

**Benton-Linn Counties Master Gardener  
Associations  
Plant Problem Scenario  
2013**

## **Instructors, Read The Following to your Trainees on the First Day:**

*This will be a role playing exercise in which I will act as a client and you will act as a Master Gardener. We'll be following the scenarios printed in this booklet, which are among the most common problems gardeners face in this region. This exercise is the very best preparation you can have for your upcoming stints on the desk at the Extension Office, Saturday Markets, DaVinci Days, County Fairs and other events.*

*In order to get the most out of this training, please adhere to the following guidelines:*

- 1. No guessing. Even if you know the answer right off, keep it to yourself. The goal of this training is to sharpen your investigative and deductive skills. It is not a measure of your present knowledge. Everyone in your group will benefit by the opportunity to run through the question and answer process that is the backbone of Master Gardener assistance.*
- 2. Don't open your books or consult your computer until I have given you the go-ahead.*

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## **Benton-Linn Counties Plant Problem Scenario Training 2013 Instructor Guidelines**

Thanks very much for volunteering your time. Please read these guidelines carefully before conducting your first training.

Your booklet contains plant problem scenarios designed as training aids for new Master Gardener Trainees. Although they contain specific information regarding particular plant problems, their primary focus is not to test the trainees' knowledge, but to help them hone their investigative and deductive skills. This is a critical point; you should not allow enthusiastic or highly knowledgeable trainees to blurt out the answers before the entire group has a chance to ask questions and research potential answers.

As the instructor, you will use each scenario to adopt a role as a typical Master Gardener client who has stopped by the desk for help with a problem. Your trainees will act as Master Gardeners. You will read the problem to your assigned group and then respond to their questions as the client would. The scenario sheets contain enough information about the various problems so that you will be able to respond accurately even if you are not personally familiar with the plant condition.

Your activity as the instructor will depend on the abilities and knowledge of the group members. If they are on the right track, simply monitor their progress. If they seem stuck, provide help as necessary, but try to limit your help to pointing them toward the proper research materials. The scenarios include references.

You will be given a list of scenarios to cover each day. Spend enough time on each to ensure the trainees have grasped the lessons to be learned on each scenario, but in no case more than 10 minutes each. Remember, you are not teaching them how to deal with the problems...just the methods of diagnosing and researching the problems.

Obviously, part of what they discover in their research will include recommendations for control (and you will have several listed on your scenarios) but try not to spend too much time in discussion of those recommendations.

Please cover only those scenarios assigned each day. The trainees will be assigned to permanent groups who will see different instructors each week, so it will be important to ensure the groups are following the same plan. It is not necessary that you cover every scenario assigned, only that you don't branch out into unassigned scenarios.

Thanks again.

# **Benton-Linn Counties Plant Problem Scenario**

## **Training**

### **Step-by-Step for Instructors in the Plant Problem**

#### **Scenarios**

1. First thing, take out the two sheet protectors containing colored Master Gardener forms and give them to your group. They can refer to them for ideas about questions to ask. Be sure to get them back at the end of the session and return them to the book.
2. Remove the sheet protector containing the photos pertaining to the scenario you are about to begin. After you have made the opening statements regarding that scenario, allow them to look at the photos. Be sure to return the photos back to your notebook IMMEDIATELY following your work on that scenario and BEFORE you remove another one.
3. Do not allow the trainees to use books or computers until they've covered all the questions you think are necessary.
4. Use your own experience and knowledge in answering their questions. Be creative; not everything could be anticipated in the write-ups, but remember, you are not trying to trick them. You are helping them prepare for real world problems.

# Useful Websites

## **General**

<http://urbanext.illinois.edu/hort/>

<http://www.ag.ndsu.edu/ndsuaag/>

<http://www.extension.uidaho.edu/homegard.asp>

<http://www.bhg.com/gardening/plant-dictionary/>

## **Plant Identification**

<http://plants.usda.gov/java/>

<http://oregonstate.edu/dept/ldplants/>

<http://www.noble.org/webapps/plantimagegallery/>

<http://www.mountainnature.com/plants/PlantID.htm>

## **Insects**

<http://insects.ippc.orst.edu/pnw/insects>

<http://www.ipm.ucdavis.edu/PMG/menu.homegarden.html>

<http://vegipm.tamu.edu/imageindex.html>

<http://www.puyallup.wsu.edu/plantclinic/resources/pls-res.html>

## **Diseases**

<http://pnwhandbooks.org/plantdisease>

<http://ohioline.osu.edu/hyg-fact/3000/>

<http://plantclinic.cornell.edu/>

<http://www.colostate.edu/Dept/CoopExt/4DMG/Pests/Diseases/diseases.htm>

## **Weeds**

<http://pnwhandbooks.org/weed/>

## **BOOKS RECOMMENDED FOR PROBLEM-SOLVING QUESTIONS** (Arranged by the categories used in our library)

### **Insects and Spiders**

Garden Insects of North America.

### **Propagation**

American Horticultural Society Plant Propagation.

### **Weeds and Toxic Plants**

Weeds of California and Other Western States.

### **Home Orchard**

Fruit, Berries and Nuts: How to select, grow, and enjoy.

Berry Grower's Companion

Fruit and Nuts. Comprehensive. Includes pests and diseases, propagation, and recommended varieties.

### **Pests**

Pests of the Garden and Small Farm. Lots of photos, symptoms, management methods.

Common Sense Pest Control. Pests inside the house, Pests of indoor plants, Pests of the house structure, Pests in the garden, Pests of food and ornamental gardens

### **General**

Sunset Garden Book. A to Z listings of hundreds of plants, including common problems. Has a lengthy plant selection guide..

Home Gardener's Problem Solver. States problem, analysis, and solution for hundreds of plant problems.

A-Z Encyclopedia of Garden Plants. 15,000 plants, including cultivation, propagation, and pests and diseases.

Ortho Problem Solver. Problems, analysis, and solutions for hundreds of plants. Good photos.

Sunset Western Garden Problem Solver. Gives problem, analysis, and solution for a great many garden plants and pests.

What's wrong with my plant? Arranged by affected plants. Flow charts for decision makers. Photos of the problem for most subjects covered.

### **Vegetables**

Growing Vegetables West of the Cascades. Arranged alphabetically by plant. Includes general culture and pests and diseases.

Rodale's Vegetable Garden Problem Solver. Includes, for each vegetable, soil, planting, care, secrets for success, troubleshooting problems.

**Benton County Master Gardener Problem Diagnosis Scenario #1**  
**(Whiteflies)**

<p><b>Problem</b> My houseplant is losing its leaves.</p>
<p><b>Description (May)</b> The leaves slowly deform, turn yellow, and drop off. They curl and cup and get yellow at the edges first. Then they turn very yellow between the leaf veins and drop off.</p>
<p><b>Questions and Answers</b></p> <p><b>Question:</b> What kind of plant is it? <b>Answer:</b> It is some kind of palm plant. It is a houseplant.</p> <p><b>Question:</b> How long since you first noticed the problem? <b>Answer:</b> About two weeks.</p> <p><b>Question:</b> Are any other plants affected? <b>Answer:</b> Yes, first I noticed the problem with one, but now several others are starting to lose their leaves.</p> <p><b>Question:</b> Are there any insects that you can see on the plants? <b>Answer:</b> Not that I've noticed, although sometimes when I go to water them, there are little flies buzzing about. They are really small, smaller than mosquitoes. They seem to fly up when I come near the plant.</p> <p><b>Question:</b> Have you looked closely at the underside of the leaves? Maybe with a magnifying glass?</p>
<p><b>Reference(s)</b> <a href="http://extension.missouri.edu/p/G7275">http://extension.missouri.edu/p/G7275</a> "Managing Whiteflies on Indoor and Outdoor Plants". <a href="http://uspest.org/pnw/insects">http://uspest.org/pnw/insects</a> (Chapter-Nursery Section; Chemicals used by pest)</p>
<p><b>Diagnosis</b> <b>Whitefly</b> infestation: The whiteflies are sucking insects that can also create sticky honeydew that becomes sooty. The small football-shaped eggs are laid on the leaf underside with white wax deposits. Eggs hatch in warm temperatures, 70 F. and above. Nymphs and adults suck the sap/fluids from the plant. This reduces its vigor, possibly killing it.</p>
<p><b>Recommendations</b> Quick action as soon as first flies are noticed is essential. Eggs hatch in about a week. Females can lay 200-400 eggs. Insect reach adulthood in 32-39 days. <b>Cultural:</b> Isolate infected plants; remove older heavily infested leaves from plants. <b>Mechanical:</b> Yellow sticky traps directly above plants. Vacuum adults in early morning when not moving fast. Put vacuum bag in freezer for 24 hours to kill adults. <b>Chemical:</b> They develop resistance quickly so alternate chemicals. Apply to both tops and undersides of leaves every 5-7 days. Neem oil and insecticidal soap.</p>

#1



## Benton County Master Gardener Problem Diagnosis Scenario # 2

### (Aphids)

<b>Problem</b> My artichoke plants have lots of little tiny black things on them.
<b>Description (June)</b> Leaves and other areas of the plant have little black bead-like things on them. They are covered with some shiny stuff and blackish stuff, too. The leaves look deformed.
<b>Questions and Answers</b>  <b>Question:</b> Do you have more than one plant? Are any other plants affected? <b>Answer:</b> Yes, I have three plants. All seem to have some degree of the problem.  <b>Question:</b> You said the leaves look deformed. How are they deformed? <b>Answer:</b> They curl and cup and get yellow at the edges first, then in between the veins.  <b>Question:</b> Where are the little black things and how big are they? Do you think they are insects? <b>Answer:</b> Mostly they are on the underside of the leaves, maybe the size of a large pinhead. They move, so, yes, I think it is an insect.  <b>Question:</b> Are there any other insects that you've noticed? <b>Answer:</b> Well, oh yes, lots of ants!  <b>Question:</b> Do the leaves feel sticky underneath or do they look dirty? <b>Answer:</b> Yes.
<b>Reference(s)</b> <a href="http://uspest.org/pnw/insects">http://uspest.org/pnw/insects</a> (Vegetable chapter, artichoke section)
<b>Diagnosis</b> <b>Aphid:</b> Infestation, with accompanying ant infestation, due to aphid production of honeydew. Aphids are commonly green, brownish, or black, less often reddish or yellow. Some are winged; some are not. Aphids suck plant fluids and can be a vector for plant diseases.
<b>Recommendations</b> <b>Cultural:</b> Destroy infested plants immediately after harvest. Destroy weed hosts, especially thistles, to help destroy overwintering populations. Watch use of nitrogen as aphids prefer highly fertilized plants. Spray off aphids with strong jets of water from hose. Spraying with hose will likely be necessary daily for a few days. Yellow sticky strips can alert gardener to beginning infestations.  <b>Biological:</b> ladybugs, green lacewings and other beneficial insects  <b>Chemical:</b> Apply to both top and bottoms of leaves, neem extract, bifenthrin, esfenvalerate, and permethrin. Follow safe chemical application practices.

#2



**Benton County Master Gardener Problem Diagnosis Scenario #3  
(Garden Symphylans)**

<p><b>Problem</b> My carrots and radishes started off strong but then failed, with the tops wilting. The soil is moderately acidic. Nutrients are above average according to a soil test I took before I planted the garden.</p>
<p><b>Description (May)</b> Garden was productive last year, but this year many of the vegetables are not thriving. They wilt and don't grow much.</p>
<p><b>Questions/Answers</b> <b>Question:</b> Has there been gardening in the same location previously? <b>Answer:</b> Yes, for 10 years. <b>Question:</b> Are all the beds affected? Have you experienced this problem previously? <b>Answer:</b> This is the first year we had a problem, and all beds have the problem. <b>Question:</b> What is your soil preparation method? What is different this year? <b>Answer:</b> We have raised beds so don't generally till. We added manure this year. <b>Question:</b> What kind of manure was it? Was it well aged? <b>Answer:</b> It was mixed: cow, horse, and sheep. Well aged? I don't know. <b>Question:</b> What do the vegetables look like if you pull up the plant? Any insects? <b>Answer:</b> There are some pinholes in the radishes and carrots, and the roots seem thin and bare. The usual sow bugs, centipedes, and beetles are in the soil.</p>
<p><b>Reference(s)</b> PNW Insect Book, Chapter on Vegetables, Section, Common Pests of Vegetable Crops. <a href="http://uspest.org/pnw/insects?30IPMW02.dat">http://uspest.org/pnw/insects?30IPMW02.dat</a> <a href="http://www.ipm.ucdavis.edu/PMG/r108500111.html">http://www.ipm.ucdavis.edu/PMG/r108500111.html</a></p>
<p><b>Diagnosis</b> <b>Symphylans:</b> Insects likely arrived in the barnyard manure if it didn't compost hot and long enough. They are very small (0.32 inches); eat the fine root hairs, so the plant can't take up water and nutrients. In spring and fall, they are usually in the top 6" of soil, much deeper in summer. Test for presence by sprinkling a quart of garden soil into a bucket of water; the symphylans will float on the surface.</p>
<p><b>Recommendations</b> <b>Cultural:</b> Because symphylans cannot create their own tunnels, frequent tilling of the top 8" of soil is the preferred treatment. Flooding the area for 2-3 weeks can also be effective. Compaction also denies them travel routes through the soil. Crop rotation can help. Potato crops have reduced symphylan populations in research studies. <b>Biological:</b> True centipedes, ground beetles, predacious mites, and other beneficials feed on symphylans but rarely can control a heavy infestation. They are considered less effective than tilling. <b>Chemical:</b> None for home use.</p>

#3



**Benton County Master Gardener Problem Diagnosis Scenario #4**  
**(Cottony Camellia Scale)**

<p><b>Problem</b> Black stuff on camellia's lower leaves.</p>
<p><b>Description (Late May)</b> My camellia leaves have an ugly, sticky black coating on them. Some of the leaves have some yellow spots, too. It is coating about half of my plant and is ugly.</p>
<p><b>Questions/Answers</b></p> <p><b>Question:</b> How old is the plant? Is it blooming well and generally healthy? <b>Answer:</b> About 5 years. It seems to be doing OK except for the black leaves.</p> <p><b>Question:</b> Has this problem happened before? <b>Answer:</b> Not really. There was a bit last year, but this year there is a lot more.</p> <p><b>Question:</b> Can you wipe it off the leaves? <b>Answer:</b> Yes, for the most part. Some leaves have yellow spots under black stuff.</p> <p><b>Question:</b> How much of the plant is covered? <b>Answer:</b> A large number of the lower leaves.</p> <p><b>Question:</b> Have you looked under the leaves? Did you notice anything? <b>Answer:</b> Lots of oblong, white, fuzzy, looking things.</p>
<p><b>Reference(s)</b> <a href="http://uspest.org/pnw/insects">http://uspest.org/pnw/insects</a>, Landscape Chapter <a href="http://cru.cahe.wsu.edu/CEPUBLICATIONS/EB1552E/EB1552E.PDF">http://cru.cahe.wsu.edu/CEPUBLICATIONS/EB1552E/EB1552E.PDF</a> "Scale Insects on Ornamentals"</p>
<p><b>Diagnosis</b> <b>Cottony camellia scale:</b> Honeydew and the sooty mold it creates are the primary problems. The insect is a soft scale that feeds on camellia, holly, yew, euonymus and maple. Adult females are about 1/8 inch long, oval and yellowish tan with a brown margin. They lay white cottony ovisacs (egg masses) on the undersides of leaves in May. Crawlers hatch through June and remain on the undersides of the leaves through winter. The effect of the sooty mold is primarily esthetic. If the plant is under stress by too many yellowed leaves, action is needed.</p>
<p><b>Recommendations</b> <b>Cultural/Mechanical:</b> Wipe mold off leaves. Spray with water to remove insects at crawler stage. If infestations are heavy, spray horticultural oil in the dormant season. During the growing season use horticultural soap or oil to conserve beneficials in environment. Most favorable period for control is in late summer or early fall after eggs have hatched and crawlers have emerged. <b>Chemical:</b> During growing season apply to control immature crawler stage, asphate, cyfluthrin, imidacloprid, and insecticidal soap. Complete coverage especially on undersides of leaves is essential.</p>

#4



**Benton County Master Gardener Problem Diagnosis Scenario #5**  
**(Seasonal Needle Drop)**

<b>Problem</b> Pine trees dropping needles.
<b>Description (Early November)</b> Pine tree needles are turning yellow and dropping
<b>Questions/Answers</b>  <b>Question:</b> What type of pine tree is it? <b>Answer:</b> I think it is a black pine.  <b>Question:</b> What is the age of the affected tree? <b>Answer:</b> Unsure...more than 10 years.  <b>Question:</b> From where are the needles dropping? <b>Answer:</b> Primarily the interior of the tree, first they turn yellow and then they fall off.  <b>Question:</b> Are many of them coming from one side of the tree versus the other? <b>Answer:</b> It seems to be all over the tree.  <b>Question:</b> What time of year does the drop occur? <b>Answer:</b> I notice them mostly in the fall.  <b>Question:</b> Have you noticed any holes in the bark? <b>Answer:</b> No. But I'm getting tired of raking up the dropped needles.  <b>Question:</b> Have you noticed significant numbers of small spider mites? <b>Answer:</b> No. The tree seems pretty clean.  <b>Question:</b> What are the surrounding conditions? <b>Answer:</b> The site is full sun. The soil is typical valley clay. The site often gets very soggy in the winter.
<b>Reference(s)</b> <a href="http://utahpests.usu.edu/IPM/htm/ornamentals/landscape-insects-and-diseases/needle-drop/">http://utahpests.usu.edu/IPM/htm/ornamentals/landscape-insects-and-diseases/needle-drop/</a> "Needle Drop of Evergreens", Utah State
<b>Diagnosis</b> <b>Normal needle shed:</b> Many evergreens will exhibit older needle yellowing in the fall. This second-year needle yellowing occurs towards the interior of the plant. It may occur all at once and may be quite dramatic. This needle yellowing is normal fall color and precedes needle drop. After needles drop in the fall, plants should appear healthy. Other possible causes include spider mites, drought, poor nutrition, herbicides, winter injury and poor drainage.
<b>Recommendations</b> No treatment needed for seasonal needle drop. Black pine ( <i>pinus nigra</i> ) is tolerant of wet sites. The dropped pine needles make good mulch for acid-loving plants like rhododendrons and roses.

#5



**Benton County Master Gardener Problem Diagnosis Scenario #6**  
**(Fungus Gnats and Flies)**

<p><b>Problem</b> My house has a bunch of little black flies buzzing around.</p>
<p><b>Description (January)</b> Very small, black, gnat sized bugs.</p>
<p><b>Questions and Answers</b></p> <p><b>Question:</b> Where do you see these insects? <b>Answer:</b> All over the house.</p> <p><b>Question:</b> Do you notice them on the soil surface of the plants when you water? <b>Answer:</b> I do notice them walking around the soil on the plants.</p> <p><b>Question:</b> How often do you water and repot the plants? <b>Answer:</b> I water every couple of days but only repot about once a year.</p> <p><b>Question:</b> Is there any damage to your plants? <b>Answer:</b> None that I can see, although some of my plants are not doing as well as they used to.</p>
<p><b>Reference(s)</b> Sustainable Gardening textbook. Washington State University Extension Publication EB1573E Colorado State University Extension Pub. "Fungus Gnats as House Plants and Indoor Pests" PNW Insect Management Handbook on the internet</p>
<p><b>Diagnosis</b> <b>Fungus gnat &amp; larvae.</b> Lives in moist soil eating decaying soil matter, fungus, algae and plant roots. Place potato slice on soil to attract larvae. Loves shady, moist environment. Larvae mature into flying gnats. Adults live 10 days during which a female can lay up to 200 eggs.</p>
<p><b>Recommendations</b></p> <p><b>Cultural:</b> Allow potting medium to dry in between watering. Do not overwater houseplants. Remove dead leaves. Repot often. Place yellow sticky traps under plant canopy. Adults are attracted. This can reduce population by trapping females before they lay their eggs.</p> <p><b>Biological:</b> <i>B.t. iraelensis</i> Used to drench the soil (same <i>Bt</i> strain also controls mosquito larvae). Some beneficial nematodes also will work.</p> <p><b>Chemical:</b> Not very effective as it will not reach the next generation in the soil. Can knock down large populations of adults but still have to treat for larvae in soil to suppress fully.</p>

#6



## Benton County Master Gardener Problem Diagnosis Scenario #7

### (Red Thread)

#### Problem

I have circles of discolored areas scattered around my lawn. It used to be a nice even green, now I have ugly areas in my lawn.

#### Description (Early April)

Discolored spots, about 1 to 2 foot-round areas in various spots around the lawn. Weren't there last Summer. They started popping up in mid-December.

#### Questions and Answers

**Question:** What variety of grass do you have?

**Answer:** It is a fine fescue.

**Question:** What color are the bad areas?

**Answer:** They are brownish-yellow and have this kind of pink fuzz.

**Question:** When did you last fertilize your lawn?

**Answer:** I always fertilize once a year, in the spring.

**Question:** How do you irrigate your lawn? How often and for how long?

**Answer:** It rains so much in Corvallis that I don't worry much about it. It comes back in September.

**Question:** Have you noticed any insects or mites in the lawn?

**Answer:** Not that I have seen.

#### Reference(s)

["Fertilizing Home Lawns,"](#) EC 1278;

PNW "Plant Diseases", Lawns (online)

<http://ipmnet.org/plant-disease/disease.cfm?RecordID=667>

#### Diagnosis

**Red Thread** (a fungal foliar disease): Circular, irregular yellow patches, 2 to 24 inches, become brown and appear dead. Affected aerial parts are bound together with a faintly pinkish web. Small, pink, hornlike fruiting bodies of fungus on leaf blades are a sure indication of red thread.

#### Recommendations

**Cultural:** This disease can be controlled with cultural practices alone. 1. Fertilize with adequate nitrogen in a balanced nutritional program. 2. Prevent drought stress (anytime, but particularly watch in summer or fall) by using an adequate amount of water based on local growing conditions.

**Chemical:** Not recommended for home lawns.

#7

Red threads are fungal mycelium.



Occurs on poorly fertilized lawns.

**Benton County Master Gardener Problem Diagnosis Scenario #8**  
**(Compost Problems)**

<p><b>Problem</b> My compost is not breaking down.</p>
<p><b>Description (October)</b> It is just sitting in my compost box for several months and becomes a sloppy mess.</p>
<p><b>Questions and Answers</b></p> <p><b>Question:</b> Where is the compost box located? <b>Answer:</b> It's in a low spot way in the back of my garden.</p> <p><b>Question:</b> How large is the box? <b>Answer:</b> It's the cubic yard size that was recommended.</p> <p><b>Question:</b> How are you treating it? <b>Answer:</b> I pile a bunch of stuff in it and keep piling whenever I have more.</p> <p><b>Question:</b> Do you cover it? <b>Answer:</b> No, and I water it a lot.</p> <p><b>Question:</b> How often do you turn it? <b>Answer:</b> Huh?</p>
<p><b>Reference(s)</b> Master Gardener Handbook, Big Book of Gardening Skills Joy of Gardening</p>
<p><b>Diagnosis</b> <b>Compost pile is too wet.</b> Air cannot reach the interior so material cannot decompose.</p>
<p><b>Recommendations</b></p> <ul style="list-style-type: none"><li>• Turn the pile every 2-3 days to start drying. Once dry, moisten occasionally; never soak.</li><li>• Add dry material such as leaves, straw, wood chips or other bulking agents to soak up the excess moisture.</li><li>• Cover the box in the wet weather.</li><li>• Moving the box to a higher spot in a sunny location will help.</li><li>• Alternate layers of green (grass clippings, food waste, garden trimmings) with brown (leaves, hay, straw).</li><li>• Turn regularly (weekly is ideal) to keep the material loose, fluffy.</li><li>• Provide sufficient airflow through pile.</li></ul>

**Benton County Master Gardener Problem Diagnosis Scenario #9**  
**(Root Weevils)**

<p><b>Problem</b> The leaves of my rhododendrons are being eaten.</p>
<p><b>Description (June/July)</b> Notches are appearing on the leaves.</p>
<p><b>Questions and Answers</b></p> <p><b>Question:</b> Where are the plants located in your yard? What is your soil type? <b>Answer:</b> They are all in a shady or partly shaded areas that are close to the house. My soil is just Willamette Valley clay.</p> <p><b>Question:</b> What method of irrigation do you use on the plants? <b>Answer:</b> They get watered with the lawn.</p> <p><b>Question:</b> Is there any damage on other parts of the plants? (Bark, roots or lower stems) <b>Answer:</b> I do see some kind of chewing on the lower stems.</p> <p><b>Question:</b> Have you seen any insects or mites on the plants? <b>Answer:</b> I went out with a light one night and saw some black insects.</p>
<p><b>Reference(s)</b> PNW Insect Management Handbook Success with Rhododendrons and Azaleas by H. Edward Reiley, <a href="http://www.rhododendron.org/v54n4p195.htm">http://www.rhododendron.org/v54n4p195.htm</a></p>
<p><b>Diagnosis</b> <b>Weevils</b>--strawberry root weevil, black vine weevil, obscure root weevil: Root weevil emerge as adults in mid-summer and begin to feed on plant foliage and begin to lay eggs 3-4 weeks later. As larvae emerge, they burrow into soil to feed on roots.</p>
<p><b>Recommendations</b></p> <p><b>Cultural:</b></p> <ul style="list-style-type: none"><li>• Add parasitic nematodes in soil below to limit larvae. Add when temps. are above 52 degrees.</li><li>• crop rotation (if possible)</li><li>• handpick with flashlight at night</li><li>• trim leaves touching ground to limit access</li></ul> <p><b>Mechanical:</b> Use sticky Tanglefoot-type product to trap weevils before they can crawl up to notch leaves.</p> <p><b>Chemical:</b> Refer to PNW Insect Management Handbook. Treatments are available only for adult insect with foliar applications.</p>

#9



## Benton County Master Gardener Problem Diagnosis Scenario #10

### (Apple Bitter Pit)

<b>Problem</b> My apples have brown spots.
<b>Description (August)</b> Brownish surface spots with depressed, necrotic areas underneath. The spots are more numerous near the blossom end of the fruit.
<b>Questions and Answers</b>  <b>Question:</b> What variety of apples do you have? <b>Answer:</b> Granny Smith  <b>Question:</b> What is the sun exposure of the trees? <b>Answer:</b> They are planted in an open and sunny area.  <b>Question:</b> How many trees do you have and are they all affected? <b>Answer:</b> There are three trees and all the fruit seems to have a problem.  <b>Question:</b> Do you water your trees? How? <b>Answer:</b> Irregularly  <b>Question:</b> Do you see any insects or mites on the trees? <b>Answer:</b> Not really.  <b>Question:</b> Do you prune and fertilize your trees? <b>Answer:</b> Yes, I really give them a good pruning and fertilize every year.
<b>Reference(s)</b> PNW Disease Management Handbook
<b>Diagnosis</b> <b>Apple Bitter Pit:</b> This shows up on the fruit as small pits that resemble miniature bruises. The flesh beneath is dry, brown and spongy. Often caused by calcium deficiency; low levels of calcium in the fruit are due to competition with shoots for calcium and are aggravated by hot, dry conditions and/or irregular watering. Heavy dormant-season pruning, over-thinning, and excessive nitrogen fertilizer promote bitter pit. Injury to trunks interferes with calcium movement. Bitter pit occurs most severely in years of light crops. Certain apple varieties are more/less susceptible (see source).
<b>Recommendations</b> <b>Cultural:</b> Water evenly & regularly. Avoid excess nitrogen, don't over-prune/thin. Avoid injury to the tree trunk. Summer sprays of calcium chloride or calcium nitrate. To avoid the condition in stored fruit, rapidly cool fruit after harvest then store at low temperatures & high humidity.

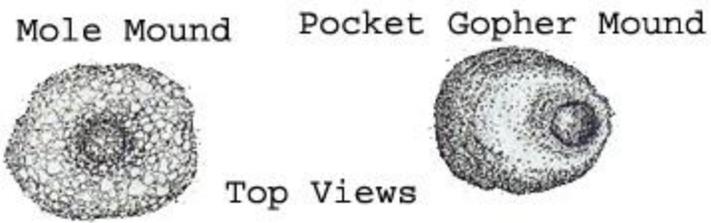
#10



**Benton County Master Gardener Problem Diagnosis Scenario # 11**  
**(Gophers)**

<b>Problem</b> I have a bunch of soil mounds on my lawn. What do I do?
<b>Description (Early June)</b> A mound of dirt with a 3-inch hole
<b>Questions and Answers</b>  <b>Question:</b> How many holes and mounds? <b>Answer:</b> There are six or eight and increasing.  <b>Question:</b> What is the shape of the mound and where is the hole? <b>Answer:</b> It is horseshoe-shaped and the hole is on the side of the mound.  <b>Question:</b> Are the mounds generally lined up in a straight line or in irregular cluster groupings? <b>Answer:</b> In groupings.  <b>Question:</b> Have you noticed any plants that have unexpectedly died? <b>Answer:</b> Yes, my tulips haven't come up like they usually do. There aren't as many.
<b>Reference(s)</b> <a href="http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/24903/ECNO1115.pdf?sequence=1">http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/24903/ECNO1115.pdf?sequence=1</a> <a href="http://www.cals.uidaho.edu/edComm/pdf/PNW/PNW0627.pdf">http://www.cals.uidaho.edu/edComm/pdf/PNW/PNW0627.pdf</a> , <a href="http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/18910/ec1255.pdf">http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/18910/ec1255.pdf</a>
<b>Diagnosis</b> <b>Pocket gophers.</b> Typically, two different animals, pocket gophers or moles, create mounds. Here are some tips to help you identify which animal created the mound on your property. <ul style="list-style-type: none"><li>• Pocket gopher mounds tend to be horseshoe or fan shaped and will be larger, 10-24 inches in diameter and 4-6" high. The plugged hole will be on the side of the mound. Irregular clustered mounds are typical. Pocket gophers only eat vegetation (roots, bulbs, vegetables, etc.).</li><li>• Mole mounds are circular, volcano-like with a plugged hole down under the center of the mound, tend to be smaller in diameter, and are often in a line. Moles eat insects, not vegetation.</li></ul>
<b>Recommendations</b> Traps, poison (appropriate to use, used underground only, following label instructions), and/or professional fumigation.

#11



Courtesy of The University of California, Davis

Side view of [mole](#) and [pocket gopher](#) mounds.



Courtesy of the University of California, Davis



**Benton County Master Gardener Problem Diagnosis Scenario #12**  
**(Pacific Coast Pear Rust)**

<p><b>Problem</b> My pear tree has orange stuff on it.</p>
<p><b>Description (Late April)</b> Very small bright orange dots on some leaves and young fruit. Affected fruit is twisted and deformed. Some fruit have dropped off the tree.</p>
<p><b>Questions and Answers</b></p> <p><b>Question:</b> What type of pear is it? <b>Answer:</b> I don't know.</p> <p><b>Question:</b> What is the exposure <b>Answer:</b> Part sun, part shade.</p> <p><b>Question:</b> When did you first notice the orange dots on the tree? <b>Answer:</b> I started seeing it after the tree had flowers on it.</p> <p><b>Question:</b> Are there other trees affected? <b>Answer:</b> Yes, all four pears are affected.</p> <p><b>Question:</b> Are there cedar trees in the area? <b>Answer:</b> Yes, several within 30 yards.</p>
<p><b>Reference(s)</b> PNW Plant Disease Handbook: <a href="http://pnwhandbooks.org/plantdisease/pear-pyrus-sp-pacific-coast-pear-rust">http://pnwhandbooks.org/plantdisease/pear-pyrus-sp-pacific-coast-pear-rust</a>; <a href="http://pnwhandbooks.org/plantdisease/pear-pyrus-sp-trellis-rust">http://pnwhandbooks.org/plantdisease/pear-pyrus-sp-trellis-rust</a>; <a href="http://pnwhandbooks.org/plantdisease/cedar-incense-broom-rust">http://pnwhandbooks.org/plantdisease/cedar-incense-broom-rust</a></p>
<p><b>Diagnosis</b> <b>Pacific Coast Pear Rust:</b> Two pear rusts, which occur in the Northwest, are Pacific Coast pear rust and pear trellis rust. Both are caused by fungi and require an alternate host (another species on which the fungus alternately must develop to complete its life cycle). The more common rust in the Willamette Valley is Pacific Coast pear rust, which is also found on hawthorn, apple, crabapple, serviceberry, quince, and mountain ash. The alternate host is the incense cedar (<i>Calocedrus decurrens</i>), which develops witches' brooms. It causes malformation of young fruit and fruit drop. Pear trellis rust may also infect pears, causing reddish to orange blotches on top of leaves, with raised acorn-shaped aecia forming on the undersides around mid-June. The alternate host is juniper, which develops elongate, swollen galls along branches.</p>
<p><b>Recommendations</b> <b>Cultural:</b> Remove alternate hosts, incense cedar, around orchard. Remove and destroy affected leaves and fruit. <b>Chemical:</b> None are authorized for homeowners.</p>

#12



:



## Benton County Master Gardener Problem Diagnosis Scenario #13

### (Peach Leaf Curl)

<b>Problem</b> My peach tree is not looking happy.
<b>Description (Early March)</b> The new leaves are yellow to reddish and curled up—kind of distorted looking. Then some are dropping off.
<b>Questions and Answers</b>  <b>Question:</b> When did these symptoms appear? <b>Answer:</b> As soon as the leaf buds were opening.  <b>Question:</b> Is the whole tree affected? <b>Answer:</b> Yes, most of it, although some branches more than others. Gradually more leaves are turning dark brown and falling off.  <b>Question:</b> Are the leaves the only part affected? <b>Answer:</b> No, the blossoms and fruit and a few twigs are also distorted and some fruit have reddish growths on them.  <b>Question:</b> Have you noticed any insects or mites on the tree? <b>Answer:</b> No
<b>Reference(s)</b> <a href="http://pnwhandbooks.org/plantdisease/peach-prunus-sp-leaf-curl">http://pnwhandbooks.org/plantdisease/peach-prunus-sp-leaf-curl</a>
<b>Diagnosis</b> <b>Peach Leaf Curl:</b> The cause is <i>Taphrina deformans</i> , a fungus. It causes severe leaf malformation and leaf drop. Many infected fruit drop early. Spores overwinter on bark, twigs, and old infected leaves and often appear as a dusty white coating. Infection occurs through bud scales in mid- to late winter just as buds begin to swell or on slow growing shoots and leaves during a cool and wet growing season. Maximum susceptibility is between bud break and petal fall.
<b>Recommendations</b> <b>Cultural:</b> Remove all fallen infected leaves. Plant a curl resistant tree such as: 'Autumn Rose,' 'August Etter,' 'Avalon,' 'Avalon Pride,' 'Charlotte,' 'Early Charlotte,' 'Early Crawford,' 'Frost,' 'Indian Free,' 'Kreibich,' 'Muir,' 'Nanaimo,' 'Oregon Curl Free' and 'Q-1-8.'  <b>Chemical:</b> Two fungicide applications are recommended for western Oregon: at 50% leaf fall (late October), and again at delayed dormant (usually in late February, before floral buds open). Refer to PNW for specific information.

#13

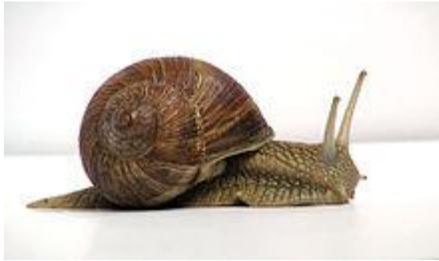


## Benton County Master Gardener Problem Diagnosis Scenario # 14

### (Slugs and Snails)

<b>Problem</b> I have found holes in my hosta leaves.
<b>Description (Spring)</b> There are holes on the edges and in the centers of the leaves, up to one inch.
<b>Questions and Answers</b>  <b>Question:</b> Have you seen insects or slugs on the leaves? <b>Answer:</b> Not on the leaves. I do have some slugs elsewhere in the garden, though.  <b>Question:</b> Have you looked at night? <b>Answer:</b> No  <b>Question:</b> Have you noticed slime trails? <b>Answer:</b> I have noticed slime trails nearby.  <b>Question:</b> Have you taken any action, yet? <b>Answer:</b> No, I was waiting to talk to you.
<b>Reference(s)</b> <a href="http://extension.oregonstate.edu/gardening/node/995">http://extension.oregonstate.edu/gardening/node/995</a> ); <a href="http://extension.oregonstate.edu/gardening/start-controlling-garden-slugs-early-fall-says-osu-slug-expert">http://extension.oregonstate.edu/gardening/start-controlling-garden-slugs-early-fall-says-osu-slug-expert</a> ; <a href="http://extension.oregonstate.edu/catalog/pdf/ec/ec1586.pdf">http://extension.oregonstate.edu/catalog/pdf/ec/ec1586.pdf</a>
<b>Diagnosis</b> <b>Slugs or Snails:</b> They are the most common pests of hosta.
<b>Recommendations</b> Confirm the pests are snails or slugs by checking with a flashlight, top and bottom of leaves. <b>Cultural:</b> Cultivate soil and remove weeds, debris, and decaying organic matter that provide breeding and/or hiding places. Trap slugs by placing boards or wet newspapers out, then check at night and kill them by putting in bucket of soapy water, crushing or putting in plastic bag and throw away. <b>Chemical:</b> We recommend the use of iron phosphate type baits (like Sluggo) which kill slugs and snails but is non-toxic to people, pets and birds. It is often most effective when used starting in fall when the first rains come: when slugs come to the soil surface to mate and lay eggs. Then apply later when planting and when plants are small.

#14



**Benton County Master Gardener Problem Diagnosis Scenario #15**  
**(Corn Earworm)**

<b>Problem</b> Something is eating my corn.
<b>Description (Late August)</b> My ears of corn have a worm and a bunch of icky black stuff at the top end. Is it OK to eat the rest of the ears?
<b>Questions and Answers</b>  <b>Question:</b> How prevalent is the problem? <b>Answer:</b> It's on about 12 plants now, but it seems to be expanding.  <b>Question:</b> Can you describe the worm? <b>Answer:</b> Most are greenish, but some are brown. They are about an inch long, maybe longer.  <b>Question:</b> Have you taken any action thus far? <b>Answer:</b> No, not yet.
<b>Reference(s)</b> <a href="http://uspest.org/pnw/insects?22VGTB21.dat">http://uspest.org/pnw/insects?22VGTB21.dat</a> <a href="http://horticulture.oregonstate.edu/content/corn-earworm">http://horticulture.oregonstate.edu/content/corn-earworm</a> <a href="http://cru.cahe.wsu.edu/cepublications/eb1455e/eb1455e.pdf">http://cru.cahe.wsu.edu/cepublications/eb1455e/eb1455e.pdf</a> <a href="http://lancaster.unl.edu/hort/articles/2007/cornearworm.shtml">http://lancaster.unl.edu/hort/articles/2007/cornearworm.shtml</a>
<b>Diagnosis</b> <b>Corn earworm:</b> The lifecycle consists of eggs (the size of 1/2 a pinhead on corn silk), larvae, pupae (1", reddish brown which overwinter in soil), and adult moths (wingspan 1 1/2"). The moths, active in the evening & night, lay eggs on corn silk, which will then become the larvae. The larvae feed on the ear of corn. Extensive dark excrement is produced at ear tip by larvae.
<b>Recommendations</b> <b>Cultural:</b> Plant resistant varieties. Those with long, tight husks are more resistant. Plant early. Early maturity gets ears farther along before earworms become numerous and active. Attach clothespin where silk meets the ear to exclude earworms. Plow areas where corn was grown in the fall to prevent overwintering of pupae. <b>Biological:</b> Several options available, including green lacewings, damsel bugs, etc. An egg parasite wasp, <i>Trichogramma</i> , lays eggs inside the earworm egg. <b>Chemical:</b> Some options are available: application of mineral oil to the silk just inside the tip of each ear with an oilcan suffocates young larvae. According to the PNW Insect Management Handbook (link above) there are additional chemical controls approved for home use.  It is all right to cut off the affected part of the ear and eat the rest.

#15



## Benton County Master Gardener Problem Diagnosis Scenario #16

### (Blossom End Rot)

<b>Problem</b> My tomatoes are rotting from the bottom up.
<b>Description (Late August)</b> There is a black, leathery area on the bottoms of my tomatoes.
<b>Questions and Answers</b>  <b>Question:</b> How many plants do you have? Are they all affected? <b>Answer:</b> I have four; all are affected except the one I have planted in a different location.  <b>Question:</b> Do all the fruit have the problem? <b>Answer:</b> Most of them do; it seems like a few of the smaller less developed fruits are OK.  <b>Question:</b> How much and how often are you watering the plants? <b>Answer:</b> I water for an hour every other day using drip irrigation.  <b>Question:</b> What about fertilizer? <b>Answer:</b> I haven't put any fertilizer on.  <b>Question:</b> How is the drainage? <b>Answer:</b> Not very good. Clay soil.  <b>Question:</b> Have you had a soil test done? <b>Answer:</b> No.
<b>Reference(s)</b> <a href="http://pnwhandbooks.org/plantdisease/tomato-lycopersicon-esculentum-blossom-end-rot">http://pnwhandbooks.org/plantdisease/tomato-lycopersicon-esculentum-blossom-end-rot</a>
<b>Diagnosis</b> <b>Blossom End Rot:</b> Physiologic disorder causes a sunken, black, leathery depression at bottom of fruit. It is caused when demand for calcium exceeds supply. Can be a simple lack of calcium or can be caused by excessive nitrogen fertilization that can impede movement of calcium into plant. High salt levels in the soil can also cause calcium uptake problems. Uneven watering may make the problem worse.
<b>Recommendations</b> <b>Cultural:</b> <ol style="list-style-type: none"><li>1. Take a soil test to ensure soil has enough calcium. Tomato plants prefer pH between 6.8 and 7. Apply lime in the fall to ensure enough calcium is available for plants next year. Mix lime in 8 to 12 inches deep.</li><li>2. Do not overwater. Water deeply every 7 to 10 days. Use mulch in conjunction with regular watering schedule to ensure soil stays evenly moist.</li><li>3. Do not plant tomatoes where water stands. Maintain well-drained soil.</li></ol> <b>Biological &amp; Chemical:</b> None

#16



## Benton County Master Gardener Problem Diagnosis Scenario #17

### (Rhubarb problems)

<b>Problem</b> My rhubarb plants are not doing well. What can I do to get a good crop?
<b>Description</b> My rhubarb plants are small and don't produce useable fruit. The stalks are skinny, and there are not many of them.
<b>Questions and Answers</b>  <b>Question:</b> How many plants do you have? <b>Answer:</b> Hard to tell as they are all bumped up against each other.  <b>Question:</b> How old are your plants? <b>Answer:</b> At least seven years old; they were there when we moved in. We have never had a good crop.  <b>Question:</b> Do you fertilize? <b>Answer:</b> No, I heard rhubarb doesn't need any.  <b>Question:</b> How do you water? <b>Answer:</b> Occasionally, irregularly.
<b>Reference(s)</b> <a href="http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/18475/ec797.pdf">http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/18475/ec797.pdf</a> Bradley, Fern Marshall. <i>Rodale's Vegetable Garden Problems</i> . 2007: Rodale. Pp. 342-345.
<b>Diagnosis</b> <b>Over-crowded crown:</b> The crown has become overgrown and crowded. Water regularly and provide nutrition.
<b>Recommendations</b> <b>Cultural:</b> <ol style="list-style-type: none"><li>1. Fertilize in spring as plants begin to grow. See OSU extension pamphlet for amount.</li><li>2. Apply compost or well-rotted manure in the fall after the leaves dies back.</li><li>3. Water regularly and well. Cultivate out weeds in the spring and keep them out from around base of plants. Remove any flower stalks that appear as soon as possible.</li><li>4. The crown needs to be divided every four to five years. Leave 1/3 of the original plant. Trim back to four or five buds. Can start new plants with divisions as long as they have at least one active bud. Plant at least 36 inches away from mother plant.</li><li>5. Check soil pH. Rhubarb tolerates pH down to 5.0 but produces best in pH 6.0-6.8. Apply lime in the fall to adjust pH if soil is too acid.</li></ol>

#17



Spindly, less than pencil-sized stalks



Nice harvest



Now that is a healthy rhubarb plant leaf!

## Benton County Master Gardener Problem Diagnosis Scenario #18

### (Pear Sawfly—aka Pear Slug)

<b>Problem</b> The leaves of my pear and cherry trees are being eaten.
<b>Description (June)</b> Flatish, dark olive or black slug-like thing with one end broader than the other is found on the leaves that have the damage on it. It's eating away the flesh of the leaves but leaving a see-through sort of bone structure. Some are very small while others are larger, at least an inch or more long.
<b>Questions and Answers</b>  <b>Question:</b> How long has this been a problem? <b>Answer:</b> I don't know. I first saw them last summer and began to look for them this year. I first noticed them in May. There seems to be more and more of them as time goes on.  <b>Question:</b> How many pear and cherry trees have this problem? <b>Answer:</b> All of them, but the pear trees seem to have the most damage.  <b>Question:</b> How many trees total? <b>Answer:</b> Six. 2 Asian and 1 European pear, 2 Sweet Cherry and 1 Sour Cherry. The European pear did not have any last summer, but this year it does. It is somewhat separated from the rest of the orchard.  <b>Question:</b> Do you spray your trees? <b>Answer:</b> Yes, for disease only.  <b>Question:</b> Have you seen anything else on the leaves? <b>Answer:</b> No, except maybe some spiders. I have seen a few orange looking blobs on some leaves; I don't know what that is either.  <b>Question:</b> How many leaves have damage? <b>Answer:</b> I would say maybe five to ten percent; more were affected at the end of the summer last year.  <b>Question:</b> Do the affected trees look unhealthy? Are they blooming and producing fruit? <b>Answer:</b> Yes, they look healthy; the fruit is not affected. The damaged leaves just look bad. I am worried that it is going to hurt my trees if it gets bad enough.
<b>Reference(s)</b> Pacific Northwest Insect Management Handbook, Tree Fruits section, pear <b>and</b> cherry. <a href="http://uspest.org/pnw/insects">http://uspest.org/pnw/insects</a>
<b>Diagnosis</b> <b>Pear Sawfly:</b> The larva initially resembles a small slug due to the olive green slime that covers the body and the fact that the head is wider than the rest of the body. Larvae feed on the upper surface of leaves, skeletonizing them. Pear sawfly overwinters as a pupa in a cocoon 2 to 3 inches deep in the soil. Adults emerge in late April to May. The adult female inserts eggs into leaf tissue, and eggs hatch in 10 to 15 days. Larvae immediately begin to feed on the upper surface of the leaf. After 3 to 4 weeks, they drop to the soil to pupate. Second generation adults emerge in July, and larvae from this generation feed in August and September. Most larvae from this generation drop to the ground to overwinter. Adult, eggs, and larva on damaged leaf are shown in photos below.
<b>Recommendations</b> Damage rarely affects the tree. Consider whether the health of the tree is being affected prior to treating. <b>Cultural:</b> Pick off the leaves or use a very strong stream of water. Can also apply a very fine dust coating to suffocate the larvae. <b>Biological:</b> Little is known about biological control of this insect. <b>Chemical:</b> Carbaryl, esfenvalerate, insecticidal soap, kaolin clay, malathion.

#18



**Benton County Master Gardener Problem Diagnosis Scenario #19**  
**(Spinach Leaf Miner)**

**Problem**

I have damage on my spinach leaves. What is infecting my spinach, and what do I do to get rid of it?

**Description (May)**

Some of the leaves have curly looking, whitish, or silver-looking tracks meandering on the leaves and then it turns into a white big blotch.

**Questions and Answers**

**Question:** How many spinach plants do you have and how many of them are infected?

**Answer:** I have two rows of spinach, and I would say that about one quarter to one third is infected.

**Question:** When did you first notice the damage?

**Answer:** Some of the plants seemed to be effected as seedlings, and now more and more plants are infected as time goes by.

**Question:** Have you seen any insects on your spinach plants?

**Answer:** Just some small fly looking things. They don't appear to be eating anything, just landing on the plants. The white areas don't have any holes that I can see.

**Question:** Have you gone out to look at night?

**Answer:** No.

**Reference(s)**

University of California <http://www.ipm.ucdavis.edu/PMG/r732300311.html>

Bradley, Fern Marshall. *Rodale's Vegetable Garden Problems*. 2007: Rodale. Pp. 241-243.

**Diagnosis**

**Spinach Leaf Miner:** Adult lays eggs on underside of leaves. Larvae burrow in between the cell layers of the leaf creating serpentine tracks in the leaf. Maggots emerge from the leaves and drop down into the soil to form pupa, the pupa then turn into flies allowing several generations to grow per year.

**Recommendations**

**Cultural:** To prevent infections, cover seedlings with row cover if not yet infected.

Check underside of leaves regularly and squash egg masses. Pick off and destroy infected leaves. Also check plants NOT infected for eggs. Cultivate frequently around plants.

Rotate crops. Remove plants that are hosts to leaf miners (pigweed, plantain, chickweed, lamb's quarter).

**Biological:** Natural predators such as parasitic wasps and entomopathogenic nematodes. Create plantings to attract parasitic wasps.

**Chemical:** Not recommended as control of adult stage as it also harms beneficial insects and could result in higher numbers of the pests. Chemical control of larvae not effective; larvae are protected by the leaf cells they are eating.

#19



Infected Leaf



Infested Plant

**Benton County Master Gardener Problem Diagnosis Scenario #20**  
**(Black Spot Fungus)**

<p><b>Problem</b> I have black, roundish spots on my rose leaves.</p>
<p><b>Description (June)</b> The spots are small and round. Range in size from pretty small to 1” and larger. The spots can develop yellow areas around them. Some leaves turn yellow and then fall off. Some of my roses have lost a lot of leaves.</p>
<p><b>Questions and Answers</b></p> <p><b>Question:</b> Are all your roses affected? <b>Answer:</b> No, but several are.</p> <p><b>Question:</b> How many roses do you have? Are they all in the same general area of the yard? <b>Answer:</b> I have about 15 roses. The disease appears in all parts of the yard. One area of the yard is harder hit than the rest.</p> <p><b>Question:</b> What is different in the area that is hardest hit? <b>Answer:</b> Those roses are planted closer together in a rose garden kind of way. They have grown together over the years.</p> <p><b>Question:</b> How do you water your roses? <b>Answer:</b> All my flower beds have in ground irrigation. The sprinklers spray.</p> <p><b>Question:</b> How many hours of sun do your plants get during the day? <b>Answer:</b> All of my roses are in places that get full sun during the day.</p> <p><b>Question:</b> What have you done thus far? <b>Answer:</b> Nothing. I just got back from a trip.</p>
<p><b>Reference(s)</b> PNW Disease Handbook <a href="http://pnwhandbooks.org/plantdisease/rose-rosa-sp-and-hybrids-black-spot">http://pnwhandbooks.org/plantdisease/rose-rosa-sp-and-hybrids-black-spot</a></p>
<p><b>Diagnosis</b> <b>Black Spot Fungus:</b> A fungal disease spread by rains or overhead watering, especially when temperatures are 50-80 degrees. It can cause extensive leaf drop, spreads rapidly, and causes low vigor in the plant.</p>
<p><b>Recommendations</b> <b>Cultural:</b> Plant resistant roses. Avoid dense planting; prune to allow air movement between the plants. Don't water leaves. Change sprinkler heads to bubblers to keep leaves as dry as possible. Remove and destroy all affected leaves and stems. Prune infected canes to 2 buds. <b>Chemical:</b> Apply fungicide early in spring at 1-2 week intervals. See PNW for recommended chemicals. Almost all home-use fungicides are registered for this disease.</p>

#20



## Benton County Master Gardener Problem Diagnosis Scenario #21

### (Mummy Berry)

<b>Problem</b> I'm having a lower than usual yield of blueberries from my bushes this year.
<b>Description (July)</b> As my blueberries are ripening, some of them are turning brown and falling off the branch.
<b>Questions/Answers</b> <b>Question:</b> Did you notice any of the following? Blossoms turning brown and withering? New leaves blackening, wilting, dying? Brownish-gray mold on flower stalks and leaves? Fruiting body (cup-shaped stage of fungus), light brown to brown, are coming out of dead berries on the ground in the spring? <b>Answer:</b> We did notice some problems with the new shoots looking poor. <b>Question:</b> Did you notice any of these problems last year? <b>Answer:</b> No <b>Question:</b> What have you tried so far? <b>Answer:</b> Nothing
<b>Reference(s)</b> PNW Plant Disease Handbook; <a href="http://cru.cahe.wsu.edu/cepublications/eb1640/eb1640.html">http://cru.cahe.wsu.edu/cepublications/eb1640/eb1640.html</a>
<b>Diagnosis</b> <b>Mummy Berry:</b> Fungus. <i>Monilinia vaccinii-corymbosi</i> . The first infection is wind dispersed and affects flowers and twigs. A second infection (3 weeks later) is dispersed to healthy flowers by wind, rain, and pollinators. The flowers are most susceptible just as they open. The blighted flowers then produce infected fruit that is withered and dry (mummified). The fruit then fall to the ground where it over-winters.
<b>Recommendations</b> <b>Cultural:</b> Use vigilance in disrupting the lifecycle of the fungus. Cultivate around plants in spring and fall to destroy emerging spores. Remove diseased fruit and other plant material. Watch for and remove fruiting bodies from the ground beneath the bushes in the spring. <b>Biological:</b> None in our wet climate <b>Chemical:</b> A fungicide that can be sprayed on developing blossoms to protect them from the fungal spores is available to home gardeners.

#21



## Benton County Master Gardener Problem Diagnosis Scenario #22

### (Moss in Lawns)

<b>Problem</b> My lawn is being taken over by moss.
<b>Description</b> Large parts of the lawn are mossy, and the grass is dying out in that area.
<b>Questions/Answers</b> <b>Question:</b> Do you fertilize or lime the lawn? <b>Answer:</b> Only minimal fertilizer. Never lime. <b>Question:</b> Is this in a shady area of your yard? <b>Answer:</b> Yes. <b>Question:</b> Have you had the soil tested for pH and available nutrients? <b>Answer:</b> Only for pH, the soil is moderately acidic. <b>Question:</b> What have you tried so far? <b>Answer:</b> Nothing.
<b>Reference(s)</b> OSU Extension Publication FS55 "Controlling Moss in Lawns."
<b>Diagnosis</b> <b>Moss in lawn:</b> a result of Willamette Valley climate conditions. Most often moss invades lawns that lack vigor; this lack can be a result of low fertility, high acidity, shade, wet soil or insect damage.
<b>Recommendations</b> <b>Cultural:</b> Healthy turf grass can better compete with moss. Adjust soil pH to 6.0 to 6.5 and fertilize regularly. If possible, increase the amount of sunlight on the lawn by selectively pruning or removing trees. Select a shade-specific seed mix and over seed the shady areas. Dethatching can be helpful if done in the spring (March or April) so that the lawn has time to regain vigor during the summer when moss is at a competitive disadvantage. <b>Chemical:</b> It is possible to chemically control with an Iron (Fe) compound. (Note: Iron (Fe) will stain concrete.) Cryptocidal soaps are another option for controlling moss.

#22



**Benton County Master Gardener Problem Diagnosis Scenario #23**

**(Cypress Tip Moth)**

<p><b>Problem</b> The tips of my arborvitae are all turning brown. What is causing it, and what should I do?</p>
<p><b>Description (June)</b> The arborvitae tips turned brown in the late winter and into the spring, later the tips of the branches fall off, defoliating the plants.</p>
<p><b>Questions and Answer</b></p> <p><b>Question:</b> How many plants is the problem affecting? <b>Answer:</b> I have a hedge of about 15 plants.</p> <p><b>Question:</b> Are all the plants affected? <b>Answer:</b> Yes, some more than others</p> <p><b>Question:</b> Have you used any herbicides on your property? <b>Answer:</b> No</p> <p><b>Question:</b> Have you noticed any insects or whitish cocoons in the affected areas? <b>Answer:</b> There are some greenish worm-looking things on all of the plants along with some white cone like structures. I thought they were like pine cones?</p>
<p><b>Reference(s)</b> <a href="http://oregonstate.edu/dept/nurspest/cypress_tip_moth.htm">http://oregonstate.edu/dept/nurspest/cypress_tip_moth.htm</a> / OSU Pacific Northwest Nursery IPM, as of 5/29/08</p>
<p><b>Diagnosis</b> <b>Cypress Tip Moth.</b> The adult cypress tip moth (cypress tip miner) is silver-tan and approximately 0.125 inch long. The larvae are green, about 0.125 inches long and do the damage. The cocoon is a white, somewhat papery structure made in dead or living foliage. The larvae tunnel into the growing points of the 1- and 2-year-old shoot tips causing yellowing, then browning, then twig dieback. Damage typically is limited to the tips of twigs. The exit holes are dark and may resemble symptoms of leaf blight, a fungal disease. Foliage does not discolor in the affected areas until late winter. After this, the brown, dead twigs break off readily. To be certain, bring us a sample of a few damaged tips.</p>
<p><b>Recommendations</b></p> <p><b>Cultural:</b> American arborvitae (<i>Thuja occidentalis</i>) is very susceptible to infection. Western red cedar (<i>Thuja plicata</i>) is very resistant.</p> <p><b>Biological:</b> None</p> <p><b>Chemical:</b> Late spring to early summer spray. 1. Acephate, 2. Cyfluthrin, 3. Spinosad A&amp;D</p>

#23



## Benton County Master Gardener Problem Diagnosis Scenario #24

### (Apple Maggots)

<b>Problem</b> My apples are ripening but they all have little dimples all over the fruit and are a little deformed.
<b>Description (September)</b> Some of the dimpling is soft to the touch and makes the fruit ugly. What is causing this, and what can I do about it?
<b>Questions and Answers</b> <b>Question:</b> How many apple trees do you have? <b>Answer:</b> Three. They all have the same dimpling on the apples. <b>Question:</b> Is there damage on all of the fruit? <b>Answer:</b> Yes. <b>Question:</b> Did you spray your trees this year? <b>Answer:</b> I have never sprayed any of my trees. <b>Question:</b> Have you noticed any insect activity on or around your trees this season? <b>Answer:</b> There were a lot of flies in my orchard in early summer. <b>Question:</b> Have you cut open any of the apples to see what is inside? <b>Answer:</b> No.
<b>Reference(s)</b> OSU - EC-1633-E "The Apple Maggot in Oregon", December 2009, Gene Fisher & Jeff Olsen / PNW - <a href="http://insects.ippc.orst.edu/pnw/insects?34RUST05.dat">http://insects.ippc.orst.edu/pnw/insects?34RUST05.dat</a>
<b>Diagnosis</b> <b>Apple maggot:</b> Larvae of this fly are doing the damage. The larva is cylindrical, tapering to a point. It has a non-distinct head. It is white to greenish with 2 dark mouth hooks. Eggs are laid under the skin of the apple. They emerge as larvae, which tunnel into the apple to feed. Eventually, the apple drops and the maggot over-winters in the soil as a pupa. The adult fly emerges in June. Early maturing apple varieties are the most severely affected.
<b>Recommendations</b> <b>Cultural:</b> Regular inspection and removal of fruit from infested trees can greatly reduce apple maggot populations in backyards. At weekly intervals from early August to fruit harvest, pick up and destroy any fallen fruit, in order to prevent apple maggots from completing their larval development. <b>Biological:</b> None <b>Chemical:</b> Kaolin clay (Surround At Home) has been effective in managing apple maggot in backyard situations, provided a thorough and visible coating on the foliage and fruit is maintained from early August until harvest. (Follow directions on label.) Other treatments for home use are pyrethrins, malathion, acetamiprid, carbaryl, esfenvalerate, and gamma-cyhalothrin.

#24



Sample Apple



When dissected, this is what was found.

## Benton County Master Gardener Problem Diagnosis Scenario #25

### (Codling Moth)

<b>Problem</b> My apples have horrible spots on them.
<b>Description (Late September)</b> The brown spots are actually holes and some have crumbly stuff around them.
<b>Questions and Answers</b>  <b>Question:</b> Do you spray for apple diseases and/or pests? <b>Answer:</b> I spray for apple scab every year, but I don't spray for pests or insects.  <b>Question:</b> Have you noticed any insects on the tree? <b>Answer:</b> Yes, I've seen some brown moths.  <b>Question:</b> Have you cut into the damaged area of the apple? <b>Answer:</b> Yes, I have.  <b>Question:</b> Are there any insects inside the fruit? <b>Answer:</b> There are some worms.
<b>Reference(s)</b> PNW Insect Management Handbook, and EC631-E 'Managing Diseases and Insects in Home Orchards'
<b>Diagnosis</b>  <b>Codling Moth.</b> The larvae of the adult moth cause the damage. Adults emerge around bloom and lay eggs on leaves, sometimes fruit. Larvae emerge feeding on fruit by boring to the center and eating fruit and seeds. As they mature, they push frass out of the entry hole. The larvae are whitish with black heads when young. They are pinkish with brown heads when mature. They range in size from .1" when hatched to .8" at maturity. Larvae spin cocoons. They may overwinter, or they may emerge in 3-4 weeks. Adults are active in July and August.
<b>Recommendations</b>  <b>Cultural:</b> Disrupt the life cycle of the moth using traps and lures. Collect and bag the affected fruit. Use a sticky substance around the trunk, and clean up debris around trees so larvae do not over-winter.  <b>Chemical:</b> To be effective, insecticide coverage must be maintained whenever fruit and moths are present. Spray 10 days after petal fall and in spring and summer. Applications every 7-14 days may be necessary, especially near commercial orchards. <b>Bifenthrin, carbaryl, Cyd-X, esfenvalerate, Gamma cyhalothrin, kaolin, malathion, and spinosad</b> are registered for homeowner use. Pheromone traps can be used to accurately time the first spray. ( <b>Bold:</b> Recommended by both references.)

#25



**Benton County Master Gardener Problem Diagnosis Scenario #26**  
**(Bacterial Blossom Blast)**

<p><b>Problem</b> My pear tree is looking really bad.</p>
<p><b>Description (Late April)</b> The leaves have spots, and the blooms are all shriveled and dying.</p>
<p><b>Questions and Answers</b></p> <p><b>Question:</b> What kind of pear tree is it? <b>Answer:</b> It is a Bartlett pear.</p> <p><b>Question:</b> What are the growing conditions? <b>Answer:</b> Full sun, loam soil and regular irrigation.</p> <p><b>Question:</b> What parts of the tree are affected? <b>Answer:</b> Most of the blossoms, some worse than others. Also, some stems seem to be dying and the bark is flaking.</p> <p><b>Question:</b> Do you see any indications of insect activity. <b>Answer:</b> Nothing I've noticed.</p>
<p><b>Reference(s)</b> <a href="http://pnwhandbooks.org/plantdisease/pear-pyrus-sp-pseudomonas-blossom-blast-and-dieback">http://pnwhandbooks.org/plantdisease/pear-pyrus-sp-pseudomonas-blossom-blast-and-dieback</a></p>
<p><b>Diagnosis</b> <b>Bacterial (Pseudomonas) Blossom Blast.</b> Rain and low temperatures, especially frost during bloom, increase incidence of blossom infection. Bartlett is one variety that is susceptible. Infection causes blossom blast, leaf spots, dieback of twigs and spurs, dormant-bud-death, and bark cankers. Resembles fire blights, but blossom blast never extends more than 1-2 inches into spur.</p>
<p><b>Recommendations</b></p> <p><b>Cultural:</b> Protect from frost using a variety of methods including overhead irrigation or wind machines. Prune Asian pear cultivars in summer. Remove and destroy infected tissue.</p> <p><b>Chemical:</b> Spray fixed copper products or streptomycin sulfate per label instructions.</p>

#26



## Benton County Master Gardener Problem Diagnosis Scenario #27

### (Lichens)

#### Problem

My trees are covered with this fluffy looking stuff. I am worried that this is harming my trees. I also think it's ugly. How do I get it off?

#### Description

There are large clumps of light grayish green "moss" all over the branches of my trees.

#### Questions and Answers

**Question:** What kind of trees are you talking about?

**Answer:** I don't know. The moss appeared all of a sudden this winter.

**Question:** Are the trees deciduous?

**Answer:** Mostly, but a couple of the evergreens also have some of it.

**Question:** Where on the trees does this appear?

**Answer:** On the trunk bark and branches.

**Question:** Are you sure it is hurting your trees?

**Answer:** No, but there's an awful lot of it. I am afraid that the leaves will not come back next year because the moss will choke out the sun.

#### Reference(s)

<http://people.oregonstate.edu/~mccuneb/lichenharm.htm>

<http://www.extension.umn.edu/yardandgarden/ygbriefs/p429lichens.html>

#### Diagnosis

**Lichens**, not moss: Lichens do not parasitize the tree that they are on. They use the tree as a support. Studies have indicated that lichens may be a good indicator of the environment as they only occur where the air is relatively pure and not where there is a lot of air pollution.

#### Recommendations

Leave the lichens as they are.

**Cultural:** Care for the tree to ensure that the tree thrives and canopy is thick to reduce sun reaching branches where the lichens occur, reducing the food source to the lichen.

Plant smooth barked trees as they give lichens less of a foothold.

Physically remove lichens (power washer or brushes), but take care not to hurt the bark of the tree as you could open wounds that will allow bacterial and fungal diseases to attack tree.

**Biological:** none

**Chemical:** If it is a fruit tree, use copper sulfate as it seems to reduce lichen growth.

#27



## Benton County Master Gardener Problem Diagnosis Scenario #28

### (Anthracnose on dogwoods)

<b>Problem</b> The leaves on my dogwood tree are discolored. The tree itself looks unhealthy.
<b>Description (Early June)</b> Leaf edges are brownish, especially at tips. Flowers are also brown tipped.
<b>Questions and Answers</b> <b>Question:</b> Where on the tree is this problem? <b>Answer:</b> All over the tree. <b>Question:</b> When did the problem first appear? <b>Answer:</b> About time of flowering (early to mid spring). <b>Question:</b> What happens during the course of the year? <b>Answer:</b> All appears okay as leaves are coming out. Around time of first blooming, leaf tips begin turning brown. During full bloom, more of each leaf is turning brown. Some dead branches are evident later on. There is poor fruit set with reduced size fruit. Leaves fall early. <b>Question:</b> What type of dogwood tree? <b>Answer:</b> Eastern flowering dogwood ( <i>cornus florida</i> ).
<b>Reference(s)</b> WSU Extension <a href="http://gardening.wsu.edu/library/lpro003/lpro003.htm">http://gardening.wsu.edu/library/lpro003/lpro003.htm</a>
<b>Diagnosis</b> <b>Anthracnose</b> ( <i>Discula</i> species, a fungus): Large, brown irregularly shaped patches develop on the leaves. They are usually well defined with dark grayish green, purple, or brown margins. Infections can be located on the leaf mid-vein forming wedge-shaped blotches. Sometimes leaves have brown spots (1/16-1/4" across, often with dark brown to purple margins. Spots and blotches may be on the same leaf. Infected leaves usually drop early. Defoliation may be severe. <i>Cornus kousa</i> have good resistance. Native dogwoods are highly susceptible. Disease occurs most frequently when spring/summer is moist.
<b>Recommendations</b> <b>Cultural:</b> Gather leaves and dispose of (hot compost is not okay). Prune out dead branches and carefully dispose of in garbage or burn. After pruning, clean pruning tools with alcohol or 10% bleach solution to prevent re-infection or infecting other trees. Results will probably be incomplete as it is difficult to remove all infected tissue. <b>Biological:</b> none <b>Chemical:</b> Spray as recommended in PNW

#28



Healthy tree



Affected tree



Severely affected tree, one week later

## Benton County Master Gardener Problem Diagnosis Scenario #29

### (Nutria)

<b>Problem</b> I have some mutant rats coming onto my property.
<b>Description (July)</b> Large rodents are damaging vegetation, trees, and even chewing on corners of structures—they eat everything! They are aggressive toward pets. I am afraid to let out my Shih Tzu or my cats. And, they hiss at you if you try to chase them away.
<b>Questions and Answers</b>  <b>Question:</b> How large and what color are the rodents? <b>Answer:</b> Bigger than a large cat and brown to black.  <b>Question:</b> Have you seen the teeth? <b>Answer:</b> Yes. They looked like a rat's teeth in front.  <b>Question:</b> Are you near a creek or river? <b>Answer:</b> Yes. I just created a canal from a stream, so I can use the water to irrigate my garden, orchard, and lawn. That is when I started being bothered by the RATS!!  <b>Question:</b> What does the tail look like? <b>Answer:</b> Round, like a rat, but with hair on it.
<b>Reference(s)</b> <a href="http://www.dfw.state.or.us/wildlife/living_with/nutria.asp">http://www.dfw.state.or.us/wildlife/living_with/nutria.asp</a>
<b>Diagnosis</b> <b>Nutria:</b> These non-native rodents burrow into the banks of waterways causing erosion that cause weakening of roadbeds, stream/river banks, dams, and dikes. Rain can wash out collapsed burrows causing further damage. Nutria eat crops and girdle fruit, nut, deciduous and coniferous trees, and ornamental shrubs. Foraging nutria can also significantly effect natural plant communities; the native muskrat has been mostly eliminated where nutria have become established.
<b>Recommendations</b> <b>Cultural:</b> <ul style="list-style-type: none"><li>• Locate gardens away from water sources such as streams, canals, etc.</li><li>• Low woven-wire fence, about 3 feet, with 6" buried apron to protect gardens or vegetation</li><li>• Electric wire barriers—one wire 6" off the ground will be effective</li><li>• Wire baskets around individual plants or metal shields around trees provide protection</li><li>• Live trap them along active trails. Use sweet potatoes or carrots as bait.</li></ul> <p style="text-align: center;"><i>Extreme care should be taken when handling captured nutria.</i></p> <b>Chemical:</b> No chemical repellents for nutria are currently registered.
<b>LEGAL NOTE:</b> In Oregon, nutria are classified as unprotected Nongame Wildlife (OAR 635-044-0132). As unprotected wildlife nutria may be trapped or shot ( <b>cannot be relocated</b> ). No license is needed for a landowner to control nutria on his/her own property. Most cities have restrictions on leg-hold trapping or the discharge of firearms within their city limits--live trapping is usually the main population control measure inside the city limits.

#29



Aren't they cute???

You can Live Trap them – and kill them.

You can shoot them.

**YOU CANNOT RELOCATE THEM – It is illegal to do so in Oregon!**

## Benton County Master Gardener Problem Diagnosis Scenario #30

### (Azalea Bark Scale)

<b>Problem</b> My azaleas seem to be dying. They have turned dirty looking and unhealthy.
<b>Description (June)</b> Some of the leaves are shiny and sticky. Some are scummy and dirty like they are covered in dark ash.
<b>Questions and Answers</b>  <b>Question:</b> What other problems have you seen? <b>Answer:</b> There are white, cottony things along the branches.  <b>Question:</b> Have you seen any insects? <b>Answer:</b> Yes, there seem to be a bunch of very small reddish insects.  <b>Question:</b> Are you seeing similar problems on any other plants? <b>Answer:</b> Most of the azaleas are affected and I'm starting to see the same symptoms on a couple of my rhododendrons.
<b>Reference(s)</b> PNW Insect Management Handbook; OSU Pacific Northwest Nursery IPM
<b>Diagnosis</b> <b>Azalea bark scale:</b> Scale insects live on bark and stems, especially in branch crotches. They insert a straw-like mouthpart into plants and suck fluids, resulting in loss of plant vigor. As they feed and mature, they form a white, cottony protective shell over their bodies. The scale excretes honeydew which promotes the growth of sooty mold.
<b>Recommendations</b>  <b>Cultural:</b> Rub scale off plants by hand with a glove or toothbrush. Prune off major infestations. Apply Tanglefoot, "stickem", or a similar adhesive around infestations of adult scale to catch the crawler stage. As with aphids, avoid excessive nitrogen fertilizer, as this favors population increase.  <b>Biological:</b> Larvae of green lacewings and other insects are aggressive predators of scale. However, biological control will not necessarily prevent significant scale infestations.  <b>Chemical:</b> Scout for dormant stages or crawlers and confirm their presence before spraying. * Dormant Period (January to March) 1) Horticultural oils * During the crawler stage (late spring to early summer) 1) Insecticidal soaps- complete coverage, especially undersides of leaves 2) Acephate

#30



Eggs under covering



Crawler

## Benton County Master Gardener Problem Diagnosis Scenario #31

### (Raspberry Virus)

<b>Problem</b> My raspberries are small and shriveled up. What could be going on?
<b>Description (July)</b> Plants seem small and stunted compared with other years...foliage doesn't look right.
<b>Questions/Answers</b>  <b>Question:</b> Describe the foliage problem you are observing. <b>Answer:</b> There are bright yellow areas along the veins of the leaves.  <b>Question:</b> What does the fruit look like? <b>Answer:</b> It ripens and tastes OK, but it is small and crumbly and falls apart in my hand.  <b>Question:</b> What type of raspberry have you planted?" <b>Answer:</b> I believe we have Puyallups and Meekers.  <b>Question:</b> Are there any other affected plants? <b>Answer:</b> Yes, the Marionberries are looking poor, too.  <b>Question:</b> Have you experienced this problem previously? <b>Answer:</b> No, only this year.
<b>References</b> <a href="http://pnwhandbooks.org/plantdisease/node/3846/print">http://pnwhandbooks.org/plantdisease/node/3846/print</a>
<b>Diagnosis</b> <b>Raspberry Bushy Dwarf Virus:</b> The effect varies on different varieties. The virus complex may not produce symptoms on the foliage of many cultivars but may cause crumbly fruit as in 'Meeker.' On 'Puyallup,' bright yellow areas along the leaf's main and smaller veins give the leaves a "network" appearance. In some red raspberry cultivars, faint ring and line patterns develop on leaves. The disease reduces growth and fruit yield in 'Meeker' and 'Canby' red raspberry, but the major impact is a reduction in fruit quality. Aphids are the vector most of the raspberry viruses.
<b>Recommended Action</b> <b>Cultural:</b> Use certified plant stock. 'Willamette' and 'Chilcotin' red raspberries are immune to raspberry bushy dwarf infection. 'Haida', 'Comox', and 'Heritage' are moderately resistant. Plant in large blocks to slow movement into new plants, especially if fields in the immediate area are infected. <b>Chemical:</b> No recommendations

#31



Healthy



Affected



**Benton County Master Gardener Problem Diagnosis Scenario #32**  
**(Carpenter ants)**

<p><b>Problem</b>  While I was looking under my house for a water leak, I found what looks like small piles of saw dust. I found the water leak but want to know if I have termites or carpenter ants?</p>
<p><b>Description (April)</b>  The house is about 30 years old on a raised foundation with a deck that was added about 8 years ago. The house has lots of trees and bushes around it; some are touching or overhanging the house.</p>
<p><b>Questions and Answers</b></p> <p><b>Question:</b> Do you have samples of the ‘sawdust’ or, if not, how would you best describe it: powder, pellets, fine or course sawdust, stringy or what?  <b>Answer:</b> Yes, I have the sample here. It looks like some black specks are mixed in with the sawdust. I guess I would describe it as stringy</p> <p><b>Question:</b> Have you or your family seen any ants going into your house’s foundation along electrical wires or pipe openings?  <b>Answer:</b> Yes, I have seen a trail of ants crawling up the side of the foundation and going into the crawl space through the vent holes.</p> <p><b>Question:</b> How would you describe the ants? How big are they?  <b>Answer:</b> They are black and large. They are much larger than the black ants that we sometimes get in the kitchen.</p> <p><b>Question:</b> Do you have any of the ants?  <b>Answer:</b> No, I do not like handling bugs!</p> <p><b>Question:</b> Have you tried anything to get rid of the ants?  <b>Answer:</b> No, not yet. I wanted to find out what I was dealing with first.</p>
<p><b>Reference(s)</b></p> <ul style="list-style-type: none"> <li>• 2011 PNW Insect Management Handbook Pages 564, 573.</li> <li>• “Wood-Destroying Pests” in WSU Pest Sense (<a href="http://pep.wsu.edu/pestsense">http://pep.wsu.edu/pestsense</a>)</li> <li>• Carpenter Ants Their Biology and Control: Washington State University Extension - Extension Bulletin 0810 <a href="http://cru.cahe.wsu.edu/CEPublications/eb0818/eb0818.pdf">http://cru.cahe.wsu.edu/CEPublications/eb0818/eb0818.pdf</a></li> </ul>
<p><b>Diagnosis</b>  <b>Carpenter Ants:</b> A sign of ant activity is sawdust accumulating in piles or caught in spider webbing; has a finely shredded appearance. Do not confuse with small sawdust from construction.</p>
<p><b>Recommendations</b>  <b>Cultural Controls:</b></p> <ul style="list-style-type: none"> <li>• Avoid dense shrubbery around homes including tree branches touching eaves.</li> <li>• Avoid wood-soil contact.</li> <li>• Decorative bark around foundations is “attractive” to carpenter ants.</li> <li>• Do not place woodpiles next to house.</li> <li>• Ensure good ventilation in crawl spaces.</li> <li>• Remove stumps or rotting logs near house.</li> <li>• For most successful management, do not create conditions conducive to infestations, especially wet or damp environments that can soften wood in structures.</li> </ul> <p><b>Biological:</b> None  <b>Chemical:</b> A professional pest control service may be necessary to control carpenter ants. Careful inspection by a professional should be made to identify and treat nesting sites within walls. Long-term success will be greater if the parent colony, which is usually established outside of the structure, is located and destroyed.</p>

#32



**Dorsal view of the adult stages of the carpenter ant: Top left—Winged female; top right—Male; bottom left—Minor worker; bottom middle—Intermediate worker; bottom right—Major worker.**

**Benton County Master Gardener Problem Diagnosis Scenario #33**  
**(Cabbageworm-Cabbage Moth/Butterfly)**

<p><b>Problem</b>  My broccoli, cabbage and brussel sprouts are routinely spoiled by holes in the leaves and later in the summer by more serious damage to the edible center parts.</p>
<p><b>Description (June)</b>  Gardener uses raised beds for growing a wide range of vegetables and fruit and has done so for several years. Client is not strictly organic but does not want to use chemicals that might harm bees, birds, or beneficial insects. Client uses artificial fertilizers and some compost, worked into the ground in spring. Uses transplants for all brassica plantings.</p>
<p><b>Questions and Answers</b></p> <p><b>Question:</b> Which of your brassicas seem the have the worst damage?  <b>Answer:</b> Not much difference, but the cabbage does seem to have the most damage on mature leaves.</p> <p><b>Question:</b> Do you apply any pesticides to your veggies?  <b>Answer:</b> No.</p> <p><b>Question:</b> When you check out a damaged leaf, what do you see?  <b>Answer:</b> Holes between the leaf ribs mostly, green/brown slimy stuff in patches on the underside, and sometimes a caterpillar or two.</p> <p><b>Question:</b> What color and size are these?  <b>Answer:</b> Green and hairy--and they can be pretty big, maybe an inch.</p> <p><b>Question:</b> Have you seen other insects?  <b>Answer:</b> Yes, I've seen some white butterflies with dark spots on their wings.</p>
<p><b>Reference(s)</b></p> <ul style="list-style-type: none"> <li>• <i>Pest of the Garden and Small Farm</i>, p. 71 (Imported Cabbage Worm)</li> <li>• <i>Controlling Vegetable Pests</i>, pp. 7-79 (Imported Cabbage Worm)</li> </ul>
<p><b>Diagnosis</b>  <b>Cabbage Moth or Cabbage White Butterfly:</b> The damage is probably being caused by the larvae (caterpillars) of the cabbage moth or cabbage white butterfly.</p>
<p><b>Recommendations</b></p> <p><b>Cultural:</b></p> <ul style="list-style-type: none"> <li>• Prevent the cabbage butterfly from laying eggs by using row covers from transplanting onwards.</li> <li>• Routinely pick off young caterpillars every few days and crush eggs that are found.</li> <li>• Apply the brassica formula of <i>Bt (bacillus thuringiensis)</i> when larvae are first noticed, and continue as directed through the season.</li> <li>• Clean up debris round beds after harvest to reduce overwintering activity.</li> <li>• Consider using resistant cabbage varieties to reduce (but not eradicate) the problem.</li> </ul> <p><b>Biological:</b></p> <ul style="list-style-type: none"> <li>• Parasitic wasps and tachinid fly larvae</li> <li>• Natural enemies: ground beetles, the spined soldier bug, spiders, lacewing larvae, syrphid fly larvae</li> </ul> <p><b>Chemical:</b> Pyrethrum for crops, sabadilla (toxic to honeybees), rotenone (toxic to some beneficials)</p>

#33



Cabbage moth damage



Cabbage moth eggs



Cabbage Moth



Cabbage white butterfly larva



Cabbage white butterfly

## Benton County Master Gardener Problem Diagnosis Scenario #34

### (European crane fly)

<b>Problem</b> My lawn is dying. Some bare spots are beginning to show up as well. Help!
<b>Description (April)</b> Yellowing and brown patches of grass in my lawn, and some bare spots. The problem appears to be getting worse.
<b>Questions and Answers</b>  <b>Question:</b> When did you first notice a problem with your lawn? <b>Answer:</b> End of February or early March. It seems to be getting worse. <b>Question:</b> Did you have any damage in those areas last summer? <b>Answer:</b> I remember having a couple dry spots, but nothing like this. <b>Question:</b> How often do you water? Do know how many inches of water your lawn receives in a week? <b>Answer:</b> The lawn has an automatic sprinkler system. I water every 2 days for 40 minutes. I'm not sure how many inches that is per week. <b>Question:</b> Have you seen any evidence of insects? <b>Answer:</b> We had a heavy rain last week and I had dozens of weird worms on my sidewalk. <b>Questions:</b> How big were these "worms"? <b>Answer:</b> Maybe an inch. They are very tough things; they pop/crunch if you step on them on the sidewalk. <b>Question:</b> Anything else unusual this year? <b>Answer:</b> Yes. I've had a bunch of very large flies in the yard and the house. I have had flocks of starlings in my yard and way more robins than normal. I also have had skunks in my yard almost every night.
<b>Reference(s)</b> <a href="http://whatcom.wsu.edu/cranefly/CFsampling.htm">http://whatcom.wsu.edu/cranefly/CFsampling.htm</a> Washington State University <a href="http://www.ent.orst.edu/urban/e_crane_fly.html">http://www.ent.orst.edu/urban/e_crane_fly.html</a> Oregon State University
<b>Diagnosis</b> <b>European crane fly:</b> There are two species of crane fly larvae that are known to cause damage to turf grass. The larvae feed on shoots, crowns, and roots of turf. Generally, crane flies do not reach large enough numbers to bother healthy, vigorous lawns, but they can occasionally cause problems.
<b>Recommendations</b> <b>Cultural:</b> 1. Quit watering the lawn in late August or September or let the lawn go dormant in dry months. This will dry out the eggs laid by the adults and reduce numbers of larvae. 2. Natural controls will reduce numbers of larvae below levels likely to cause significant damage. (Plant lawn in sun, remove thatch, aerate, mow regularly, water infrequently but deeply, keep lawn well drained). 3. Begin to monitor your grass for damage in January. Damage reaches its peak in late April as larvae quit eating in May. <b>Biological:</b> Encourage birds to your yard; they eat the larvae. Natural enemy is predaceous ground beetles. <b>Chemical:</b> Consider treatment if you find more than 25 in a square foot of turf. Note: WSU recommends treatment if numbers are 50-80/sf.

#34



## Benton County Master Gardener Problem Diagnosis Scenario #35

### (Apple Scab)

<b>Problem</b> My apples are having all kinds of problems.
<b>Description (Early August)</b> Many of my apple trees are affected by some kind of disease. Some of the apples have cracks in them. Others have black, velvety spots on them.
<b>Questions and Answers</b>  <b>Question:</b> Have you been pruning? How aggressively? <b>Answer:</b> Yes, occasionally, but not much.  <b>Question:</b> How are you watering the trees? <b>Answer:</b> They pretty much get water whenever I water the garden. Overhead sprinklers.  <b>Question:</b> How have you been dealing with the fallen leaves? <b>Answer:</b> I generally rake them up and compost them.  <b>Question:</b> Any other similar problems in other fruit trees? <b>Answer:</b> Well, actually, my pear tree has a few discolored fruits, too.
<b>Reference(s)</b> PNW Disease Management Handbook; University of California IPM
<b>Diagnosis</b> <b>Apple scab:</b> Fungal disease. In spring, leaves are pale, chlorotic, with pinhead-sized spots. Leaves have irregular brown-colored infections. Leaves can curl, become distorted and drop early—weakening tree. On fruit, small brown/black round areas appear. Later, skin ruptures. Exposed tissue has black velvet-like appearance surrounded by whitish ring or torn cuticle tissue.
<b>Recommendations</b> <b>Cultural:</b> 1) Grow scab resistant cultivars. 2) Reduce disease pressure by raking and disposing of leaves after they fall. Better not to compost the leaves. 3) Prune your apple trees to open up branching and allow more air circulation. 4) When watering your apple trees, avoid getting foliage wet. 5) Apply dolomitic lime in the fall, after leaf drop, to increase pH and to help reduce fungal spores in the spring. <b>Chemical:</b> Apply fungicides early and thoroughly to protect new growth. Hi-Yield Captan Fungicide 50 WP and Lime sulfur products such as Polysul, Lily Miller Dormant Spray for Disease and Bonide Lime Sulfur Spray are registered for home use. Always follow label instructions. The first susceptible tissues exposed in opening cluster buds are the tips of the leaves and sepals. The most critical period for scab development is from the breaking of the cluster buds until leaves are fully expanded. Apply sprays at prepink, pink, calyx, and first cover. If the disease was a problem last year, begin applications at green-tip. Forecasting based on temperature and moisture also can be used to time fungicide sprays. Scab resistance to certain fungicides can occur.

#35



## Benton County Master Gardener Problem Diagnosis Scenario #36

### (Grape mites)

<b>Problem</b> Some of the leaves on my table grapes don't look normal.
<b>Description (July)</b> There are fuzzy spots on the underside of leaves and bumpy spots on the top.
<b>Questions and Answers</b>  <b>Question:</b> When did you first notice this problem? <b>Answer:</b> I noticed a small amount during the budding season; the problem seems to spread late in the growing season.  <b>Question:</b> If you tap one of the abnormal leaves while holding a sheet of white paper underneath it, what do you see? <b>Answer:</b> Tiny black specks collect on the paper.  <b>Question:</b> Do you notice any other damage to the vines or fruit? i.e. stunting? <b>Answer:</b> No, nothing significant.
<b>Reference(s)</b> OSU Extension Website; publication by OSU Extension berry crops professor, Bernadine C. Strik: Growing Table Grapes (EC 1639, May 2011) British of Columbia Dept. of Agriculture: <a href="http://www.agf.gov.bc.ca/cropprot/grapeipm/erineum.htm">http://www.agf.gov.bc.ca/cropprot/grapeipm/erineum.htm</a>
<b>Diagnosis</b> <b>Grape <i>erineum</i> mites:</b> Mites are feeding on the leaves. Adult mites are wormlike, light yellowish white, 0.2 mm long and 1/4 <sup>th</sup> as wide. They are much smaller than spider mites.
<b>Recommendations</b> There is no need to control this pest; it doesn't really harm the vine or affect the harvest.  <b>Cultural:</b> To avoid, be sure to examine any new nursery stock carefully before purchasing. Removing galled leaves can control light infestations to some extent. <b>Chemical:</b> Sulfur application used to control fungus also is a deterrent to <i>erineum</i> mites.

#36



Top of leaf



Bottom of leaf



## Benton County Master Gardener Problem Diagnosis Scenario #37

(Herb Robert)

<b>Problem</b> Obnoxious weed that keeps coming back.
<b>Description (Late March/April)</b> Weed that spreads like crazy. Smells when leaves are crushed.
<b>Questions and Answers</b>  <b>Question:</b> What do leaves look like? <b>Answer:</b> Fernlike—leaves are hairy and deeply lobed. Arranged in a rosette (circular pattern). Green leaves turn red as plant matures.  <b>Question:</b> What does the plant look like? <b>Answer:</b> Sprawling plant with hairy red stems that are forked and have swollen joints.  <b>Question:</b> What do flowers look like? <b>Answer:</b> Small (~ ½ inch) pink-violet color. Five-petals. Usually occur in pairs.  <b>Question:</b> What does fruit look like? <b>Answer:</b> Stork-like (geranium characteristic).  <b>Question:</b> Where does it grow? <b>Answer:</b> Seems to grow almost anywhere.
<b>Reference(s)</b> Weeds of the West, pages 851-852. ODA noxious weed control: <a href="http://www.oregon.gov/ODA/plant/weeds/Pages/profile_herbrobert.aspx">http://www.oregon.gov/ODA/plant/weeds/Pages/profile_herbrobert.aspx</a> WSU: <a href="http://pep.wsu.edu/Hortsense/scripts/query/displayWeed.asp?tableName=Weed&amp;categoryID=6&amp;problemID=2086">http://pep.wsu.edu/Hortsense/scripts/query/displayWeed.asp?tableName=Weed&amp;categoryID=6&amp;problemID=2086</a>
<b>Diagnosis</b> <b>Herb Robert, <i>geranium robertianum</i>, Stinky Bob:</b> Low growing winter/spring annual. As plant matures, the foliage turns red making it very noticeable. Leaves release a pungent odor making it easy to recognize. It reproduces only by seed, but seeds can be dispersed up to 20' when pods are disturbed.
<b>Recommendations</b> Pull it up and keep pulling it up, preferably before flowering. Very difficult to eliminate. Seeds are long-lived. Roots are shallow making them easy to pull up. Monitor site regularly for new seedlings. Use mulch to help with weed control.

#37



## Benton County Master Gardener Problem Diagnosis Scenario #38 (Hobo Spider)

**Problem:** I found a large spider in my house and I believe it is a 'Hobo Spider'. How can I get rid of it and others?

**Description:** Large brown spider found in garage. Owner thinks it is poisonous.

### Questions and Answers:

Question: Do you have the spider?

Answer: No

Question: How big was the spider and where did you find the spider?

Answer: The spider was over an inch in diameter. I found the spider in its web in my garage. Boy does it run fast.

Question: Can you describe the web and where in the garage you found it?

Answer: The web was down on the cement foundation where it meets the dry wall. The web kind of looks like those triangular corner shelf.

### Reference(s):

2011 PNW Insect Management Handbook Pg. 571-72

How to identify (or misidentify) the hobo spider -

### Diagnosis:

The description given by home owner matches the HOBBO SPIDER and several others. However the Hobo spider *Tegenaria agrestis* is rarely found now, having been almost completely displaced by its close relative the Gigantic House Spider *Tegenaria gigantean*. Both these spiders look very much alike and can only be properly identified by someone who is trained in spider ID. **Do not make an ID without the spider!**

**Recommendations:** It is rarely useful to apply pesticides or fumigate a house to control or eliminate spider infestations. Vacuuming up the spider is one way to rid your house of it. Sealing cracks around the house will help but will not prevent all entry by the spiders so you need to get rid of their food (other bugs).

#38



**left - giant house spider**  
**right - hobo spider**  
Photo by R. Vetter ©



**Hobo spider**  
Photo by P. K. Visscher ©

Note: No stripes around legs.



## Benton County Master Gardener Problem Diagnosis Scenario #39

### (Horsetail)

<b>Problem</b> Strange-looking plants are growing and spreading in my ditch.
<b>Description (May)</b> At first, pale, pointy plants come up and then they open into bright green bottlebrush type plants about 8-10 inches high. They have roots that spread and more plants grow.
<b>Questions and Answers</b>  <b>Question:</b> Are these only in your ditch? Not in lawn or flowerbeds? <b>Answer:</b> Yes, they are in my ditch now, but I am afraid they'll spread everywhere!  <b>Question:</b> Do your neighbors have the same weed? <b>Answer:</b> I have noticed them in one neighbor's ditch, but not the other. They seem to be moving up the street.  <b>Question:</b> Have you recently purchased and placed soil in this area? <b>Answer:</b> Yes, we bought some mulch in the spring and spread it in the ditch—to help prevent weeds.
<b>Reference(s)</b> PNW Weeds— <a href="http://pnwhandbooks.org/weed/other-items/control-problem-weeds/horsetail-field-equisetum-arvense">http://pnwhandbooks.org/weed/other-items/control-problem-weeds/horsetail-field-equisetum-arvense</a>
<b>Diagnosis</b> <b>Horsetail</b> ( <i>Equisetum arvense</i> ): A primitive spore-bearing plant. Native to Pacific Northwest. Spread by spores or creeping rhizomes and tubers. Rhizomes can grow to a depth of 6', making control difficult even with herbicides. Cultivation spreads the plant.
<b>Recommendations</b> <b>Cultural:</b> Complete hand removal every 2-3 weeks during the dry season will help starve these weeds. Cultivating the soil will spread this weed. When ordering mulch or soil, carefully examine it for horsetail and other weeds. Remove any found before using the soil.  <b>Physical:</b> Laminated plastic fabric placed over the horsetail will help discourage growth.  <b>Chemical:</b> Casoron (dichlobenil) is the only homeowner-authorized herbicide that helps. If desired, apply in mid-winter as a pre-emergent.

#39



Mature vegetative stalk



Young vegetative stalk



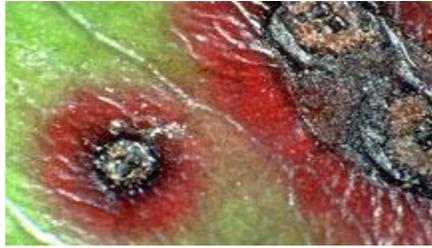
Spore bearing stalk appears before vegetative stalks

## Benton County Master Gardener Problem Diagnosis Scenario #40

### (Photinia Leaf Spot)

<b>Problem</b> My red tip photinia shrubs keep getting spots on the leaves.
<b>Description (May)</b> New growth gets red spots that turn black in the center. The spots grow together and eventually the center portions of the spots turn grey and create holes in the leaves. Leaves with heavy infection drop off.
<b>Questions and Answers</b> <b>Question:</b> Do all of your plants have this problem? <b>Answer:</b> No, the one in the front does not seem to have the problem. <b>Question:</b> How is the one by the front door treated differently? <b>Answer:</b> It is partially sheltered from the rain and it does not receive as much attention. <b>Question:</b> When did you first notice the spots? <b>Answer:</b> Two or three springs ago. The problem seems to go away or get better every year and then comes back every Spring it seems. Since the bushes have grown together it seems to get worse every year. <b>Question:</b> How do you water the bushes? <b>Answer:</b> With a fan type sprinkler. I use it to water the grass at the same time.
<b>Reference(s)</b> PNW Disease Handbook "Photinia-Leaf Spot" <a href="http://pubs.ext.vt.edu/450/450-609/450-609.html">http://pubs.ext.vt.edu/450/450-609/450-609.html</a> Virginia Tech <a href="http://www.clemson.edu/extension/hgic/plants/landscape/shrubs/hgic1081.html">http://www.clemson.edu/extension/hgic/plants/landscape/shrubs/hgic1081.html</a> Clemson University
<b>Diagnosis</b> <b>Photinia Leaf Spot Disease:</b> A fungus <i>Entomosporium</i> . Overwinters on diseased leaves & shoots. Disseminated by splashing water. Bright sun reduces spore survival during dry periods. Young leaves are most susceptible to fungus causing brown blotches on leaves. Photinia is member of rosaceae family. This family is susceptible to leaf spot diseases.
<b>Recommendations</b> <b>Cultural:</b> Do not plant species known to get this disease. Space plants far enough apart for good air circulation and don't plant in areas where air circulation is decreased. Do not overhead water or water by any method that wets leaves. Do not fertilize, water, or prune more than necessary. Anything that encourages new succulent growth helps the disease survive. Prune only in late winter before bud break. Rake up and destroy or discard fallen diseased leaves. Mulch 2-3 inches under shrubs. <b>Chemical:</b> A number of fungicides are marketed for home use. Spray in spring when shoots are young.

#40



**Benton County Master Gardener Problem Diagnosis Scenario #41**  
**(Potato Scab)**

<p><b>Problem</b> My potatoes have raised spots on some of the tubers.</p>
<p><b>Description (August)</b> There are brown, corky splotches on the potatoes.</p>
<p><b>Questions and Answers</b></p> <p><b>Question:</b> What variety of potato do you grow? <b>Answer:</b> I have a red potato called ‘Colorado Rose’ and a white called ‘Ivory Rose’.</p> <p><b>Question:</b> Did you have this problem last year? If not, what has changed. <b>Answer:</b> No, I didn’t. This year I planted different potatoes to experiment. Last year, I just planted the plain old Russets.</p> <p><b>Question:</b> How much do you water, and for how long? <b>Answer:</b> I water for an hour every week.</p> <p><b>Question:</b> What is the pH of your soil? <b>Answer:</b> I had it tested—it’s 7.0.</p> <p><b>Question:</b> Have you fertilized or mulched the potatoes? <b>Answer:</b> No</p>
<p><b>Reference(s)</b> <a href="http://pnwhandbooks.org/plantdisease/potato-solanum-tuberosum-scab-common">http://pnwhandbooks.org/plantdisease/potato-solanum-tuberosum-scab-common</a> Home Gardener’s Problem Solver, p.382.</p>
<p><b>Diagnosis</b> <b>Potato Scab</b> (<i>Solanum tuberosum</i>): Corky lesions appear on tuber’s surface. These may be small or be deep pits. The disease may be confused with powdery scab (treatment is different so must be carefully identified). Caused by bacteria, which lives in soil. Scab gets worse in soil with a pH of 6.0 or more. Dry soil also encourages the bacteria. (For powdery scab, dry soil discourages that condition.)</p>
<p><b>Recommendations</b></p> <p><b>Cultural:</b></p> <ol style="list-style-type: none"><li>1. Use disease resistant varieties. Russet cultivars have better resistance than smooth-skinned cultivars.</li><li>2. Water more often so soil doesn’t get dry.</li><li>3. Do not overwater... 1 inch per week.</li><li>4. Maintain well-drained soil.</li><li>5. Avoid using manure, wood ashes or lime, which make the soil more alkaline.</li></ol> <p><b>Chemical:</b> None listed.</p>

#41



## Benton County Master Gardener Problem Diagnosis Scenario #42

### (Powdery mildew)

#### **Problem**

Many of my flowers are covered in a white coating, mostly on the leaves but sometimes on the stems as well.

#### **Description (June/July)**

Gardener has mature, well cared for flowerbeds among large trees.

#### **Questions and Answers**

**Question:** Describe your garden.

**Answer:** It is a series of mature flowerbeds on level ground amongst large evergreen and deciduous trees.

**Question:** Lots of shade?

**Answer:** Yes.

**Question:** Where on the plant does this white coating appear?

**Answer:** On the upper surfaces of young leaves at first, but later, all over on some plants.

**Question:** Which species are most affected?

**Answer:** I suppose the phlox, delphiniums, snapdragons, zinnias, and, perhaps, the sweet peas.

#### **Reference(s)**

<http://pnwhandbooks.org/plantdisease/pathogen-articles/pathogens-common-many-plants/fungi/powdery-mildew-diseases>

<http://www.ext.colostate.edu/pubs/garden/02902.html>

#### **Diagnosis**

**Powdery mildew:** White powdery spots occur on leaves and stems. As disease advances, the spots get larger and denser and can spread to the entire plant. Prevalent in this area in summer on a wide range of species. Shade tends to favor its development, as will dense lush growth and a dry-ish plant environment.

#### **Recommendations**

**Cultural:** Use resistant varieties when possible

- Consider creating more direct sunlight by removing/pruning some shrubs/trees.
- Go easy on the fertilizers, overly lush growth adds to the problem.
- Consider re-shaping beds to create open spaces and encourage air flow
- Prune out heavily infected leaves and destroy debris.

**Chemical:** Consider using protectant sprays on the most susceptible species, in accordance with PNW recommendations.

#42

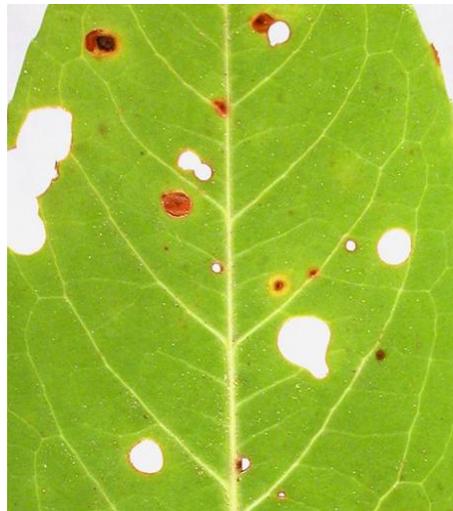


## Benton County Master Gardener Problem Diagnosis Scenario #43

### (Shothole)

<b>Problem</b> My beautiful laurel shrubs have leaves that are full of little holes.
<b>Description (June)</b> Plant leaves have multiple holes and also brown spots.
<b>Questions/Answers</b>  <b>Question:</b> Describe the foliage problem you are observing. <b>Answer:</b> Well, the leaves look like they have been shot with shotgun pellets.  <b>Question:</b> Have you observed anything else going on with the plant?" <b>Answer:</b> Yes, a lot of the leaves have fallen off.  <b>Question:</b> What kind of irrigation methods are you using in the area? <b>Answer:</b> They are irrigated by the lawn sprinkler system.  <b>Question:</b> Are there any trees nearby? <b>Answer:</b> Yes, we have a plum tree in the lawn that flowers beautifully.
<b>References</b> OSU Extension website: <a href="http://pnwhandbooks.org/plantdisease/prunus-laurocerasus-leaf-spots-and-shothole">http://pnwhandbooks.org/plantdisease/prunus-laurocerasus-leaf-spots-and-shothole</a> <a href="http://pnwhandbooks.org/plantdisease/pathogen-articles/pathogens-common-many-plants/bacteria-and-other-prokaryotes/diseases-caused-pseudo">http://pnwhandbooks.org/plantdisease/pathogen-articles/pathogens-common-many-plants/bacteria-and-other-prokaryotes/diseases-caused-pseudo</a>
<b>Diagnosis</b> <b>Shothole leaf spot</b> ( <i>Pseudomonas syringae</i> ): A bacterium causes spots, which are brown surrounded by a reddish boarder with a yellow halo. The injured tissue drops away leaving a hole in the leaf. Fungi, copper spray injury, and boron toxicity can cause similar symptoms. Disease is difficult to diagnose after tissue drops away.
<b>Recommendation</b> <b>Cultural:</b> No management practices have been shown to help reduce physiological shothole. For disease-induced shothole, try the following cultural practices. <ol style="list-style-type: none"><li>1. Avoid overhead irrigation.</li><li>2. Remove and destroy fallen leaves.</li><li>3. Do not plant near other flowering or fruiting <i>Prunus</i> species.</li></ol> <b>Chemical:</b> Use only if a bacterial or fungal cause has been identified. No products are approved for home use. A licensed spray company would have to be used.

#43



## Benton County Master Gardener Problem Diagnosis Scenario #44

### (Rose Mosaic Virus)

<b>Problem</b> My rose has weird, sickly leaves.
<b>Description (May/June)</b> The leaves have patterned yellow lines and are somewhat distorted.
<b>Questions and Answers</b>  <b>Question:</b> Is this rose new to your garden? <b>Answer:</b> Yes, I acquired it about two years ago.  <b>Question:</b> When did the symptoms appear? <b>Answer:</b> As soon as the leaves opened in the spring.  <b>Question:</b> Are any other parts of the plant affected? <b>Answer:</b> The flowers seem smaller and the plant doesn't look as healthy as my other roses.  <b>Question:</b> Are any other roses affected? <b>Answer:</b> No, not yet.  <b>Question:</b> Have you tried anything to treat the rose? <b>Answer:</b> Just the same rose fertilizer I use on all the roses.
<b>Reference(s)</b> <a href="http://pnwhandbooks.org/plantdisease/rose-rosa-sp-and-hybrids-rose-mosaic">http://pnwhandbooks.org/plantdisease/rose-rosa-sp-and-hybrids-rose-mosaic</a>
<b>Diagnosis</b> <b>Rose Mosaic Virus:</b> Chlorotic line patterns (zigzag), ringspots and mottles in leaves occur during the growing season.
<b>Recommendations</b> Since there are no "cures" for viral infections, it is essential to purchase clean and virus-tested roses. The virus is spread through propagation methods and doesn't spread naturally. Removal and destruction of the diseased plant is recommended if the plant is not performing up to the desired levels.

#44



**Benton County Master Gardener Problem Diagnosis Scenario #45**  
**(Spotted Wing Drosophila)**

**Problem**

I am seeing a lot of my cherries with sunken areas on them. The sunken area gets larger and larger. I noticed a similar problem with my grapes, berries, and peaches last year.

**Description (June/July)**

Ripening fruit has rotten spots under what appears to be healthy outer skin.

**Questions and Answers**

**Question:** Is the skin of the fruit damaged above the sunken area?

**Answer:** I only see two small holes above the damage.

**Question:** Do you see any insects on the fruit?

**Answer:** Not on the fruit. Just some very little flies, too little to do the damage I see on the fruit.

**Question:** Did you cut into the fruit to see what the damage looked like, or what might be causing it?

**Answer:** No, I didn't. But, I have seen something that looks like small white threads under the skin, and something sticking up from the two small holes.

**Reference(s)**

OSU Publication – “A New Pest Attacking Healthy Ripening Fruit in Oregon” Spotted wing Drosophila: *Drosophila suzukii* (Matsumura) - EM8991 • October 2009, by Amy J. Dreves, PhD.;

[http://www.oregon.gov/ODA/PLANT/docs/pdf/ippm\\_dsuzukii\\_alert\\_aug2010.pdf](http://www.oregon.gov/ODA/PLANT/docs/pdf/ippm_dsuzukii_alert_aug2010.pdf)

**Diagnosis**

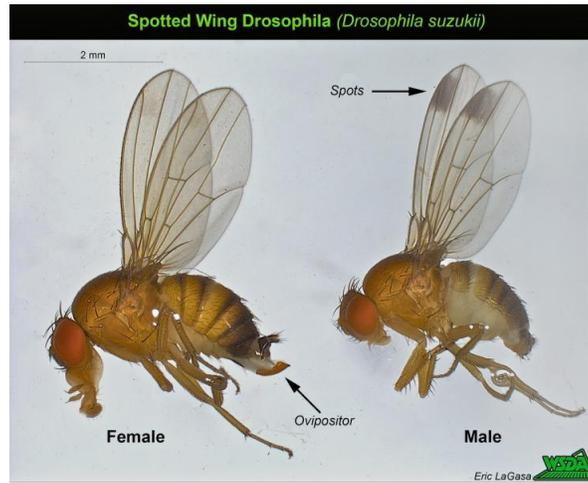
**Spotted Wing Drosophila (SWD).** *Request that several samples of damaged fruit and flies be brought in to the Extension Office.* The female finds ripe fruit and deposits her eggs. The larvae hatch and feed on the fruit. The fruit softens and depresses causing a visible blemish. Pupa may leave the fruit or larvae may pupate inside the fruit. This pest poses a significant threat to soft fruit growers.

**Recommendations**

Unfortunately, there are no established management plans for this new invasive pest in Oregon. Control recommendations to best suppress fly populations are still under development. However, two principles will be at the heart of controlling this pest regardless of crop: controlling the flies before they lay eggs, and reducing breeding sites by immediately removing and disposing of infested or leftover fruit on the plant.

The use of a trap will help control the adult SWD by removing them from the breeding population of SWDs. Traps can be ordered from pest management supply companies. Liquid Rescue Fly traps can also be ordered from various suppliers.

#45



## Benton County Master Gardener Problem Diagnosis Scenario #46

### (Mealybugs)

<b>Problem</b> I have a bunch of little white bugs on my houseplants. They are spreading white stuff.
<b>Description (March)</b> There are cottony clusters on stems and leaves. Leaves yellow, shrivel and the plant is generally puny.
<b>Questions/Answers:</b>  <b>Question:</b> Where are the cottony things located? <b>Answer:</b> On the underside of the leaves and at the junctures where leaves attach to stems.  <b>Question:</b> How long have you had this problem? <b>Answer:</b> I first noticed it a couple weeks ago. But it seems to be getting worse recently.  <b>Question:</b> Is the plant a new addition to the household? <b>Answer:</b> Yes it is. I've had it almost a month.
<b>Reference(s)</b> <a href="http://www.extension.umn.edu/distribution/horticulture/m1183.html">http://www.extension.umn.edu/distribution/horticulture/m1183.html</a> <a href="http://www.ext.colostate.edu/pubs/insect/05595.html">http://www.ext.colostate.edu/pubs/insect/05595.html</a>
<b>Diagnosis</b> <b>Mealybugs:</b> Soft-bodied, sap-sucking insects, about 3/16 inch long. They suck fluids from plant. Leaves then turn yellow and drop. New growth may become distorted. Females produce visible cottony material in order to lay hundreds of eggs. The newly emerged insects, known as crawlers, move about the plant. Mealybugs are most common along veins on the undersides of leaves and at axils, where leaves join stems.
<b>Recommendations</b> Check houseplants before you buy them, and then isolate them for two or three weeks to allow undetected problems to become obvious. Always use sterilized potting soil.  <b>Cultural:</b> Pick off adults and cottony egg sacs. Spray wash plant thoroughly.  <b>Biological:</b> Mealybug destroyers, a species of ladybug, are effective, but it requires a large mealybug population.  <b>Chemical:</b> Swab adults and egg sacs with alcohol. Spray with dilute alcohol or insecticidal soaps. Check PNW for approved commercial chemicals.

#46



## Benton County Master Gardener Problem Diagnosis Scenario #47 (Moss on Roof)

**Problem:** I have a whole bunch of moss on my roof. How can I fix it?

**Description:** Moss growing on asphalt-shingled roof.

**Questions and Answers:**

Question: How thick is the moss?

Answer: About half an inch.

Question: Is it damaging the roof?

Answer: Yes, the shingles are being raised.

Question: What is the roof's exposure to sunlight?

Answer: It is a north-facing roof, and there are large trees blocking the sun.

**Reference(s):**

[bryophytes.science.oregonstate.edu/page18.htm](http://bryophytes.science.oregonstate.edu/page18.htm)

<http://ucce.ucdavis.edu/files/datastore/268-477.pdf>

<http://county.wsu.edu/king/gardening/mg/factsheets/Fact%20Sheets/Moss%20on%20Roofs.pdf>

<http://www.extension.umn.edu/distribution/naturalresources/00055.htm>

**Diagnosis:** Moss on roofs is primarily an esthetic issue, but heavy moss can damage roofing materials. Mosses are well suited to growing on the north-facing parts of roofs, especially those areas shaded by trees. The moss may also hold moisture on the roof, allowing decay-causing organisms to get a foothold. Moss could grow under the edges of shingles, loosening them and causing leaks in that way.

**Recommendations:**

Physical controls:

- Increase light exposure on the roof. Trim overhanging branches.
- Remove moss with a stiff push broom, wire brush, or flat-edged shovel. Pressure washing is effective but may damage the roof.

Chemical controls:

- Zinc strips are usually considered the long-term solution to controlling moss. They effectively kill or retard the growth of mosses and fungi and appear to have effect 10 to 15 feet below the zinc flashing along the length of the flashing. Bare copper wire has a similar effect.
- Use bleach especially formulated for mosses, which can be found in the moss control area in garden centers. Bleach applications remain effective for up to one year, but annual applications are usually necessary. Care needs to be taken not to damage plants below.
- Commercial chemical moss removers are toxic and care must be taken to avoid physical injury and damage to plants and ground water. Follow directions carefully. The dead moss will need to be removed mechanically.

#47



## Benton County Master Gardener Problem Diagnosis Scenario #48 (Boxelder Bugs)

**Problem:** The side of our home is covered in bugs. How do I get rid of them?

**Description:** Thousands of brown bugs spread across the outside walls of a home.

### **Questions and Answers:**

Question: What do the bugs look like exactly?

Answer: They are about one-half inch long, with black bodies and black wings with red markings. They look kind of like beetles, but softer. They can even fly!

Question: Where are they located?

Answer: They are mostly on the southern side of the house wall, facing the sun.

Question: Are they on plants outside?

Answer: Yes, some are on the shrubs and other plants.

Question: Are you finding them inside the house as well?

Answer: Yes, a few on the inside of the same wall. I don't know how they are getting in.

Question: Have you noticed any damage from them?

Answer: Not really, but it looks there are some droppings spotting our blinds. The plants seem to be okay.

Question: Do you have any maple or boxelder trees on your property?

Answer: We have maples but no boxelders that I know of.

**Reference(s):** <http://oregonstate.edu/dept/kbrec/boxelder-bug>

**Diagnosis:** Infestation of boxelder bugs (*Leptocoris trivittatus*). They are primarily a nuisance pest. They usually winter near a boxelder tree, where in summer they feed on the pods. Throughout the fall, winter and early spring, bugs may continue to enter the home as they move about on warmer days. Nuisance infestations should be finished by late May, as the boxelder bugs have either died or moved back to the host trees.

### **Recommendations:**

**Cultural controls:** Removing female boxelder trees and sometimes maples in the neighborhood is the most permanent solution to the problem, although this may not be practical or desirable. Use a vacuum cleaner to control bugs that have entered the house. Screening or sealing cracks or other entrances into the dwelling is important. Once boxelder bugs have entered the home, control becomes more difficult.

**Biological controls:** None

**Chemical controls:** Laundry detergent mixed with water is cheap, safe and effective when applied directly to boxelder bugs. Drawbacks of detergent sprays are that they will kill only if they contact the insect directly, and they may damage vegetation. Household insecticidal aerosols and some cleaners are also effective when applied directly to individual insects.

#48



## Benton County Master Gardener Problem Diagnosis Scenario #49 (Anthracnose on Maple Trees)

**Problem:** My maple tree is sick.

**Description:** There are dead brown spots near the veins and bigger brown/black dead spots that are irregular and soft.

**Questions and Answers:**

Question: Are the affected leaves all over the tree or only in specific areas?

Answer: They are mostly all over but worse in some areas, especially near the bottom.

Question: Is this new this year or has it happened before?

Answer: There was some last year, but it is worse this year.

Question: What type of maple tree is it?

Answer: Red maple (*acer rubrum* 'Morgan')

Question: How old is the tree?

Answer: We planted it three years ago.

**Reference(s):** <http://pnwhandbooks.org/plantdisease/maple-acer-sp-anthracnose>  
<http://www.aces.edu/pubs/docs/A/ANR-1049/#>  
<http://hyg.ipm.illinois.edu/article.php?id=43>  
<http://ohioline.osu.edu/hyg-fact/3000/3048.html>

**Diagnosis:** Anthracnose (*Kabatiella* species) diseases are generally not severe on maple, but can cause considerable unsightliness from brownish leaf blotches and some leaf drop when cool, wet spring conditions make the disease particularly severe. Can be confused with late frost damage, which damages the leaf edges rather than near the veins.

**Recommendations:**

**Cultural control:** Gather all fallen leaves and destroy them to minimize overwintering the fungal spores.

Prune out affected parts at least 6 inches below the infection.

After pruning, clean pruning tools with alcohol or 10% bleach solution to prevent re-infection or infecting other trees.

**Biological control:** None

**Chemical control:** Consult PNW Handbook.

#49



## Benton County Master Gardener Problem Diagnosis Scenario #50 (Cutworm)

**Problem:** “My corn plants and other vegetables are being eaten by something. Help!”

**Description:** Young shoots have been cut down, and older foliage appears to be dying.

### Questions/Answers:

Question: Describe the foliage problem you are observing.

Answer: In the mornings small plants are lying on the ground, cut off at the stem.

Question: Describe the other symptoms you are observing.

Answer: The shoots are coming up from the ground with chewed spots on them.

Question: When did you first notice the problem?

Answer: It started this spring, and now I'm afraid I could lose all my precious corn.

Question: Have you seen any insects or worms in the garden during the day?

Answer: No, I've seen nothing. I thought I had slugs, but there are no slime trails anywhere.

### References:

Pesticide.org and OSU Extension links: <http://www.pesticide.org/solutions/home-and-garden-toolbox/pest-solutions/cutworms>

<http://extension.entm.purdue.edu/fieldcropsipm/insects/black-cutworms.php>

**Diagnosis:** Cutworms –The larvae or caterpillars of some moths are called cutworms (*Agrotis*, *Amathes*, *Peridroma*, *Prodenia* spp.) because of the manner in which they cut down young plants as they feed. The adults are night-flying moths which feed on nectar, if at all, and do no damage.

### Recommended Action:

**Cultural control:** Cultivate the soil frequently to injure and expose them. Handpicking can be effective at night with a flashlight when cutworms are active.

**Biological control:** Planting a border of sunflower plants will attract the cutworms and make gathering and removal easier.

**Chemical control:** Chemical treatments are available to the home gardener (See PNW Insect Management Handbook).



#50

