Blackspot of Roses

A common disease of roses is blackspot, a fungus disease that can cause defoliation of susceptible plants. Look for dark, circular lesions with feathery edges on the top surface of the leaves and raised purple spots on young canes. Infected leaves will often yellow between spots and eventually drop. The infection usually starts on the lower leaves and works its way up the plant.

Blackspot is most severe under conditions of high relative humidity (> 85%), warm temperatures (75 to 85 degrees F) and six or more hours of leaf wetness. Newly expanding leaves are most vulnerable to infection. The fungus can survive on fallen leaves or canes and is disseminated primarily by splashing water.

Cultural practices are the first line of defense.

1. Don’t plant susceptible roses unless you are willing to use fungicide sprays. For a list of blackspot resistant varieties, go to: http://www.ppdl.purdue.edu/ppdl/weeklypics/3-22-04.html

2. Keep irrigation water off the foliage. Drip irrigation works well with roses.

3. Plant roses in sun in areas with good air movement to limit the amount of time the foliage is wet.

4. Remove diseased leaves that have fallen and prune out infected rose canes to minimize inoculum.

If needed, protect foliage with a regular spray program (10- to 14-day schedule) of effective fungicides. Recommended fungicides include tebuconazole (Bayer Disease Control for Roses, Flowers and Shrubs), myclobutanil (Immunox), triforine (Funginex), thiophanate methyl.
(Fertilome Halt) and chlorothalonil (Broad Spectrum Fungicide, Garden Disease Control, others). (WU)

**FRUIT**

**Strawberry Bed Renewal**

Next year's strawberry crop will be affected by what you do to this year's strawberry bed. The sooner after harvest the patch is cleaned up, fertilized and irrigated, if possible, the better the chance of getting a good crop next year. One of the main goals in renovation is to provide a high level of sunlight to plant leaves so they can manufacture the food the plant needs. If leaves have disease spots, remove all the leaves in the bed. Removing, these diseased leaves and weeds will cause new, non-diseased leaves to develop and remove competition from weedy plants. Hedge shears or even a mower can be used. Be sure the mower blade is high enough to avoid the strawberry crowns.

It is also important to reduce the number of strawberry plants so they do not compete for light, moisture and nutrients. If you have a small bed, you can hoe out or pull some plants so they are spaced about 4 to 6 inches apart. On large beds, adjust a rototiller so you can till between the rows, and cut each row back to about 10 inches wide.

The next step is to fertilize the plants with about 3/4 to 1 pound of a complete fertilizer such as 13-13-13 (nitrogen, phosphorus and potassium) or an equivalent on each 25 feet of row. If a soil test shows adequate levels of phosphorus and potassium, use 3/4 pound of a 16-0-0 (nitrate of soda) fertilizer per 25 feet of row instead.

The next step is to irrigate to wash the fertilizer into the soil and provide moisture for the rapid growth of the strawberry plants. When the soil is dry, apply about 1 inch of water. A garden sprinkler can do a good job applying the water.

Controlling weeds and watering throughout the summer are important so plants are vigorous when fruit buds begin to develop in September and October. (WU)

**VEGETABLES**

**Physiological Leaf Curl in Tomatoes**

Every year we receive calls from gardeners about tomato plants with curling leaves. When tomato plants grow vigorously in mild, spring weather the top growth often exceeds the root development. When the first few days of warm, dry summer weather hit, the plant detects it has a problem and
needs to increase root development. The plant tries to reduce its leaf area by rolling leaves. The leaves curl along the length of the leaf (leaflet) in an upward fashion. It is often accompanied by a thickening of the leaf giving it a leathery texture. Interestingly, leaf roll is worse on some varieties than others.

Though rolling usually occurs during the spring to summer shift period, it may also occur after a heavy cultivating or hoeing, a hard rain, or any sudden change in weather. This year, it seems heavy rains have contributed to the situation in certain areas of the state. Too much rain can saturate the soil and suffocate the roots. The damaged root system is less able to transport water, especially when warm temperatures and winds increase water use. Leaf roll is a temporary condition that goes away after a week or so when the plant acclimates, recovers from injury, or soil dries out. (WU)

**PESTS**

**Ladybird Beetles**

If you see what looks like very small alligator-shaped insects on your plants, don't be concerned. This is the larval form of the ladybird beetle. The larvae are covered with spines, about 3/8 inch long, and black with orange markings. Neither the adults nor larvae will feed on the plants but rather on other insects including aphids, mealybugs, whiteflies, scale insects and the eggs of various other insects. Because those other insects normally are feeding on the plant, ladybird beetles are considered beneficial. (WU)

**What’s in The Old Bucket? ---- Rosy Maple Moths**

Rosy maple moths are related to large, spectacular silkworm moths — cercropia, polyphemus and luna moths. But compared to large silk moths with wingspreads exceeding 5-inches, rosy maple moths are small, 2 inches maximum.

Rosy maple moths are named for their rose-colored markings and the larvae’s preferred host. In Kansas, the “alba” or white forms predominate, with the smaller males showing more of the rose color. Females deposit yellow egg clusters on the undersides of maple leaves. Ten to 14 days later, small larvae emerge. As is typical with many lepidopteran caterpillars, small larvae are gregarious, feeding shoulder-to-shoulder. In later developmental stages, they become solitary as they move about devouring greater and greater quantities of leaf tissue. When full grown, caterpillars (known as greenstriped mapleworms) are light green with black lateral lines, red
heads, and two filaments behind the head. Fully mature larvae are 2 inches long.

When ready, caterpillars climb to the bottom of the tree and pupate in small shallow underground chambers. Fresh/new pupae are yellowish-green and spiny. The pupa ends in a small forked point.

Moths emerge in a week to 10 days to begin laying eggs for the second generation. Second-generation pupae, such as those that recently appeared, will overwinter to produce next year’s moths.

Most every year, toward the end of June we receive a report or two of “worms killing my silver maple tree.” Although feeding strips trees of their leaves, it does not kill them. When defoliations occur during the growing season, trees put out a new flush of foliage restoring their appearance. For example, on June 28 of a previous year, a small silver maple was defoliated. Three weeks later, the tree had new foliage.

Recall that rosy maple moths produce two generations of greenstriped mapleworms each year. In this case, several trees withstood five defoliations — two the first year (1994), two in 1995, and one from the first generation of 1996. Since then the moths have not reappeared at this location, and the trees are tall and strong. There is no explanation for this. This seems to be the nature of most insect pests. (BB)

**Time To Weigh-In On Oystershell Scale**

We have received samples of large populations of the oystershell scale (Lepidoasaphes ulmi) on burning bush (Euonymus alatus) branches. It is important to be aware of oystershell scale infestations and take appropriate measures to avoid outbreaks, mainly because eggs hatch into young crawlers that are susceptible to applications of most commercially available insecticides or other pest control materials. But as the scales mature later in the season, they are more difficult to regulate or suppress because they form an impenetrable protective covering that is “resistant” to insecticides. Oystershell scale feeds on a wide-range of trees and shrubs including ash, birch, dogwood, elm, hemlock, lilac, maple, poplar, privet, walnut and willow. There are two races of oystershell scale—brown and gray. The two races differ in the plant types attacked.

Oystershell scale adults are 2 to 3 millimeters (mm) in length, gray or brown in color, and shaped like oyster shells. They overwinter as eggs located beneath the female covering. Eggs hatch into young, creamy white to brown colored crawlers that are active from May through June. The crawlers locate a place to settle and then use their piercing-sucking mouthparts to withdraw plant fluids. This leads to leaf yellowing, plant stunting, and possibly plant death. Branches or twigs encrusted with oystershell scales will eventually die. In certain instances, extensive infestations of oystershell scale may not directly kill trees or shrubs but may stress plants, potentially increasing susceptibility to wood-boring insects.
Proper implementation of cultural practices including irrigation, fertility, and mulching will reduce stress and allow plants to tolerate low to moderate infestations. But when populations are excessive, the use of insecticides (or pest control materials) may be warranted to prevent/avoid permanent plant damage. Insecticides that may be used to regulate or suppress oystershell scale populations include acephate (Orthene), bifenthrin (Talstar), carbaryl (Sevin), clarified hydrophobic extract of neem oil (Neem Oil), cyfluthrin (Tempo Bayer Multi-Insect Control), malathion, paraffinic and petroleum-based oils (horticultural/summer oils), and potassium salts of fatty acids (insecticidal soap). All of these insecticides should be applied when the crawlers are most active, which increases their overall. It is important to visually inspect branches for scale crawlers or use double-sided sticky tape wrapped around selected branches or twigs previously infested with scales. When crawlers emerge from underneath the dead female covering and move around, they will get stuck on the tape. So examining the tape routinely (twice per week) will help to determine when the scales are in the stage most susceptible to insecticide spray applications. Repeat applications may be required 8 to 10 days later since eggs don’t all hatch simultaneously.

The brown-race crawlers of oystershell scale on plants such as dogwood and lilac typically hatch from eggs and may be sprayed with insecticides when Vanhoutte spirea (Spiraea x vanhouttei) is in full to late bloom. The gray-race crawlers found on plants including ash, lilac, and maple tend to hatch from eggs later and are sprayed with an insecticide when Vanhoutte spirea has completed blooming.

Oystershell scale is susceptible to a diversity of natural enemies (e.g., parasitoids and predators) that may regulate populations of oystershell scale if there is an abundance of natural enemies. But natural enemies generally appear too late during the season to prevent injury. Furthermore, natural enemies are usually only present when oystershell scale populations are high. (RC)

**Carpenter Bees**

We have been getting a lot of calls about big bees swarming around outside of homes. These are carpenter bees, which resemble bumble bees but have bare abdomens that are a shiny black to iridescent green. In the spring these bees, which overwinter as adults, are emerging and looking for other bees to mate with. The male bees can be rather aggressive and may “dive bomb” people in their vicinity. But they are harmless because they cannot sting. The females are capable of stinging but generally will not do so unless handled or molested. Males and females can be easily distinguished by looking at the front of their faces. Males will have a bald face, or a patch of gold, while females will have completely dark faces.

After mating in the spring, female carpenter bees tunnel into wood to lay their eggs, producing round holes about ½ inch wide. These eggs will develop throughout the summer and the young adults will spend the winter in these tunnels. The next spring the cycle begins again. The next generation of carpenter bees may use tunnels that are already there, they may enlarge or extend
the current tunnels, or excavate new ones.

Carpenter bees prefer to attack wood that is bare, weathered, and unpainted. They prefer softwoods such as redwood, cedar, cypress and pine. Common nesting sites are eaves, window trim, siding, decks, and outdoor furniture. The best way to avoid an infestation is to keep all exposed wood surfaces painted. Stains and varnishes will repel the bees to some degree but are not as effective as paint. Once an infestation has been detected, the tunnel entrances can be treated with an insecticide that has residual activity. Treating at night is most effective while the bees are inactive in the tunnels. The holes should be left open for a few days to allow the bees to come in contact with the insecticide and distribute it throughout the tunnels. Then, the holes can be plugged to prevent further use by carpenter bees and reduce the chances of wood decay. (JW and HD)

**Peach Tree Borers and Squash Vine Borers**

![Peach Tree Borer Moth](image1) ![Squash Vine Borer](image2)

Perfumes are mixtures of fragrant essential oils and aromatic compounds, fixatives and solvents used to give the human body, animals, objects and living spaces a pleasant scent. Perfumes are something we can detect.

The insect world has its own perfumes, known as pheromones. While people cannot detect pheromones produced by insects, insects react to very species-specific pheromones. And “sex pheromones” (produced by females) whose molecular structures have been deciphered and can be synthetically manufactured, provide useful tools for detecting the onset of certain insect pests based on presence of trapped males. So far as reported in the 2010 Kansas insect newsletters, pheromones have been used to detect and report on black cutworm, Nantucket pine tip moth and ash/lilac borer activities. Add to that peach tree borers and squash vine borers.

While ash/lilac borer activities are on the wane, peach tree borers (attracted to the same pheromone) have begun their yearly activities. The first male peach tree borer was trapped on June 2, with and additional six on June 3.

Although named for its preferred host, peaches, peach tree borers also are destructive pests of cherry, plum and apricot trees. Moths deposit eggs at the base of trees. Larvae feed at the soil level to 6 inches beneath the soil. They destroy cambial tissue and the inner bark and may girdle and kill young trees. While older trees are less prone to girdling, they can be severely injured resulting in reduced vitality. Weakened trees may be more prone to other insects, diseases and environmental factors, which eventually kill them. Preventative insecticide treatments should be
concentrated on the lower portions of tree trunks.

One individual reported collecting his first squash vine borer moth in a pheromone trap on June 1, and another on June 3. Squash vine borer moths are “hairy” and colorful. Moths tend to deposit eggs at the base of the major stem of plants (the larger the stem, the more room for the squash vine borer). Squash vine borers usually are detected when plants become wilted. A yellowish substance may appear at the base of plants. Cutting into the stem will expose the larvae. At this stage, plant damage is done. It would have been better to apply insecticide treatments to the stems of young plants to kill larvae before they bored into the plants. This shows the value of pheromone traps as a way to detect squash vine borer moths and initiate preventative spray treatments. (BB)

Peach Tree Borer Photo: Clemson University - USDA Cooperative Extension Slide Series, Bugwood.org

Lace Bugs

For many years, I have operated a blacklight trap daily at a specific woodland site. I have visited this particular oak tree thousands of times to collect insects in the light trap’s collection bucket. This time of the year that tree has lush green foliage.

Over the years, the leaves have turned bronze because of unchecked populations of oak lace bugs. Typically, people become aware of lace bugs when trees become discolored. Overwintered adult lace bugs begin current season activities in spring.

This year I examined lower surfaces of leaves within reach daily as I collected that particular blacklight trap. As of May 31, there was no evidence of lace bug activity. But on June 1, I saw the first 2010 lace bug eggs — some scattered and some in the typical egg cluster.

Being alerted to the onset of the particular pest, allows implementation of a management strategy — in this case, the initiation of insecticide sprays to minimize lace bug populations. The feasibility of spraying is debatable considering most homeowners do not have the capability of treating large trees. They would need to hire professionals with proper equipment to ensure through coverage of foliage. Homeowners would not only incur an initial cost for services, but additional treatments would likely be required since activity is just beginning. Because lace bug damage is an aesthetic condition, homeowners should weigh costs of doing something to retain green foliage against accepting discolored trees. (BB)

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