



THE GARDEN SPADE



A monthly Gardening Publication of the University of Missouri Extension -- Southeast and East Central Regions

Why Are the White Oaks Turning Brown? by Katie Kammler

In a few trips across Missouri in the last several weeks, I noticed trees turning brown in the woods and alongside the road. The trees that are experiencing this problem are primarily white oaks with some other species in the white oak group. The leaves on entire crowns of white oak are turning brown and in some cases, whole hillsides appear brown.

Tree leaves can be damaged by a multitude of causes but it appears that the main cause at the moment is a high population of jumping oak gall wasp. They are very tiny, *stingless* wasps that cause pinhead-size galls on the underside of the leaf. Galls are abnormal plant growths caused by an injury to plant tissue. Each gall contains one wasp larva and most galls will drop from the leaf in early summer. Brown pockmarks remain where galls have been attached. In severe infestations, like this year, the leaves turn black, curl up and drop early from the trees.



White oak leaves damaged by jumping oak galls (Photo: S. Madison)

This particular gall gets its name from the fallen galls that appear to “jump” due to vigorous movements of the larvae within. This allows the gall to fall deeper into leaf litter and grass where they are more sheltered for the upcoming winter. Long periods of snow cover can provide further insulation and no winter warm-ups followed by a freeze most likely allowed the heavy populations of jumping oak gall that we are experiencing this year.

The wasps have only one generation per year. Damage to trees only occurs in spring, although the effects can be seen throughout the summer. Outbreaks typically last a couple of years before natural controls reduce the population again. Now for the important part—this rarely has a significant impact on tree health. Even if all the leaves are brown and fall off, the trees will recover. Control measures are not warranted because by the time the damage is observed, any opportunity for treatment has already passed.

July 2010

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The Garden Spade

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What is Wrong With My Plant?

by Donna Aufdenberg

Plant ailments are heard by the dozens by horticulturists across the U.S. this time of year when the temperature starts to really heat up and the lack of rain or abundance of rain really takes a toll.

Often the home gardener blames an insect or disease on why their plants aren't doing so hot. Sometimes these are the culprit, often times not. In order to correctly determine which culprit is causing plants to become "sick", horticulturists use a diagnostic process, just as doctors use.

Although reference books play an important role, gardeners should first try basic detective work of their own before consulting a professional because more than likely we will be asking the same questions.....

1) What does the normal plant look like? Know the species because some problems are species related like fireblight on rose family members. 2)



How much light, water and fertilizer is it getting? What is the soil conditions? Any unusual weather in the last year?

3) Is it just one plant or many, on only one species of plant or several different species? Is the entire plant affected or only a portion?

4) What are the symptoms? Are the leaves yellowing, wilting, have spots, mottled? Is the plant turning brown, black, white? Are there any signs? Where are the symptoms and signs?

5) Are there any growths, insects, or anything unusual crawling, sitting, or inhabiting the plant?

People often bring in a leaf or another infected part of a plant. This is great!! Usually we can tell what is wrong but sometimes not. It is good to know some of the other specific so we can get to the root of the problem. A big concern I always have is "How much are you watering?" This is one of the biggest key factors to a plants health.

July Gardening Calendar

By Donna Aufdenberg

Outdoor flowering plants and Ornamentals

- Perennials that have finished blooming should be deadheaded.
- Newly planted trees and shrubs should continue to be watered thoroughly, once a week.
- Keep weeds from making seeds now. This will mean less weeding next year.
- Apply no fertilizers to trees and shrubs after July 4th. Fertilizing late may cause lush growth that is apt to winter kill.
- Hot, dry weather is ideal for spider mite development. Damage may be present even before webs are noticed.
- If you have been pinching back your mums this summer, early July is the time to stop so they will be able to develop flower buds for the fall.
- Many plants are easily increased by layering. Verbenas, euonymus, pachysandra, ivy and climbing roses are some plants that will root if stems are fastened down on soft earth with a wire and covered with some soil.
- Some seeds of hollyhock, English daisies, foxgloves, violas, Canterbury bells, and Sweet William can be planted now for next year's bloom.

Vegetable Gardening

- Although tomatoes are self-pollinating, they need movement to transfer pollen. If it is hot and calm for several days, gently shake plants for assured pollen transfer and fruit set.
- Keep peas, beans, and berries cool while you pick them by spreading a damp cloth over your harvest bucket or basket.
- For a fall harvest of cabbage, broccoli, cauliflower, and brussels sprouts, set transplants in late July.
- For a fall harvest of lettuce, radish, carrots, beets, turnips, kale, and spinach, sow seed in late July to early August.
- Stop vine crops from taking over your garden or lawn by pinching off the fuzzy growing tips. This also directs the plant's energy into ripening fruit rather than producing more vine.
- Dig potatoes when the top dies. Plant fall potatoes by the 15th.
- Harvest onions and garlic when the tops turn brown.

Fruits and Nuts

- To keep birds away from fruit trees, try fake snakes. Cut old garden hoses into pieces about four feet long, and place among the branches.
- Strawberries need summer care. If you have your plants in hills, pick off all runners. If you planted a matted row, encourage the runners to root and grow until the row is 2 feet wide.
- Prune out and destroy old fruiting canes of raspberries after harvest is complete.

Easy Ways to Beat Weeds!

Know the weed. Is it an annual or perennial? Is it deep rooted?

Attack annual weeds when it is dry.

Attack perennial weeds when the soil is wet and the tap root is easier to pull.

Never let weeds go to seed or they will become overwhelming next year.

Become obsessed with mulch. A thick layer will smother most weeds.

Bake weeds under a clear sheet of plastic!

Cook weeds with boiling water in areas where no desired plants are.

Plant a cover crop so weeds won't have a chance to compete for soil, water or sun!

Why Use Irrigation

by Sarah Denkler

Temperatures in July and August are reminders of how much plants rely on irrigation. There are several options that can be used based on the need. In general, water deeply in early morning to prepare plants for the heat of the day and prevent disease issues that arise from evening watering.

The most common types of irrigation include drip tube for use with individual plants that are irregularly spaced, soaker hoses for use when soaking a mass planting, drip tape for use in a garden area to water plants that are evenly spaced, automatic sprinklers for use in watering lawns and ground sprinklers for use in open areas that require temporary irrigation.

The point of using irrigation is to help conserve water. Toward that purpose consider these

practices as well. Use mulch, apply the proper amount of fertilizer to prevent excessive plant growth resulting in higher water use, dethatch and aerate lawns to aid water penetration into soil, separate plants by the amount of water they use and water that area

accordingly, install a rain switch on automatic irrigation systems so they turn off during rain, fix leaking valves, remove anything that blocks irrigation heads and move heads further from sidewalks and roadways.



Master Gardeners Tour Botanical Garden

by Laura Dowd - President, Poplar Bluff Chapter

Members from the Poplar Bluff Master Gardener Chapter recently visited the Missouri Botanical Garden in St. Louis. The group was treated to a private tour of the greenhouses learning about the production and the vast varieties of plants utilized in the gardens. Each plant is individually labeled and inventoried in the Botanical Garden system. We were amazed at the sheer volume of plants that are produced to plant in the gardens. We learned that each section of the garden is carefully planned and these plans are submitted to greenhouse staff for plant production. Some regions of the garden are redesigned and re-planted up to three times per year.

After touring the approximately 80 acres of the garden we visited the Monsanto Center Herbarium which is a research facility associated with the Bo-

tanical Garden. Opened in 1997 the Monsanto Center is one of the world's outstanding research centers for plant specimens and information. As of January 1, 2009 the collection contains 6,063,826 specimens. We were given information concerning the collection, identification, research and stor-

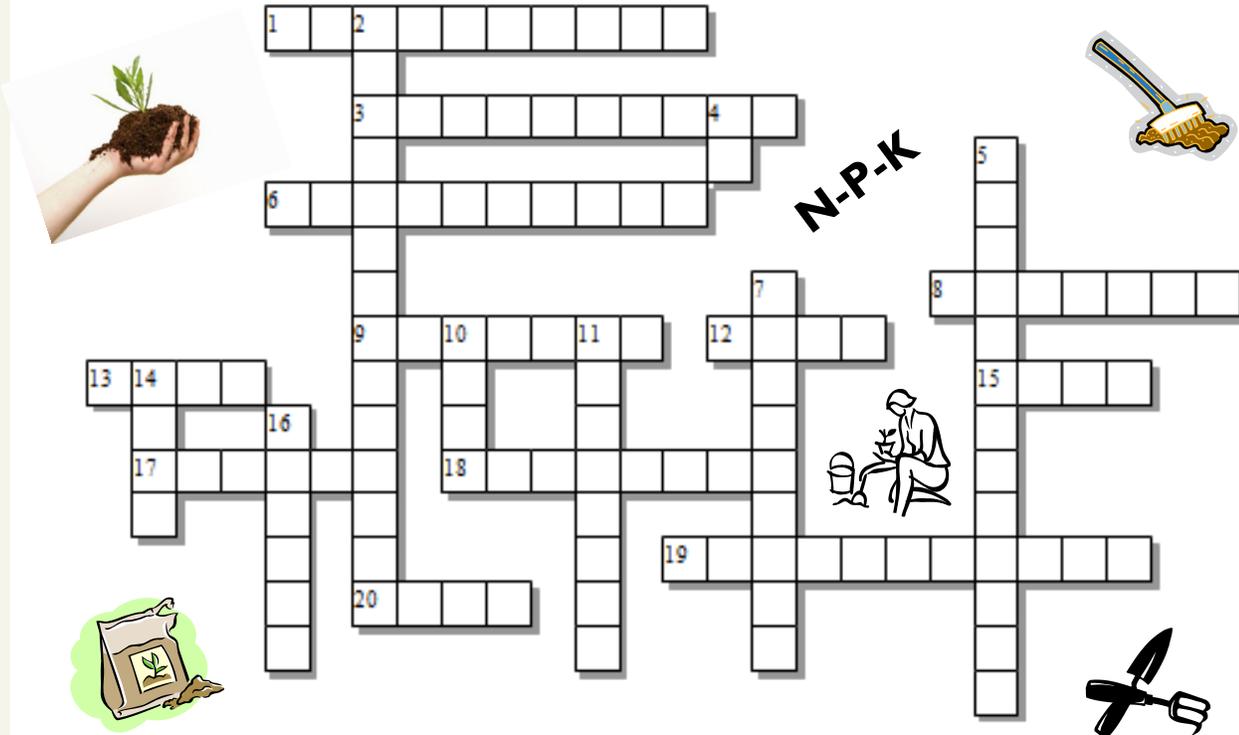
age of the specimens. A tour of the center's library revealed rare books, many with botanical art. The library is primarily used by Monsanto Center staff in their research and study but is available for public use.



As always, the Botanical Garden was absolutely beautiful and continues to be a source of inspiration and motivation for gardeners. The tours of the greenhouses and the Monsanto Center were very interesting and informative and added another dimension to this fantastic gem we have in Missouri.

Garden Soil Fun!

by Donna Aufdenberg



ACROSS

- 1 - Hinders penetration of air, water, and growth of roots.
- 3 - "Green Manure"
- 6 - Macronutrient that focuses on plants blooming and rooting.
- 8 - A deficiency of this nutrient causes blossom end rot in tomatoes.
- 9 - Excess of this can be damaging to soils breaking town soil structure.
- 12 - Composed of mineral and organic components, water and air.
- 13 - Soil with very small particles. These soils can store a lot of water and are "heavy". Not as permeable to air and water.
- 15 - A deficiency of this nutrient causes yellowing and chlorosis.
- 17 - Excrement of various animals: cow, horse, chicken, rabbit, etc.
- 18 - Soil life. Bacteria, Fungi, Protozoa, etc.

- 19 - Refers to the coarseness of the soil.
- 20 - Soil with large particles. These soils are fast draining and subject to drought.

DOWN

- 2 - Nutrients that are needed in smaller or limited quantities.
- 4 - Measure of soil acidity or alkalinity.
- 5 - Plant and Animal residues at various stages of decay.
- 7 - Nutrient needed in large quantity for bud growth and fruit ripening.
- 10 - Soil with a balance of sand, silt and clay.
- 11 - Essential nutrient; building block for green leaves and stems.
- 14 - Raise soil pH.
- 16 - Lower soil pH.

DISEASE OF THE MONTH: Leaf Spots

by Sarah Denkler

As the temperature warms up and vegetables begin to grow it is possible to notice more and more spots on plant leaves. Although there are many possible causes many of the most common are caused by fungi. In some cases the problem stays with the leaf but in others it can move to the fruit.



Anthrachnose lesion on pepper.

Anthrachnose *Colletotrichum orbiculare* usually begins on the leaf service as yellow spots that become darker and grow with age. You will find this fungi on melons, tomato, pepper, beans, squash and cucumber as well as fruit and ornamental trees. On the fruit you will see water soaked brown or

black lesions that rot from the center out causing the fruit to shrivel. This disease is spread when rain or irrigation splashes from infected areas to healthy tissue.

Alternaria solani is the form of alternaria that is also known as early blight. This fungi can infect cucurbits, potato, tomato, pepper and onion as well as flowers and apples. This creates dark lesions or spots on the foliage with rings like those on a bulls eye or target. It is spread by wind and splashing water during cool, humid conditions. Once temperatures reach 75 and above then the spread of the disease should slow. It can move to fruit, turning it black at the stem.

Septoria lycopersici is a problem that is almost always present on tomato, starting with the lower leaves and working its way to the top. Yellow leaves appear with small dark spots that will eventually become crispy and fall out. Spread occurs when water splashes from soil or infected area to the plant.

Cercospora *Cercospora spp.* Occurs in several species. Each infects hosts with different symptoms

which move from spots covered in spores to yellowing and dead tissue. Some common susceptible hosts include carrot, melon, corn and pepper. The disease is spread when plants are overcrowded and during warm temperatures with high humidity. The first symptoms often occur on older leaves.

Control measures include planting resistant varieties, preventing foliage from evening moisture and burning any residue from infected plant tissue. Leaf spot will overwinter in debris and in some cases soil so sanitation is important. If necessary spray appropriate fungicide to control the spread of the disease. Rotate garden crops to other areas on a three year cycle. Poor fertility, drought and insect damage increases stress on plants which increases disease severity.

Resources: Robert Mulrooney. Rotation Periods to Control Vegetable Diseases. PP-27. University of Delaware. <http://ag.udel.edu/EXTENSION/horticulture/pdf/pp/pp-27.pdf>

Common Diseases in the Home Garden. G6203. University of Missouri Extension. Rev. September 2007. <http://extension.missouri.edu/explorepdf/agguides/hort/g06203.pdf>

Repurpose, Reuse, Recycle - Pass It On

By Barb Gray

Try these uses. Take 2 plastic net bags (that you get onions in) to make a scratch pad for cleaning your garden tools. Make the scratch pad by folding the bags two or three times and then securing them together with a string tied in the center. You can also use crushed egg shells around plants to help prevent slug damage. As a bonus, the egg shells are a good addition to the soil.



Group News - What's Happening

July 2010

Sun	Mon	Tue	Wed	Thu	Fri	Sat
<p>Contact your local Extension Center if you have questions about any event on the calendar or if you have a horticultural event for the calendar.</p>				1	2	3
4	5 Master Gardener Training 3-6 PM @ Mueller's Garden Lane in Sikeston	6 Poplar Bluff MG BBQ, 6:30 pm @ The Dowd's Master Gardener Training at Ste. Gen Ext. Office through July 6	7	8	9	10
11	12 Master Gardener Training 3-6 PM @ Mueller's Garden Lane in Sikeston	13	14	15	16	17
18	19 Master Gardener Training 3-6 PM @ Mueller's Garden Lane in Sikeston Ste. Genevieve MG Meet- ing, 6:30pm, at the Ste. Genevieve Co. Ext. Center	20	21	22	23	24
25	26 Master Gardener Training 3-6 PM @ Mueller's Garden Lane in Sikeston Perry Co. MG meeting, 6:30 pm, Perry Co. Ext. Center	27	28	29	30	31

Upcoming Events....

AUGUST

- 2 - Master Gardener Training 3-6PM at Mueller's Garden Lane in Sikeston
- 3 - Poplar Bluff Master Gardeners meet on the first Tuesday each month at 6:30PM
- 9 - Master Gardener Training 3-6PM at Mueller's Garden Lane in Sikeston
- 16 - Ste. Genevieve Master Gardener Meeting is held every Third Monday of each month at the Ste. Genevieve County Extension Center at 6:30PM
- 16 - Master Gardener Training 3-6PM at Mueller's Garden Lane in Sikeston
- 19 - Cape Girardeau County Master Gardener Meeting is held every Third Thursday of each month at the Cape County Extension Center at 7PM
- 23 - Perry County Master Gardener Meeting is held every Fourth Monday of each month at the Perry County Extension Center at 6:30PM

SEPTEMBER

- 2 - Parkland Master Gardeners meet on the first Monday each month at 6:30PM at the Farmington Courthouse Annex (Third Floor)
- 3 - Poplar Bluff Master Gardeners meet on the first Tuesday each month at 6:30PM
- 16 - Ste. Genevieve Master Gardener Meeting is held every Third Monday of each month at the Ste. Genevieve County Extension Center at 6:30PM
- 19 - Cape Girardeau County Master Gardener Meeting is held every Third Thursday of each month at the Cape County Extension Center at 7PM
- 23 - Perry County Master Gardener Meeting is held every Fourth Monday of each month at the Perry County Extension Center at 6:30PM

Editor's Corner

The Monthly Spade is published monthly by University of Missouri Extension staff for individuals and families living in Southeast and East Central Missouri. This newsletter is provided by your local extension council.

Editors:

*Katie Kammler, Plant Science Specialist
255 Market St., Ste. Genevieve, MO 63670
573-883-3548*

*Sarah Denkler, Horticulture Specialist
222 North Broadway Street, Poplar Bluff, MO 63901
573-686-8064*

*Donna Aufdenberg, Horticulture Specialist
304 High Street, PO Box 19, Marble Hill, MO 63764
573-238-2420*

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We welcome and encourage Master Gardener groups and individuals to submit items to the newsletter. We encourage the submission of any news such as upcoming volunteer opportunities, community events related to gardening, warm wishes or congratulations to fellow gardeners. We also encourage Master Gardeners sharing experiences and writing articles on timely topics.

All entries into the group news sections must be received by 4:30 on the 15th of each month for the following months news.

Email News to: kammlerk@missouri.edu,
denklers@missouri.edu, or aufdenbergd@missouri.edu

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Master Gardener

Bollinger County Extension
304 High Street
P.O.Box 19
Marble Hill, MO 63764

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