vacuuming up the invaders and discarding them is the most practical option.

One of the disturbing sites around the home is a house centipede darting across the bathroom counter. It's enough to make anyone flinch. But before you grab the slipper to mash the unfortunate critter, let's learn more about them.



First, centipedes are beneficial. They are predators and they eat small insects, insect larvae, and spiders. That's a good thing, though most homeowners take a different point-of-view and consider them a nuisance.

Need more good news? Centipedes are harmless to people, pets and property. The common house centipede has an elongate, flattened, segmented body with one pair of legs per segment. There are 15 pairs of very long, almost thread-like, slender legs on the 1 1/2 inch long body. Each of the 30, fragile-looking legs is almost equal to the length of the body and is encircled by dark and white bands. The body is brown to grayish-yellow with three dark stripes on top.

Though house centipedes are found both indoors and outdoors it is the occasional one on the bathroom or bedroom wall, or the one accidentally trapped in the bathtub, sink, or lavatory that causes the most concern. However, these locations are not where they normally originate. Centipedes prefer to live in damp portions of basements, closets, bathrooms, unexcavated areas under the house and beneath the bark of firewood stored indoors. They do not come up through the drain pipes.

## Centipede or Millipede?

Both centipedes and millipedes are wormlike, multi-legged animals (and therefore, detested). Both are frequently noticed in the garden or house. Telling the two apart is fairly easy if you allow yourself to get close enough to count the number of legs present on any mid-body segment. Millipedes, the harmless "recyclers" of garden mulch, have two pairs of legs per body segment, twice the number of legs found on centipedes.

If you have more centipedes in your house than you can stand (remember they are beneficial) try to dry up and clean, as much as possible, the areas that serve as habitat and food source for centipedes. Residual insecticide sprays and dusts can be applied to potential hiding places such as dark corners in basements, baseboard cracks and crevices, openings in concrete slabs, under shelves, around stored boxes, and so forth, but their effect is very limited. Better to live and let live or capture and discard the occasional nuisance.

## Upcoming Horticulture Events of Interest:

### **Glenwood Lake Park Farmers Market**

Wednesdays, June 2 to Sept. 8 4:00PM – 7:00PM

Vendors offering locally-grown garden and orchard produce, baked goods, eggs, & crafts.

ISU Mills County Master Gardeners will again have a question/answer table to help you solve your garden problems.

### **Silver City Farmers Market**

Saturdays throughout the summer 8:00AM – 11:30AM

ISU Mills County Master Gardeners on hand to answer all your gardening questions!

### **Ask a Master Gardener**

Wednesday Evenings, 6:00PM – 8:00PM

Located at the Mills County Extension office in Malvern.

Call in or come to the office with your questions and/or samples during the extended office hours this summer! Master Gardeners will be able to help you identify weed, insect, or disease problems as well as answer questions about specific plants, planting recommendations, and more!

### **Mills County Fair**

Saturday, July 17

Open Class Floriculture & Agriculture

Entries received at the Mills County Fairgrounds

8:00AM – 12:00 Noon

### **Enter your Flowers and Vegetables!**

Open Class fair books are available at area banks, libraries and the Extension Office.

### **Summer Webinar – 2<sup>nd</sup> Session**

Tuesday, July 27 (see following article)

### **Armstrong Research Farm Garden Field Day**

Wednesday, July 28 6:30PM

53020 Hitchcock Avenue, Lewis, IA

This year's field day will feature: annual flowers grown in a quilt pattern, a compost trial growing flowers and vegetables, a variety of eggplants, coleus, and petunias, a pumpkin-growing competition, growing unusual plants such as tomatillo and ground cherry.

The research farm is about an hour's drive from Glenwood. This is always an informative and enjoyable evening, ending with homemade ice cream and strawberries!

For more information, go to [www.ag.iastate.edu.farms](http://www.ag.iastate.edu.farms)

### **2<sup>nd</sup> Annual All Horticulture Field Day**

Thursday, July 29 Registration begins @ 8:00AM

Iowa State University Research Station (north of Ames)

A variety of the research, teaching, and extension projects happening at the farm will be showcased.

Go to [www.hort.iastate.edu/](http://www.hort.iastate.edu/) for a complete list of presentations and details about the day. Pre-registration is suggested.

Cost for the day is \$20 and includes lunch

Call 624-8616 for more information.

## SUMMER WEBINAR SERIES!

Iowa State University Extension presents

### **Gardening Green 2010**

Brought to you by the Iowa Master Gardener program

*The second and third sessions of this series will be presented in July and August.*



**Dates:** July 27, and August 24

**Time:** 6:30 – 8:30 PM

**Location:** Mills County Extension Office, Malvern

**Who:** All are welcome!

**Cost:** \$5.00 per session

*No pre-registration required*

#### **Organic Gardening for Homeowners – July 27**

This session will outline the basics of how to manage your landscape organically. Pest control for vegetable gardening and ornamentals will be discussed. Dr. Kathleen Delate, Dept. of Horticulture and Agronomy, Iowa State University, will present this session.

#### **Rain Gardens in Iowa – August 24**

This session will illustrate the design and maintenance of rain gardens as a best management practice (BMP) for storm water management in your landscape. Soil preparation and appropriate plant species selection will be emphasized. This topic will be covered by Dr. Ann Marie VanDerZanden, Dept. of Horticulture, Iowa State University.

**Please join us this summer to learn more about these timely topics in gardening!**

# Ask the ISU Extension Gardening Expert

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## **A large evergreen was partially uprooted in a storm. Can I save it?**

Tree roots are not as deep as most people imagine. Most tree roots are located in the top 12 to 18 inches of soil. While tree roots are quite shallow, they often extend out into an area that is two to three times larger than the crown area. One of the chief functions of a tree's roots is to "anchor" the tree and keep it upright.

While a tree's roots are normally able to keep it upright, strong winds in storms can partially or completely blow over trees (especially when soils are wet).

It may be possible to save small, partially uprooted evergreens (those with 50 percent or more of their root systems intact and 10 feet or less in height) by carefully pulling them back upright and staking them. Evergreens taller than 10 feet probably can't be saved. Even if a large evergreen could be pulled upright, it will likely die within a short time because of the extensive root damage or be blown over again in a future storm.

If you decide to attempt to reset a partially uprooted tree, it could be several years before you know if the tree will survive. It will likely take a number of years for a tree to replace lost or damaged roots. If a tree can't produce enough food (energy) to rebuild its root system, the tree will become stressed and susceptible to disease and insect pests that might cause its death.

## **When do I harvest currants?**

Currants typically ripen over a two-to-three-week period. Fully ripe currants possess the characteristic color of the variety (red, white or black), are slightly soft and juicy. For jellies and jams, harvest currants before the berries are fully ripe. Fruit harvested for jellies and jams should be well-colored, but still firm. Natural levels of fruit pectin are higher in berries that are not fully ripe. Harvest currants by picking the fruit clusters (strigs) rather than the individual berries. After picking, the individual berries can be stripped from the stems. Currants can be stored in the refrigerator at 35 to 40 degrees Fahrenheit for approximately two weeks.



## **How do I prevent damage to my squash plants from the squash vine borer?**

The squash vine borer is a common pest of squash and pumpkins in home gardens in Iowa. Damage first appears as wilting of the vines. Eventually, affected plants may collapse and die.

The adult squash vine borer is a wasp-like moth. Adult borers emerge from the ground in late spring. Adult females lay eggs at the base of squash and pumpkin vines. Within a few days, the eggs hatch and the larvae bore into the stems to feed. Larvae feeding in the center of the stems block the flow of water to the rest of the vine, causing it to wilt. Severely affected plants wilt and die. The larvae feed inside the vines for several weeks, then exit the stems and borrow into the soil to pupate. They remain in the soil until late spring of the following year.

Preventing squash vine borer damage usually requires treating the base of squash and pumpkin vines with a residual insecticide when the moths are flying (early to mid-June in Iowa). Home gardeners can apply carbaryl (Sevin), permethrin (Eight), bifenthrin, spinosad or other labeled garden insecticides. Sprays are generally more effective than dusts.

## **A yellow, foam-like growth has suddenly appeared in my mulched perennial bed. What is it and will it harm my plants?**

The growth in your perennial bed is probably a slime mold. Slime molds are types of fungi. Slime molds feed on bacteria and other organisms in the mulch. They do not harm plants.

Slime molds are usually a temporary nuisance. Within a few days, slime molds typically dry up and turn into white, powdery masses. Most individuals simply let the slime molds dry up and fade away. However, the slime molds can be scooped up and discarded if you find them objectionable.

## **What can I use as mulch around my tomato plants?**

Several organic materials can be used as mulch around tomato plants. Suitable mulching materials include dry grass clippings, shredded leaves, straw and pine needles. Do not collect grass clippings from lawns that have been treated with a broadleaf herbicide until the lawn has been mowed at least two or three times after the herbicide application. An application of two to three inches of material is usually sufficient.

## **My crabapple has begun to drop some of its leaves. Why?**

The leaf drop is probably due to apple scab. Apple scab is a fungal disease. It's caused by the fungus *venturia inaequalis*. Cool, wet weather in spring favors apple scab development. Crabapple varieties differ in their susceptibility to apple scab. Some varieties are very susceptible to the disease, while others are resistant to apple scab.

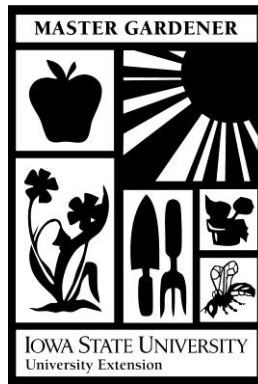
Apple scab appears as velvety, olive-green to black spots on the crabapple leaves. Heavily infected leaves turn yellow and fall from the tree. Highly susceptible crabapple varieties may lose a large percentage of their

leaves by mid-summer. Fortunately, apple scab does not kill affected trees. The damage is mainly aesthetic.

Apple scab can be prevented by applying fungicides from bud break through mid-June. For most home gardeners, however, controlling apple scab with fungicides is not practical. Sanitation also plays a role in controlling apple scab. Raking and destroying the leaves as soon as they fall should help reduce the severity of the infection next season. However, the best way to prevent apple scab is to plant scab resistant crabapple varieties.

## Master Gardener Classes Coming This Fall

If you have an interest in gardening and would like to volunteer in your community, consider joining the Iowa Master Gardener program. Whether you are a long-term veteran of gardening or a novice, you are welcome to join. A new series of training classes will begin this September!



Since 1979, the Iowa Master Gardener program has trained over 9000 people. The Master Gardener program is unique both for its community emphasis and because it directly utilizes the broad research-based resources of Iowa State University.

The dates of the classes are: September through October 2010. They will be held on Tuesday and Thursday evenings, 6:15 - 9:30PM. There is also one Saturday "class on campus" in Ames in late October. The classes will begin on Thursday, Sept. 9 with an orientation. The first training session will take place on Tuesday, Sept. 14.

We'd love to have you join us!!

Visit [www.extension.iastate.edu/mills](http://www.extension.iastate.edu/mills) for more information and a registration form.

### Resources for Horticulture information

ISU's Hortline at (515) 294-3108

(Monday-Friday, 10 a.m.-noon, 1-4:30 p.m)

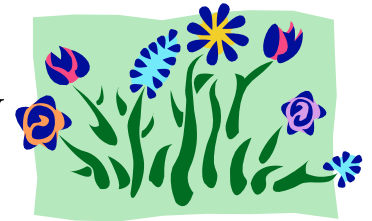
ISU/Mills County Extension: 712-624-8616

[www.extension.iastate.edu/mills/yardgarden.htm](http://www.extension.iastate.edu/mills/yardgarden.htm)

### Horticulture Publications on-line

[www.extension.iastate.edu/store](http://www.extension.iastate.edu/store)

# JULY GARDENING TO DO LIST



- Remove suckers at the base of crabapples
- Continue to control weeds in vegetable and flower gardens
- Help control mosquitoes by eliminating all sources of stagnant water in the landscape.
- Certain pesticides have a waiting period of several days between the time of last spray and harvest. Read and follow directions on all pesticide labels before applying them to vegetable crops. Wash all produce thoroughly before use.
- Harvest herbs for drying before they flower.
- Continue deadheading plants to prolong bloom, prevent unwanted seedlings, and improve the overall appearance.
- Remove canes of summer-bearing red raspberries after last harvest.
- Water tomatoes consistently to avoid problems with splitting and blossom-end rot.
- Divide and replant bearded irises every 3 to 5 years. Discard any diseased or damaged rhizomes and the old center portion. Cut back the leaves to 6 inches.
- Continue to harvest beans and squash to keep plants productive.
- Raise the mower blade to prevent injury to the grass during summer heat.

## Iowa State University Publications

PM 820	Garden Soil Management (free)
PM 1266	Tomato Diseases and Disorders (\$3.75) Full color 12p.
PM 683	Composting Yard Waste (free)
PM 534	Planting & Harvesting Times for Garden Vegetables (Free)
PM 1887	Selling Fruits and Vegetables (free)
PM 1777	Iowa Master Gardener brochure (free)

*Extension programs are available to all without regard to race, color, national origin, religion, sex, or disability.*