

# Down the Garden Path



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## GARDEN

### My Tomato Plants have Spots!

*Rick Latin, Extension Plant Pathologist*

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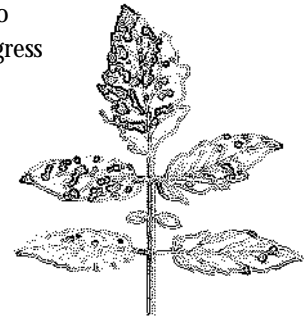
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### PUZZLE MANIA

Septoria leaf spot is one of the most serious infectious diseases that plague garden tomatoes each year. Just about the time that fruit begin to ripen, many gardeners notice dead or decaying lower leaves. More often than not, the decline is caused by numerous spots on leaves and petioles which may start appearing on upper leaves by the first harvest. The small circular spots (1/16 to 1/8 inch in diameter with gray centers and darker margins) are typical of those infected with the Septoria leaf spot fungus. The pathogen initially attacks less vigorous plants and plant parts, but infections on apparently healthy plants will occur in time.

The Septoria fungus can overwinter on infested residue in the garden. Therefore, presence of the disease is almost assured each year. Splashing rain is largely responsible for spreading spores from leaf to leaf and plant to plant. On a single plant the disease can progress rapidly from lower foliage to new growth during wet weather.

Protection is the key to avoiding serious tomato plant damage and yield loss, especially in gardens with a recent history of the disease. Fungicides should be applied well in advance of the appearance of leaf spots on lower leaves. That usually means an initial spray should be made in early July in southern Indiana, and by mid-July for central and northern parts of the state. Fungicides applied at two week intervals are normally sufficient to prevent a severe outbreak of disease. If more than one third of the plant is already consumed by the fungus, fungicide sprays may be futile. Several effective fungicides should be available at local garden suppliers and nurseries. ☺



## THE GRAPE VINE

### Rust in Turf Grasses

Don Scott, Extension Plant Pathologist

Rust has become a significant problem in some home lawns and other turf grass areas. Homeowners often first recognize the disease when they walk through a lawn and find that their shoes and pants cuffs are coated with an orange to reddish powder. The powder-like material is actually millions of microscopic spores produced by the fungus on infected grass plants.

There are several different rust fungi that cause rust. The most common one (*Puccinia graminis*) infects Kentucky bluegrass, annual bluegrass, fescue, and ryegrass. A separate species, *Puccinia zoysia*, can infect zoysia grass.

Rust becomes a problem when grass plants are growing slowly. When grass plants are growing fairly rapidly, leaf tissues are removed by mowing at relatively frequent intervals, and the disease does not become apparent. Rust fungi are obligate parasites (can reproduce only in living tissues). Therefore, when leaf tissue is removed by mowing, the fungus dies. With grass plants that are growing slowly, the fungus has sufficient time (7-14 days) to produce the microscopic spores in infected leaf tissue. These spores are then wind-blown or splashed by rain or irrigation to other leaves where new infections can occur.

Rust infections first appear as minute yellowish flecks in infected leaf blades. The flecks enlarge as infection matures, and small, erumpent pustules appear beneath the epidermis of leaves. The pustules are formed as the fungus produces the microscopic spores. Later, the number of spores produced exert pressure on the leaf epidermis and it ruptures and releases hundreds, if not thousands, of orange to reddish-brown spores. Leaf infections occur most frequently when days are dry and windy followed by heavy dew formation at night. The dry, powdery spores are easily disseminated by wind currents.

Rust, by itself, rarely kills a grass plant, unless other stress factors are involved. Rust infected plants are weakened. When the disease continues into late fall, infected plants may become more susceptible to winter injury. Young seedlings are highly susceptible, and proper water and fertility management may be required for early fall seedings.

The rust fungi rarely survive the winter in Indiana. The fungi survive winters in infected tissues in the southern and southwestern states. Spores of the fungi are wind-borne in spring and summer from those areas and the disease moves northward into Indiana and surrounding states usually in July and August.

Control of rust in the home lawn is best accomplished by fertilizing and irrigating to promote grass growth. Do not promote excessive growth. Water infrequently, but deeply. Irrigate during the early part of the day. Irrigate at a time that will permit complete leaf dryness before dew formation. Watering in the evening will increase the length of time that free moisture is on the leaves, and will increase the chances of infection. Mow frequently and collect clippings when possible.

Several fungicides will aid in the control of rust, but multiple applications are generally required. Products containing the fungicides chlorothalonil (Daconil Weather Stik, Thalonil, etc.), mancozeb (Fore, etc.), myclobutanil (Eagle, etc.), propiconazole (Banner, etc.), triadimefon (Bayleton, etc.), or others are available for commercial applicators. Homeowners may find products containing chlorothalonil or mancozeb being sold under various trade names at garden supply stores or nurseries. ☺

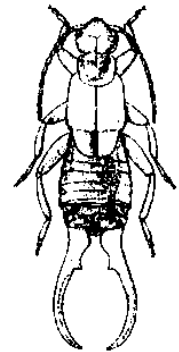
## OVER THE BACK FENCE

**Q:** I would like to know how to get rid of the earwigs in my home? They are driving me mad!

**A:** Earwigs are black or brown colored, slender, somewhat flattened insects that may or may not have wings. The most noticeable characteristics of this insect are the forceps-like cerci or pincers which extend from its back end. The name "earwig" is derived from an old superstition claiming that these insects enter people's "ears" at night while they sleep. Fortunately, this belief is entirely without foundation. Earwigs do not bite, but if handled, will attempt to pinch with their cerci. If successful, they can inflict a painful pinch.

Although these pests are most often noticed inside homes at night, they originate outside. Flower beds and vegetable gardens near the foundation of the home are common earwig breeding sites, where they feed on decaying vegetable matter and sometimes other insects. In most cases, they will not bother plants growing there.

To control this insect indoors, use a residual spray such as chlorpyrifos, diazinon, or carbaryl. Dust formulations are preferred in areas of the home that are dry. Outdoor applications should be made around foundations, crawl spaces, vents, flower beds, and turf within a few yards of the building. Granular insecticide applications in turf grasses and mulched areas give great results! Always read and follow all label directions before using pesticides. --Timothy J. Gibb / Corey K. Gerber ☺



## YARD

### It's a bird, no it's a plane, no it's a Cicada Killer Wasp!

Timothy J. Gibb and Corey K. Gerber,  
Entomology Diagnosticians

Based on the numbers of calls, it seems that cicada killer wasps are in high numbers this year. Cicada killer wasps are large, yellow and black wasps that evoke a good deal of fear among people. They may fly about people, hover in



front of their heads, or even dive-bomb them, but this is all in show. In fact, most of the wasps seen are males patrolling a nesting area. Females, which are much larger than the males, do not defend their burrows, and can elicit a painful sting if provoked.

Although the cicada killer is a solitary wasp, it often occurs in nesting aggregations of ten or more individuals. Each female cicada killer digs a burrow in a well drained, light textured soil, typically in an area with full sunlight; in which she captures and places paralyzed cicadas with her young. The larvae feed on the paralyzed cicadas and then overwinter in their burrows. Emergence takes place the next July as adults. Between late July and mid August, adults dig new soil burrows, stock them with cicadas, and the cycle is repeated. Adults die by late September/early October. Problems with cicada killers may persist for several years in the same location. Control, if needed, includes the use of Dursban, Diazinon, or Sevin at label rates. Apply treatments to the nest and surrounding areas. A retreatment in one to two weeks may be required if wasp activity persists. For additional information, please refer to publication E-63, *Solitary Bees and Wasps: Carpenter Bee, Cicada Killer and Mud Daubers.* ☺

## Start Working Now to Improve Your Lawn for Next Year - Part 2

Zac Reicher, Extension Turfgrass Management Specialist

In the last issue of *Down the Garden Path*, we covered how to improve lawns that needed reseeding. But since most of us may still be fairly happy with our lawns and may not be willing to reseed (OK you're lazy like me), we can still dramatically improve our lawn with a little bit of fertilizer and perhaps some weed control.

September is the most important time to fertilize a cool season turfgrass species. At this time of year the rate of photosynthesis is much greater than the rate of respiration. This means that carbohydrates, the energy source for the plant, are being produced more rapidly than they are being utilized in the respiration. The surplus carbohydrates can then be used by the turf plant to produce new tillers or rhizomes. Both of these structures will increase the density of the turf stand. Fall is also a period of exceptional root growth. Thus fertilization at this time promotes repair from summer damage both above and below ground.

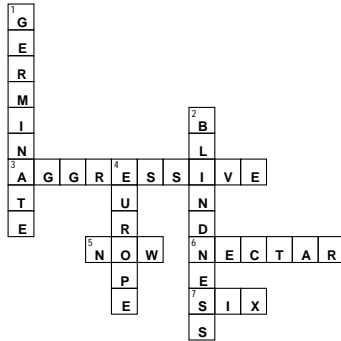
Fertilization should be done in mid-September with a product that has a nutrient ratio of nitrogen, phosphorus and potassium of about 4-1-2. Examples of fertilizers with this ratio would be 24-6-12 or 20-5-10. The fertilizer should be applied at the rate of one pound actual nitrogen per 1000 sq. ft. Applying the nitrogen at this rate insures that adequate amounts of phosphorus and potassium will automatically be applied. The fertilizer should be watered in after application if possible.

A second fertilizer application should be made after the last mowing of the year, but while the turfgrass is still green. For late fall fertilization to be effective the turf must be green. This is not a dormant fertilization. Generally, the second or third week of November would be the recommended time to fertilize. A soluble nitrogen source, such as urea, is very effective for late fall fertilization. The nitrogen should be applied at the rate of 1.5 lbs. actual nitrogen per 1000 sq. ft. Nitrogen is the most important nutrient to apply for a late fall fertilization.

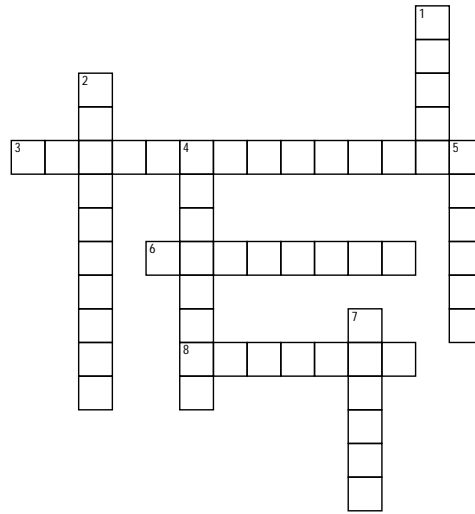
Two applications of fertilizer should be adequate to maintain or improve most lawns this fall. A third application in mid-October could boost your lawn even more if it was especially thin after this summer. Apply 1.0 lb. N/1000 sq. ft. in with a soluble nitrogen source, such as urea but be sure to reduce the rate of application of the November fertilization to 1.0 lb N/1000 sq. ft.

Applications of fertilizer in the fall will help the turf, which in turn should be able to crowd out many lawn weed problems. But if you've tangled with dandelions in the past, try applying a broadleaf weed herbicide this fall rather than in the spring. Pick a sunny day with moderate temperatures, no wind and when there is ample moisture present in the soil. Under these conditions, herbicide is rapidly taken up through the leaves of the weed and is quickly transported throughout the rest of the plant which enhances the ability of the herbicide to control the weed. An application at this time of the year should control dandelions, plantain, wild violets, clover, and black medic among other weeds. A herbicide containing 2,4-D, MCPP, and dicamba will control most broadleaf weeds with one application. Read and follow all directions on the herbicide label when using the product. Be careful when using these products because they may damage desired vegetation such as flowers, trees, shrubs, or vegetables. ☺

The answer to the puzzle from the last issue (No. 101) is shown below.



## PUZZLE MANIA



**Peggy Sellers**, Editor  
**Janet Whaley**, Subscriptions

**Dan Childs**, Weed Science  
**Corey Gerber**, Entomology  
**Timothy Gibb**, Entomology  
**B. Rosie Lerner**, Horticulture  
**Karen Rane**, Plant Pathology  
**Zac Reicher**, Turfgrass Agronomy  
**Gail Ruhl**, Plant Pathology  
**Cliff Sadof**, Entomology

### Across

- 3 At this time of year the rate of this is much greater than respiration.
- 6 This is the most important nutrient to apply for a late fall lawn fertilization.
- 8 The Septoria fungus overwinters on this.

### Down

- 1 The most noticeable characteristics of an earwig are these.
- 2 This is the key to avoiding serious tomato plant damage and yeild loss.
- 4 The cicada killer is this type of a wasp.
- 5 Rust becomes a problem when grass plants are growing like this.
- 7 The organism that causes rust in turf is a \_\_\_\_\_.

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