

Down the Garden Path



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Plant & Pest Diagnostic Laboratory

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GARDEN

Disease Control for the Home Grape Grower

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Grapes are one of the most popular home-grown fruits. They are relatively easy to grow and live for many years. Though there are a number of diseases and insect pests of grapes, the most common problem growers encounter with grapes is black rot. Black rot is a disease caused by the fungus *Guignardia bidwellii*.

The fungus infects the fruit while it is green, causes the berries to turn brown, and eventually shrivel to a hard black mummy. During wet years it can cause severe losses. The fungus survives the winter primarily on mummified fruit. Sanitation is a key method of controlling the disease. Research has shown that if the mummies are left hanging in the vine, they will release spores all summer long. If, however, the mummies are removed from the vine and deposited on the ground they will produce and release spores for three to four weeks only during May and June. If the mummies are disposed of by burial, or are removed from the vineyard, then no spores will be released. So, by simply removing the old rotted clusters from the vine growers can greatly reduce the potential amount of disease. Despite your best attempts at sanitation, some chemical applications are likely to be necessary, especially during wet years. Wild grapevines are so common in Indiana that there is almost always some fungal spores around.

The primary strategy for controlling black rot involves applying fungicides. The proper material must be applied at the proper time to achieve satisfactory results. The best times to apply fungicides are during the early part of the season, specifically from just before bloom until about two weeks after bloom. Bloom usually occurs from mid-May to mid-June in Indiana. Make an application prior to bloom, another 7-10 days later, and a third two weeks post-bloom. These three sprays are the most important for controlling black rot.

The best fungicides to control black rot in the home planting are captan, ferbam, copper, and Bordeaux mixture. Most multi-purpose fruit sprays for home use contain the fungicide captan plus two insecticides. Since insecticides are seldom needed on grapes, use of a general purpose spray includes unnecessary application of insecticides. Most of these fungicides can be purchased at lawn and garden centers. Captan and ferbam are probably the best choice. Coppers and Bordeaux mixture are not compatible with other pesticides and can injure plant tissues if applied incorrectly. Be especially sure to follow all label directions when using these products.

Purdue's Extension Publication ID-146, *Managing Pests in Home Fruit Plantings*, has a full discussion of pesticides and their use. It is available online at < <http://www.agcom.purdue.edu/AgCom/Pubs/pdflinks/ID-146.html> > or from your local county Cooperative Extension Service Office. ©



YARD

Controlling Spruce Spider Mites

Cliff Sadof, Ornamental Entomologist

Spruce spider mites are out and damaging spruce, hemlock, juniper, arborvitae and other conifers. These tiny eight-legged animals that are closely related to spiders and feed on plant leaves by piercing leaf tissues and sucking the green liquid that oozes out. Leaves appear bronzed after the green color is lost from many tiny feeding spots. Heavy infestations can defoliate trees and cover leaves with fine webbing.

Most spruce spider mite activity occurs during the cool months (April- mid-June, September-October) when the evening temperatures are less than 60 degrees Fahrenheit. Injury drops off in mid-summer.

The best way to confirm a spider mite infestation is to hold a sheet of white paper under a branch and then tap the branch sharply. If present, they will fall off and be seen as tiny specks crawling over the paper. The ability to crawl clearly distinguishes mites from the grit that can be knocked off a plant. Leaves infested with spider mites will usually have fine webbing and eggs on the leaf undersides. Although spider mite injury is superficially similar to that of lacebugs, spider mite injury can be distinguished by the presence of webs, egg shells on the mid-vein, and lack of tar spots on the leaf surface.

Spider mites thrive on plants that are under water or nutrient stress. Be sure to keep plants well watered and give them adequate light. Do not over fertilize or under fertilize.

When the weather is wet many kinds of spider mites are attacked by a fungus. In some cases this is enough to keep mites from becoming a problem. Heavy rain can also reduce spider mite numbers by knocking them off the trees.

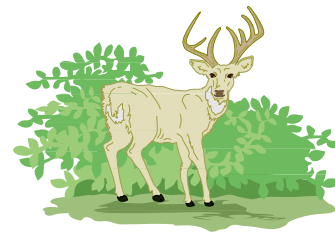
Small lady beetles, lacewings, minute pirate bugs and predatory mites are among the many arthropods that feed on spider mites. Increase the numbers of friendly bugs in the landscape by avoiding reducing pesticide use when possible. Apply pesticides only when spider mites or other pests threaten plant health or appearance. When pests, other than mites are a problem choose a pesticide least harmful to mite predators, or one with a short residual activity.

Homeowners with damaging numbers of mites have three options:

- 1. Water Sprays:** Spraying trees with a forceful stream of water can knock off or injure many of the mites on the trees. Repeated sprays three times a week for two weeks can solve the problem in many cases.
- 2. Horticultural Oil or Soap Sprays:** Application of at the 2% rate (5 tablespoons/gallon) of these materials can improve the level of control obtained by simple water sprays. While safe on green needled conifers, these materials cannot be used for blue needled conifers. These solutions will remove the wax and may burn the leaves.
- 3. Broad Spectrum Miticides:** Homeowners have few options that work. If you can still find Kelthane (dicofol) in a store, it will work very well. Otherwise use Orthene (acephate), Cygon (dimethoate) or Malathion at the high rate specified on the label. Commercial applicators have much more effective materials available. These include Talstar (bifenthrin) Scimitar (Lambda-cyhalothrin), Morestan (oxythioquinox) and Hexygon (hexythiazox). Note that Hexygon is a rather selective material that conserves natural enemies and is useful early in the season before large numbers of spider mites are present. ☺

OVER THE BACK FENCE

Q: Can you give me some advice regarding deer that feed on my flowers and vegetable garden. The first year I lived in my home, no problems. The second year, deer began eating the vegetation around my property. I tried several remedies that I found in gardening shops including dried blood sprinkled around my property and plants. Yet they continued to come and eat all my plants. Well, it's Spring again, and they're back, recently eating all the hostas and greens from emerging bulbs. I was told to try Coyote urine. Do you have any other suggestions on how to stop this problem I have with the deer? I live on 3 acres of heavily wooded land. Thanks for any recommendations that you may have.



A: Deer have become very abundant in Indiana. Some areas of the state are experiencing deer problems that they never had before. Newly developed areas seem to be particularly vulnerable as landscape plants become established and mature. Some varieties of landscape plants, such as hostas, are particularly attractive to deer. Repellents have proven to have only minimal effectiveness in stopping deer damage. Barriers such as fencing or netting have been more effective, but more labor intensive and visually intrusive. Many people living in areas with high deer populations choose to plant landscape varieties that are less palatable to deer (Barberry, Blue Spruce, Pachysandra, Daffodil, etc. - for a complete list, contact USDA Wildlife Services at 765-494-6229). In areas where hunting is legal, thinning the deer population can help prevent deer numbers from exceeding the carrying capacity of the habitat. -- *Judy Loven, State Director, Wildlife Services* ☺

Q: We have a tree that the roots have come up on the lawn. Should we cut down the tree? Will it damage the grass?

A: Tree roots appearing at the soil surface will not kill the grass. I certainly would not recommend removing the tree. It is possible for trees, roots, and grass to coexist with some modifications.

There are a couple of solutions to this problem. You could mulch the area under the tree's drip line where the roots are surfacing. Begin by killing the grass with Grass B Gone that can be purchased at most hardware or lawn care stores. Then place two to three inches of mulch over the former grassy area. When applying mulch, do not place any mulch against the trunk of the tree, but rather make a bowl



shape (refer to illustration). Another solution would be to plant a ground cover under the tree. You could plant any number of ground covers that grow in the shade - Virginia creeper, ivy, vinca, pachysandra, to name a few. Ground cover under trees is a compatible situation that occurs in nature. When planting under a tree, don't dig into the large roots that are surfacing, but put soil between them and plant the plants. Damaging the roots by cutting or digging into them injures them and creates opportunities for insects and disease-causing organisms to enter.

With the mulch or ground cover covering the roots under the tree, you can still have the lawn in the areas further away from the roots and the tree. For additional information please refer to Purdue's Extension Publication *HO-105, Ground Covers for the Landscape*, available on-line at <<http://www.agcom.purdue.edu/AgCom/Pubs/HO/HO-105.html>> or from your local county Cooperative Extension Service Office. --Rita McKenzie ☺

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THE GRAPE VINE

Tick Season Is Here!

Ralph Williams and Tim Gibb, Entomologists

We have been receiving more than the usual calls concerning ticks this spring. Several species of ticks are found in Indiana, but the most frequently encountered species outdoors are the American dog tick, the lone star tick, and more recently, the deer tick.

The American dog tick is the most common species found in outdoor areas, especially in spring and early summer. It is found throughout Indiana and is often encountered in woods, uncut grassy fields, parks, and other areas of wild vegetation. They are especially numerous along paths used by animals. Only adult American dog ticks are normally found on larger animals (including people). The larval and nymphal stages are usually found on ground-nesting birds and rodents. Adults are dark brown or black with short, rounded mouthparts and with white markings on the dorsal side. They are considered the most important vector of Rocky Mountain spotted fever.

Lone star ticks are also commonly found in moist wooded areas, especially in areas with established deer populations. They are more frequently encountered in wooded areas in the southern half of the State. This tick is very aggressive and nonspecific in its feeding habits with all active life stages (larvae, nymphs and adults) feeding on a wide variety of animals (including humans). Adults have long mouthparts and the adult female has a distinct single white spot on her back.

The deer tick has become a concern because it is the primary vector of Lyme disease. They are found in similar habits as the American dog tick and lone star tick. Adults are smaller and dark brown in color with no white markings on their dorsal side. In Indiana, they are more common in the northwestern quarter of the state.

When venturing outdoors in potential tick-infested areas personal protection is the best advice. Wear protective clothing (long pants, long-sleeved shirts), stay on established trails and avoid brushing against vegetation. Apply an EPA registered insect repellent to your shoes, socks, and pants following label directions. After being outdoors check yourself, your children, and your pets for ticks, especially on the head, groin and underarm area.

If a tick is found attached on your skin, remove it using blunt forceps or tweezers, grasp the tick as close to the skin surface as possible and pull upward with a steady, even pressure. Take care not to squeeze, crush, or puncture the tick. Do not handle the tick with bare hands because infectious agents may enter via mucous membranes or breaks in the skin. After removing the tick, disinfect the bite site and wash hands thoroughly with soap and water. Consult a physician immediately if a rash or flu-like symptoms develop.

For additional information please refer to Purdue's Extension Publication *E-71, Ticks-Biology and Control*, available on-line at <<http://www.entm.purdue.edu/Entomology/ext/targets/e-series/EseriesPDF/E-71.pdf>> or from your local county Cooperative Extension Service Office. ☺



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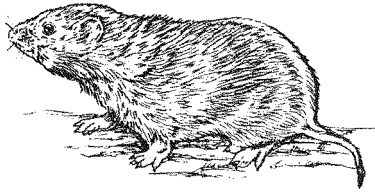
Q: I have mice or some other type of animal digging holes around my fruit trees, presumably eating the roots and causing poor growth. Can you offer any advice?

A: Several rodent species that could be responsible for this type of damage: voles, deer mice, chipmunks, or ground squirrels. The most likely culprit is voles. Orchards in Indiana have chronic problems with these small field mice that feed on the inner cambium layer of bark, usually at the base of the tree, as well as on fruits and nuts. Tree roots are generally too deep for voles to feed on, but damage to the protective bark of trees can result in poor growth and even death of the trees.

It is important to identify which rodent is responsible for your damage in order for your control efforts to achieve the best results. You can do this by simply setting a few mouse traps around the base of the tree at night (peanut butter is a good bait). Your trapline survey should reveal the damaging species.

There are legal chemical control methods for most rodent species (except for chipmunks), as well as traps, habitat modification, and barriers. Trapping - standard wooden base snap traps can be effective for small infestations. Peanut butter has been a good all around bait for all species of rodents. Precautions (trap box or other covering, night trapping) should be taken to prevent the capture of birds or other non-target animals. Small box traps can be used, but are not readily available at local stores. Habitat modification - most rodents do not like clear, open areas that leave them exposed to predators. Clearing tree base areas of all ground covers or other vegetation, organic mulch, or windfall fruit and other plant debris eliminates the protective cover that rodents prefer. Non-organic mulches (pea gravel, crushed marble, etc.) or even bare soil is not conducive to rodent activity. Barriers - tree wrap products can protect the base of your trees from rodent gnawing. Metal barriers provide a greater level of protection than plastic ones. Loosen any tree wraps at least twice per year to prevent binding the growth of the trunk of the tree.

-- Judy Loven, State Director, Wildlife Services ☺



Vole

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