

Plant Wise

IOWA STATE UNIVERSITY
University Extension

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Galls on Oak Leaves and Twigs

By Jorden Kolpin
Plant and Insect Diagnostic Clinic
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Horned oak gall, the 'horns' contain the wasp larvae that trigger the gall formation.



The Plant and Insect Diagnostic Clinic has been receiving many inquiries about strange bumps and growths on oak tree twigs and leaves. These growths are known as galls, and alarming as they may seem, they do not injure the plant.

Galls are abnormal growths or swellings of plant tissue often caused by the attack of an insect. Galls on oaks are most often caused by small wasps or midges. Insects that cause galls to form are known as gallmakers. Galls grow to surround the tiny insects that form them and provide them with protection from weather, predators and parasites. The gall also provides a source of food for the insect. The insect develops and grows inside the gall during the summer and emerges as an adult either in the summer or the following spring.

Most insect galls do not seriously affect the health of well-established trees. Occasionally, a heavy gall infestation causes severe leaf or stem deformities and early leaf drop. Galls located on the twigs and branches

of a tree can detract from the overall appearance of the tree, but again, rarely lead to the death of the tree. There is no way to "cure" the tree of galls once they are there. Leaf galls may not appear again the following season, but twig and stem galls will more than likely remain on the tree.

Commonly seen galls on oak include the following:

- Oak apple galls are attached to the oak leaf as round light-green balls up to 2 inches in diameter and house a single wasp larva. They often have a mottled maroon pattern on the surface.
- Oak bullet galls are common twig galls on our native bur oaks. Bullet galls are hard, round, and pea-to-knuckle-sized, and usually are most apparent by August.
- Jumping oak galls grow on leaves and look a bit like small, round seeds or BBs. The galls fall off the oak, carrying the larva with them. The larvae in the fallen galls are active, and as they jerk around, the small galls can seem to jump on the ground (similar to "Mexican jumping beans.")
- Oak pill galls are irregular, hardened swellings up to one-quarter inch in diameter on the upper surface of the leaf.
- Woolly oak leaf gall look like a dense wad of wool attached to the leaf midvein. They may be as large as three-fourths of an inch and are often bright pink or yellow in color, fading to brown in the fall.
- Horned oak galls are a stem gall that can be numerous on trees. There are no effective treatments.



Oak tree heavily infested with horned oak galls.

Summer Swelter Stresses Iowa Lawns

By Dave Minner
Department of Horticulture
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Mild growing conditions in the spring and early summer produced beautiful lawns across Iowa, but excessive heat and rainfall have produced some weary and weedy lawns that will need assistance to recover this fall. Statewide precipitation rates well above normal provided ample water for lawn growth, but while your sprinklers may have been growing cobwebs, lawns in Iowa were being set up for decline from diseases, weeds, insects, and summer stress.

Disease

In June there was a rather unusual outbreak of *Ascochyta* caused by, of all things, dry conditions and heat. Lawns damaged by *Ascochyta* recovered in varying degrees but it is important to remember that summer stress accumulates and lawns are generally weakest by late August. Dollar spot and red thread were active through June, but the more deadly brown patch and *Pythium* have reared their ugly heads in late July and August to finish off some of the weaker lawns.

Weeds

This was a terrible year for crabgrass and yellow nutsedge. Pre-emergence herbicides generally give 85 to 100% control of crabgrass, but this year's excessive rain and high temperature reduced efficacy of crabgrass control products. High moisture and high temperature are two factors that increase the activity of soil microorganisms that ultimately

ingest the herbicide and render it inactive for season long weed control.

Lawns inundated with crabgrass by August 2010 will benefit from pre-emergence crabgrass control in spring 2011 to reduce the infestation of crabgrass that is eminent; seed from this year's heavy infestation will germinate next summer and the cycle of crabgrass will continue.

Should you try to kill the heavy infestation of crabgrass now? When crabgrass covers less than 25% of the turf area, do nothing. Crabgrass will die after the first frost and the Kentucky bluegrass will usually fill in the areas through the dead crabgrass. However, if the Kentucky bluegrass is being smothered beneath a layer of crabgrass that covers 50 to 100% of the visible lawn surface additional action is needed. The thick, uncontrolled mat of crabgrass will dominate the turf until the first killing frost that usually occurs in October; then it will be too late to establish Kentucky bluegrass from seed. Contact your lawn care company for assistance to suppress or kill the existing crabgrass to aid re-establishment. Power rake and reseed in early September.

Insects

White grubs and bluegrass billbugs are our two major lawn insects. There were some bluegrass billbugs this year but damage was very limited compared to past years with drier conditions. Annual white grubs of the masked chafer and Japanese beetle are showing up in ample supply and right on schedule for mid-August. If grubs are actively feeding in August and early September then curative treatments with fast acting insecticides such as trichlorfon are required (thoroughly watered in for effective control). Grub damage may be concealed by ample rainfall in late summer, only to appear during a dry spell. Curative insecticides are only effective between now and early October.

Summer Stress

High temperature and excessive moisture are a deadly combination that cause stress for cool-season grasses grown in Iowa lawns (Kentucky bluegrass, tall fescue, perennial ryegrass, fine fescue). High temperatures favor warm-season grasses such as crabgrass while cool-season grasses suffer. This partially explains why crabgrass can overtake Kentucky bluegrass as the summer progresses.

Excessive moisture also contributes to lawn decline in the summer. Roots need air to survive. Oxygen is displaced in soggy or flooded soils and the anaerobic conditions cause the roots to not function properly. Imagine lying down in the sun of your front yard in the hottest part of the day on a sunny, soggy and humid bed of grass. You wouldn't last but a few minutes. Grass plants in the sun can't get up and move to the shade. They're stuck, and when the evaporative cooling system begins to shut down the grass plant, thatch, and soil surface quickly heat up to the existing air temperature or higher. Plants can be literally cooked to death by direct heat injury as plant tissue temperatures rise above 95 degrees F. Temperatures this year were sufficient to cause rapid injury directly from high temperatures and indirectly from prolonged periods of high temperatures that eventually depleted stored carbohydrates. Weakened plants with slow growth were often overcome by brown patch and Pythium diseases that flourished when night time temperatures were greater than 72 degrees F.

What to do

The bad news is that several lawns have succumbed to the various woes of summer described above. The good news is that now is the best time to rejuvenate damaged lawns. This may be a good time to kill the existing mess and start over with improved grass varieties suitable for your lawn. Consult your local professional lawn care company to develop a plan to recover your lawn through aeration, slicing, seeding, and fertilizing.

Going Green with Mills County Master Gardeners

You can purchase a "green" bag from the Mills County Master Gardeners for \$2.00. Or buy several – they're great to take to stores, eliminating the need for so many plastic bags! Available at the Extension Office



Disclaimer: Artist's conceptual rendering. Bag Color, Ink Color and Logo Placement may vary a bit from concept. Your artwork will be printed on a 12" W x 13" H bag.

Upcoming Horticulture Events of Interest:

Mills County Master Gardener Seminars

"A Gardener's Guide to Autumn"

Date: Monday, October 4
Time: 7:00 – 8:00 PM
Place: Glenwood Resource Center
 711 S. Vine St., Glenwood
 Visitor's Center Conference Room
Cost: \$2.00

Well-known garden writer, Jan Rigenbach, will present an information-packed program including good plants for late season interest and fall tips to help you create more beauty with less work. You won't want to miss this opportunity to hear from a true expert on gardening in our area since Jan lives and gardens just north of Glenwood!

"Adventures in Water Gardening"

Date: Monday, November 1
Time: 7:00 – 8:00 PM
Place: Glenwood Resource Center
 711 S. Vine St., Glenwood
 Visitor's Center Conference Room
Cost: \$2.00

There are few elements you can add to your landscape that will offer you as much reward as some type of water feature. Local Master Gardeners, Tracey and Denise Fikes, will share their experience of installing several different water features themselves. They will walk you through the process so that you can start plans for adding and enjoying your own water feature!

Refreshments served!

Stress is a tree Killer

By Tivon Feeley
 Extension Forester
 Iowa State University Extension

Every year in Iowa, ornamental woody plants, trees and shrubs die without showing any glaring and obvious causes. In addition, insects and diseases cause their share of decline and mortality in trees.

Trees, people, stress and the results of stress are somewhat similar. In some cases, if the trees are stressed or if they have been wounded (a major cause of

tree stress), they may be more susceptible to damage caused by insects and diseases.

Stresses in trees may be caused by natural factors and conditions or through the activities of man or animals. These factors may be chronic (recurring and lasting for a long time) or acute (immediate impact). Examples of chronic damage are wet soils caused by site selection, soil compaction or poor nutrition. Acute damage includes flooding, freezing conditions, severe construction damage and deer browsing.

Tree stresses may be very dramatic and obvious or not easily observed or recognized. Obvious stresses may include basal damage or storm damage. Stresses from grade changes, soil compaction or pollution are not very visible.

Trees often do not display immediate responses to stresses because of their accumulated growth habit. However, with stresses come several changes within the tree depending on the damage caused by the stress. In some cases, the process of photosynthesis, which is the primary supply of carbohydrates for all tree functions, is reduced and the tree's stored food reserves are depleted.

When root systems are damaged by construction damage, compaction or poor drainage, they cannot supply adequate water and nutrients for the trees growth and survival. When this happens, often the tree is unable to produce sufficient carbohydrates and growth regulating chemicals.

When trunks or stems are damaged, the carbohydrates movement to where it is needed for growth and function is stopped, and may result in death of roots or other growing points of the tree. The end result of these reduced processes is that the tree, at best, operates at less than peak efficiency and in many cases it begins a downward spiral of all of its growth functions.

As stresses continue, the tree does eventually exhibit external symptoms. Annual incremental growth is reduced and becomes significantly less than normal. Leaves may be fewer in number and smaller in size. Sometimes, the tree produces excess fruit or seed as a survival mechanism. The tree may exhibit summer scorch symptoms because of insufficient water provided to the leaves during dry weather.

With continued stresses, branches begin to die, and at the same time the root system of the tree is reduced because the crown is producing inadequate food for good root expansion and growth. These processes continue into a downward spiral, usually resulting in the continued decline and eventual death of the tree over a period of 2-15 years. In most cases, once the tree has tipped the balance of not providing sufficient

carbohydrates for continued growth of the tree, it cannot recover.

If the physical stresses do not kill the tree, it often will be exposed to more stresses through opportunistic diseases and insect attacks. These biotic attacks may speed up and/or complete the demise of the tree.

Much of the survival, growth and health of our woody vegetation in our landscapes is dependent on the homeowner working to prevent stress and provide the optimal growing environment for the tree. This may begin with plant selection to ensure that the selected plant will perform well on the specific site and soil.

Avoid injuries to trees and their expansive root systems during construction or when working around trees. Don't over fertilize trees; excessive leaf production often results in moisture stress during hot dry periods in Iowa. Avoid basal damage to tree trunks because this is the direct connection from the roots to the leaf tissue and area.

Lawnmowers are still one of the major causes of damage to trees. Use proper pruning techniques, and avoid pruning during the spring period of leaf expansion. Use mulches to reduce temperature and moisture extremes. Use caution when using lawn irrigation systems. Trees often suffer because of too frequent watering resulting in soils that are too wet for good root growth.

2011 Garden Calendar Says Good Health is a Gardening Bonus

Gardeners, novice and experienced, will be inspired by Iowa State University Extension's 2011 garden calendar. The full-color, 12-month calendar is filled with stunning photography and information. Monthly "gardening is good for you" messages and health tips have been added to the gardening tips traditionally featured in the extension garden calendar.



Calendar co-authors Cynthia Haynes and Richard Jauron, extension horticulture specialists, considered public interest in healthy living when they created the 2011 calendar. "Everywhere you look, you see information on ways to improve your health — how to exercise, what to eat, what not to eat — that made us think of all the ways gardening can help people stay healthy," Haynes said.

This encouraged Haynes and Jauron to focus the calendar on the physical, emotional, nutritional and

psychological benefits of gardening. “We have included a few health tips in the usual line-up of gardening tips throughout each month,” Haynes said. “And we had a lot of fun working on them!”

The authors believe the calendar will provide new gardeners with information that helps them improve their gardening practices, while helping experienced gardeners find new and different things to try. Their goal is for all gardeners to become better gardeners, to garden more efficiently and effectively as they meet their gardening needs and objectives — whether that is for consumption, profit, beauty or some other reason.

Gardening is GOOD for you – 2011 Garden Calendar, PM 815 is available for \$6 from the ISU Extension online store at www.extension.iastate.edu/store or from local extension offices. This is the 33rd edition of the ISU Extension garden calendar.

Editor’s Note: *The new calendars are here! Stop by the Extension office to get your copy. (Hint – they make great holiday gifts for all the gardeners on your list! 😊)*

Ask the ISU Extension Gardening Expert

When is the best time to plant tulips and daffodils?

October is the ideal time to plant tulips, daffodils and other spring-flowering bulbs in Iowa. When planted in October, spring-flowering bulbs have sufficient time to develop a good root system before the ground freezes in winter. If weather permits, bulbs can be planted as late as mid to late November.



Most spring-flowering bulbs perform best in partial to full sun. Bulbs also need a well-drained, fertile soil.

Plant spring-flowering bulbs in clusters or groups to achieve the greatest visual impact in the garden. When planting daffodils or tulips, plant 10 or more bulbs of the same variety in an area. Smaller growing plants, such as grape hyacinths and crocuses, should be planted in clusters of 50 or more bulbs. Plant bulbs at a depth equal to three to four times their maximum bulb diameter. Accordingly, tulips and daffodils should be planted six to eight inches deep, crocuses and grape hyacinths only three to four inches deep. Large bulbs, such as tulips and daffodils, should be spaced four to six inches apart. A three-inch-spacing is adequate for crocuses, grape hyacinths and other small bulbs.

What is the black sooty substance covering the leaves on my tree?

Sooty mold fungi are probably responsible for the black sooty substance on the leaves of your tree. Several species of fungi can cause sooty mold on maple, linden, magnolia, pine and other plants. These fungi do not actually take nutrients from the plant. Instead, they live off of sticky insect secretions called "honeydew," created by sucking insects such as aphids and scales. These insects suck large quantities of sap from the plant, and excrete sticky, sweet honeydew from their rear ends. When populations of the insects are high, there is sufficient honeydew to support growth of the sooty mold fungi. Excess honeydew (sometimes covered with sooty mold) can also be found on cars, decks, patio furniture or other objects below the insect-infested tree.

Sooty mold is not directly harmful to the tree, but its presence usually indicates a large population of aphids or scales. In most years, weather and natural enemies keep aphid and scale populations in trees in check. It is usually not necessary to spray trees to control aphids and scales.

My amaryllis has been outside all summer. How should I care for it in the fall?

The amaryllis should be brought indoors in mid-September. In order to bloom, amaryllis bulbs must be exposed to temperatures of 50 to 55 degrees Fahrenheit for a minimum of 8 to 10 weeks. This can be accomplished by inducing the plant to go dormant and then storing the dormant bulb at a temperature of 50 to 55 F. To induce dormancy, place the plant in a cool, semi-dark location in late September and withhold water. Cut off the foliage when the leaves turn brown. Then place the dormant bulb in a 50 to 55 F location for at least 8 to 10 weeks.

After the cool requirement has been met, start the growth cycle again by watering the bulb and placing it in a well-lighted, 70 to 75 degrees F location. Keep the potting soil moist, but not wet, until growth appears. The other option is to place the plant in a well-lighted, 50 to 55 F location in fall. Maintain the amaryllis as a green plant from fall to mid-winter. After the cool requirement has been met, move the plant to a warmer (70 to 75 F) location.

When is the best time to apply a herbicide to the lawn to control dandelions and other broadleaf weeds?

Fall (mid-September through October) is the best time to control perennial broadleaf weeds in the lawn with broadleaf herbicides. In fall, perennial broadleaf weeds are transporting food (carbohydrates) from their foliage to their roots in preparation for winter. Broadleaf herbicides applied in fall will be absorbed by the

broadleaf weed's foliage and transported to the roots along with the carbohydrates, resulting in the destruction of the broadleaf weeds.

Broadleaf herbicides can be applied as liquids or granules. Before applying any herbicide, carefully read and follow label directions.

When should I harvest butternut squash?

Butternut squash are mature (ready to harvest) when the skin is hard (can't be punctured with the thumbnail) and uniformly tan in color. When harvesting, leave a one inch stem on each fruit.

After harvesting, cure butternut squash at a temperature of 80 to 85 F and a relative humidity of 80 to 85 percent for 10 to 14 days. Curing helps to harden the skin and heal any cuts and scratches.

After curing, store butternut squash in a cool, dry well-ventilated location. Storage temperatures should be 50 to 55 F. Do not store squash near apples, pears or other ripening fruit. Ripening fruit release ethylene gas, which shortens the storage life of squash.

When properly cured and stored, the storage life of butternut squash is approximately two to three months.

SEPTEMBER GARDENING TO DO LIST



- Take geranium and coleus cuttings and root them indoors.
- Continue to water newly established trees, shrubs, and perennials.
- Harvest winter squash before hard frost. Skin of the squash should be tough with deep, solid color. Some cultivars will show an orange blush when mature.
- Prepare thin and dead areas of the lawn for renovation. Mid-August to mid-September is the best time of year to seed lawns.
- Take a soil test if you have not done so or it has been 3 or more years. The Extension office has soil bags and instruction sheets. Current fee for the testing service is \$8.00 per sample. A soil test will tell you how much and what type of fertilizer you need.

- Dig tender garden flowers for winter storage. Gladiolus corms should be dug when leaves begin to yellow. Caladiums, geraniums, tuberous begonias, and calla lilies should be lifted before a killing frost or after a light frost has browned the foliage. Allow to air dry, then pack in dry peat moss or vermiculite, and store in a cool location.
- Control dandelions and other perennial weeds in established turf with a broadleaf herbicide.
- Consider preparing the soil for new garden areas. Kill or remove the grass, take a soil test, and amend the soil as needed. Shredded fallen leaves make a great soil amendment. Starting new gives you a jump on next season.
- Stop deadheading roses after the final wave of flowers or in late September. This allows rose hips to form and plants to start hardening off for winter.
- Harvest pears as their color changes to lighter green.
- Remove suckers at ground level on grafted fruit trees.

Resources for Horticulture information

ISU's Hortline at (515) 294-3108

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

ISU/Mills County Extension: 712-624-8616

www.extension.iastate.edu/mills/yardgarden.htm

Iowa State University Publications

- PM 1788 Growing Fruit in Iowa (\$3.00)
- NCR 0025 Lawn Weeds and Their Control (\$7.25)
- PM 731 Harvesting and Storing Vegetables(\$1.00)
- RG 311 Growing and Over-wintering Tender Perennials (free)
- RG 320 Growing and Over-wintering Garden Geraniums(free)
- RG 312 Suggested Daffodil Cultivars for Iowa (free)
- RG 310 Caring for Roses in Iowa (free)
- RG 304 Late Season Perennial Flowers (free)

Horticulture Publications on-line

<https://www.extension.iastate.edu/store/ListCategories>

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