



THE GARDEN SPADE



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

Tolerance and Threshold Levels

By Donna Aufdenberg, MU Horticulture Specialist

With every flower bed, vegetable garden or fruit planting comes insects - bad insect pests as well as beneficial insects. In today's world, we jump quickly to spraying for insect problems even though we should be taking a step back and asking ourselves if a pesticide is truly warranted.

There are several things that should be considered when deciding to use a chemical for pest control.

- Is the insect truly a pest? Do a bit of research - what is the pest and find out what it feeds on and how it feeds.
- What is the lifecycle and which stage is considered the pest? There are some species where only one stage is the pest and other species where all stages are pests.
- How many insects are on the plant and/or surrounding plants? Is it affecting a single species or multiple species?
- What is the plant's threshold level? How much insect damage can the plant handle before it truly starts to be impacted. This is determined by age, condition and



Aphids on Annual Butterfly Weed parasitized by tiny parasitoid wasps.

maturity of the plant.

- What is your threshold level? Many insect problems can lead to unsightly damage. In vegetables and fruit, some insects can lead to yield loss while others cause unsightly damage but the produce is still edible.

- What part of the year does the damage occur? An aphid population on tomato plants is not as devastating in the fall as it

would be in the spring. A repeat defoliation on a tree in the spring is more devastating than one in the fall because the growth is new and energy has not been stored in the roots.

I will be the first to admit that I love my perfect blossoms for bouquets in the house and I like to give away nice looking vegetables but I always hesitate in treating pest problems. I find myself asking whether I should drag out the sprayer. With two 7 year old girls and a dog that loves to roam the garden, I worry about chemical exposure AND tracking it into the house.

My experience:

This year, I planted the annual form of the butterfly weed (*Asclepias*

September 2014

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Tolerance and Threshold Levels

By Donna Aufdenberg, MU Horticulture Specialist

curassavica). I have always had the perennial form (*Asclepias tuberosa*) and have had relatively no real major pest issues except for some bugs that gather on the seed pods once the flowering is over - no big deal for me. The one observation is that in my 8 years of growing the *A. tuberosa*, I never had one single Monarch caterpillar.



Different colors of annual butterfly weed

Since planting the annual form of butterfly weed this year, I have had several insect issues. Aphids were the first problem followed by a few other odd looking insects. My big surprise came after my girls kept saying they were seeing Monarch Butterflies.

During my years of living here, I had never seen a Monarch on the property. Now we were finding Monarch caterpillars. I was thrilled but sure not as thrilled as my girls. For days they checked on them.



Monarch Butterfly Caterpillars

I am telling you about this because it is a story of tolerance and threshold levels. I allowed the aphid population to really peak - they were everywhere but due to the fact that I didn't want to kill the caterpillars, I chose not to spray a pesticide. Putting up with the aphids

was worth the experience that my girls and I received. Another benefit in allowing the aphids to remain was that the parasitic wasp that feeds upon the aphids decimated the aphid population about two weeks later. The other fact - no leaves were left for the aphids to feed on

because the caterpillars devoured them!

It has been truly enjoyable to watch all this take place. The annual butterfly weed will definitely make the planting list for next year - I will just have to plant more of it.

Save the Date! 19th Annual Missouri Master Gardener Conference



Regular registration pricing of \$175 is in effect Sept. 1-10.

THERE IS STILL TIME TO REGISTER!!!

**Birds, Bees, Butterflies & Bats:
Our Partners in Gardening**

September 12-14, 2014

Register at <http://www.momgconference2014.org/>

Presented by:

St. Louis Master Gardeners, Missouri Master Gardener Association, Inc., Missouri Botanical Garden and University of Missouri Extension

September Gardening Calendar

By Donna Aufdenberg, MU Extension Horticulture Specialist

Ornamentals

- Herbs such as parsley, rosemary, chives, thyme and marjoram can be dug for the garden and placed in pots now for growing indoors during winter.
- Cuttings of annuals can be taken now to provide vigorous plants for overwintering.
- Begin readying houseplants for winter indoors. Prune back excessive growth and protruding roots. Check for pests and treat if necessary. Houseplants should be brought indoors at least one month before heat is turned on.
- Perennials, especially spring bloomers, can be divided now. Enhance the soil with compost and peat moss before planting.
- Divide peonies now. Replant in a sunny site and avoid planting too deep.

Lawns

- Begin fall seeding or sodding of cool season grasses. Seedbeds should be raked, dethatched, or core-aerified, fertilized and seeded. Keep newly planted lawn areas moist, but not wet.
- Cool Season lawns are best fertilized in fall. Make up to 3 applications between now and December.
- Newly seeded lawns should not be cut until they are at least 2-3 inches tall.

Vegetables

- Sowing seeds of radish, lettuce, spinach and other greens in cold frames will prolong fall harvest.
- Keep broccoli picked regularly to encourage additional productive side shoots.
- Tie leaves around cauliflower heads when they are about the size of golf balls.
- Pinch off any young tomatoes that are too small to ripen This will channel energy into ripening the remaining full size fruit.

Fruits

- Pick pears before they are fully mature, store in a cool, dark, basement to ripen.
- Bury or discard any spoiled fallen fruits.
- Check all along peach tree trunks to just below soil line for masses caused by borers. Probe holes with thin wire to puncture borers.

Miscellaneous

- Autumn is a good time to add manure, compost or leaf mold to garden soils for increasing organic matter content
- Monitor plants for spider mite activity. Hose off with a forceful spray of water.
- Seasonal loss of inner needles on conifers is normal at this time.

Causes of Leaf Drop on Plants

Some evergreens may drop some of their oldest leaves in spring as new growth begins (holly and magnolias).

Some evergreens may drop leaves in summer (euonymus).

Pines will have a fall needle shed.

General leaf drop of deciduous plants can be caused by drought, too much moisture, nitrogen deficiency, air pollution, insect infestation, and diseases.

Environmental factors such as wind, rain, and hail can also play a part.

Always check your plants closely to determine the true cause of leaf or needle drop.

Quercus Species

by Katie Kammler, MU Extension Horticulture Specialist

Quercus is the Latin genus name for oak trees. There are many trees in our landscapes and native forests that fall in this category. They can be deciduous or evergreen and their range extends from cool temperate regions to tropical areas. Around 54 species occur in North America, 21 of which are native to Missouri.

Oaks are one of Missouri's most important and abundant trees. The acorns are a valuable food source for deer, turkey, and squirrels. Oak lumber is used for making barrels, furniture, cabinets, flooring, and railroad ties. Oaks shape the landscape of much of Missouri, providing shade and serving as historical markers.

Oaks have separate male and female flowers. The male flowers are pollen bearing stamens on catkins and the females are rounded to pointed, knoblike and usually in the leaf axils. The female flowers are wind pollinated, therefore requiring mass amounts of pollen. I always know when the oaks in my yard are blooming because my truck is coated in green dust. Once pollinated, the acorns can take one to two years to mature. Acorns are a food source for many critters and insects so it is rare that one will produce a new tree. Most oaks are more than 30 years old before producing acorns.

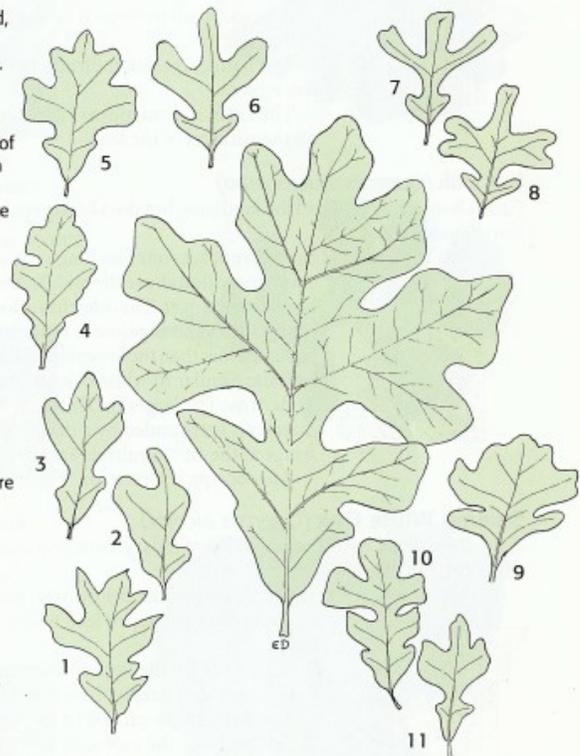
Native oaks are usually divided into two categories, white oaks and red oaks. General characteristics of white oaks are they produce the most valuable lumber because the wood is leak proof, bark is generally light colored, acorns mature in one year, the cups of the acorns have no hair inside, the leaves are lobed or serrated without bristles, and they have less tannin than red oaks. Red oak characteristics include acorns that mature in the fall of their second season, leaf lobes are bristle

tipped, the acorn cup has fine, silky hairs inside, the wood is not water tight but is used for many applications, bark of most red oaks is dark gray, brown or black, and some have a red leaf color in the fall. Oaks can be hard to identify for even the experienced because they have an amazing variability in the leaf shapes of certain species. Young trees often vary totally from the mature shape. Oaks can also hybridize and produce viable seeds that will produce a new tree. If you are interested in learning more about oaks, I recommend Missouri Department of Conservation's publication, *Missouri Oaks and Hickories*. It provides great color photos of leaves, bark, and acorns.

Leaf Lore

There's no better display of the infinite variety of nature than among oak leaves. We chose a few trees, all post oaks and all growing close to each other, and discovered this amazing array of shapes.

1. Normally rounded, this post oak has some pointed lobes.
2. A leaf obviously disfigured.
3. The indentations of the lobes have been eliminated and the lower lobes are quite irregular.
4. The sides are different shapes.
5. A well-developed "typical" leaf.
- 6 and 7. The top central lobe is reduced in size and lacks indentations.
8. Same as 6 and 7 but the side lobes are deeply indented.
9. The top lobe is enlarged and flattened, an unusual occurrence.
10. An additional set of two lobes.
11. The broad lobes differ in size and shape.



Center. An almost perfect and unusual leaf with deeply indented top and side lobes, the lower lobes and "knobs" below them are quite different from each other.

Taken from *Missouri Oaks and Hickories* from Missouri Department of Conservation.

Rejuvenating Ancient Orchards

by Sarah Denkler, MU Extension Horticulture Specialist

On occasion a gardener is 'lucky' enough to stumble into an ancient orchard full of fruit. This may be an orchard of trees or one of bushes but the task is the same, how can it be rejuvenated?

Many of the tasks that need to be performed for either scenario are the same. In the first year clean it, prune it, scout for issues and remove, fertilize, apply disease prevention measures, irrigate, control weeds and maybe harvest. Add new varieties if necessary in the fall before repeating the process the second year.

Clean it - if possible get a brush cutter into the orchard and remove any overgrowth, weeds and undesirable shrubs from the area. This may be a daunting task depending on how ancient the orchard. Do not concentrate on pruning desired plants but on removing all the growth that shouldn't be there. This may take more than one attempt. Once this is done it will be much easier to see the task that lies ahead.

Prune it - in late fall, mark trees and branches that need to be removed so that it is clear what to prune out in late winter. This may take more than one year to get under control as care must be taken not to prune out more than 1/3 of each desired plant each year. Pruning is the backbone of orchard rejuvenation.

Scout for issues - once damaged and overgrown branches have been removed, take time to look for disease or insect damage in the trees. Damage needs to be identified so a control strategy can be put into place. In some cases the entire tree may be too infected or infested and should be removed and burned entirely. Often, it may require only a few more cuts, good sanitation, fertilization and irrigation to overcome the many years without care.

If the orchard is mostly composed of shrubs then pruning and scouting for issues may be reversed. Take the time to cut individual plant canes on shrubs and scout for disease pressure at the same time. If blight, canker or virus are found in plants then those plants should be completely removed and destroyed. In the case of brambles or elderberries, a brush cutter

can be used to take down the entire orchard in late winter. Before cutting, hand scout the plants to see if blight, canker or virus are present. If so, remove and destroy those plants before cutting the entire orchard. Using the brush cut strategy may set harvest back by a year but does provide a fresh start.

Fertilize - test the soil and add nutrients as recommended in early spring. These plants have gone along time without any TLC so this boost of energy will go a long way in improving the health of the orchard. Keep scouting for insects and act accordingly.

Apply disease prevention measures - create a plan for disease control in winter and as buds begin to break put this plan into practice. Strategies that might be used are sanitation with careful observation the first year looking for the presence of disease pressure before using chemicals. Another option is to anticipate common diseases that are in the area and apply a chemical control strategy at bud break in conjunction with sanitation practices to prevent disease in summer.

Irrigate - add irrigation in early spring to prepare for a possible need in June, July and August. A consistent supply of water is necessary during fruit formation to ensure a good harvest.

Control weeds - continue to maintain good weed control in the orchard. This will be hardest in the first year as the area is still converting back to a tamer environment. Control of weeds will help to keep insects and diseases in check. This can be done with chemicals or by continued mowing or both depending on the size of the area and owner desires.

Add new varieties - if damage caused the removal of many plants then new varieties may be needed or desired to make the best use of the open space. If these holes were caused by disease then it is a good idea to wait and make sure the disease agent is indeed gone before replacing plants. At the very least allow one full year of growth to occur before considering any replacement of plants.

Alluring Alliums

Beth Bliese, Cape County Master Gardeners

For the last couple of years, I have been fascinated with Alliums. I have known about them for many years and was first introduced to them by browsing through bulb catalogs. They have a lot to offer a gardener. Alliums are often overlooked because of their common name of “Ornamental Onion” which brings to mind onions from the grocery. The allium family is Amarylidaceae which interestingly, the same family as the Amaryllis.

Alliums are often thought of as spring blooming plants. Actually, there are cultivars that come into bloom spring, summer and fall in a variety of colors. Alliums can bridge the gap between spring blooming daffodil and tulip bulbs to summer flowers. There are alliums for every season except winter and then, the stalks and blooms can be used in a dried floral arrangement.

These easy-to-grow bulbs need to be planted in any soil as long as it has good drainage. They love basking in full sunshine. Alliums need to be planted in the fall for cold stratification anywhere from 8 to 22 weeks. Depending on the size of the bulb, plant the larger bulbs at a depth of 6 inches deep and the smaller bulbs 3 to 5 inches. Other sources say, as a general rule, to plant the bulb below the soil level anywhere from twice the diameter of the bulb to as much as four times the diameter of the bulb. Another option is to plant the bulb twice as deep as the height of the bulb. Keep in mind the shorter alliums make an interesting front border plant while the taller alliums should be planted in the back of the garden. For greater impact and ease, plant the alliums in groups. Plant the smaller bulbs 4 inches apart and larger bulbs 9 inches apart. Digging a little deeper and giving the bulb a nice friable bed allows the roots to grow quickly. Adding a little bone meal or compost will reward you with big beautiful blooms.



They range in height from 12 inches to 40 inches. Size of the blooms are from as small as a quarter and as large as a softball. You will need to plant more of the smaller bulbs to make an impact. The larger the bulbs, the more expensive they are.

Many alliums produce offset or bulblets. Once the flower is finished blooming and the leaves have died, lift the plant and take off the offsets or bulblets and re-plant. Some alliums (Allium roseum, Allium sphaerocephalon, Allium vineale) produce aerial bulbils in the flower head. Carefully remove and separate the bulbils and plant in moist compost 1 inch apart and 3/8 inch deep. Others reseed freely. If you don't want more plants, dead head them before they go to seed, or they can be dug up easily to be moved to another location or pulled up to be composted. Hybrid alliums will not come true from seed.

Because the leaves die back during the summer, it is good to plant other perennials around the plants to cover the dying foliage. Some plants that look nice with Alliums are Candytuft, Iris, Roses, Peonies, Lilies, Nasturtiums, Petunias, and Angelonia. The bulbs and stalks remain giving the garden structure and textural contrast. They can be used fresh or dried for interesting bouquets.

One can purchase Alliums locally with limited choices. The bulb and flower catalogs offer many more varieties. Order early because they usually become depleted of stock. Spend some time this winter determining which Alliums you would like to have in your garden and make a plan to determine how many you will need and where you want to put them. Then, when fall arrives you will be ready to order and plant Alliums. Including alliums in your fall bulb planting activities will reward you with a spectacular addition to your garden.



Group News - What's Happening

September 2014

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1 Parkland MG, 6:30pm @ Memorial United Methodist	2 Poplar Bluff MG Meeting 6:00pm	3 Ripley County Fair, Doniphan, MO	4 Pulaski CO MG Core Training - mopcmg@gmail.com	5	6
7	8	9	10 Butler County Fair, Black River Coliseum, Poplar Bluff, MO	11	12	13
SEMO District Fair, Cape Girardeau, MO						
				Ste. Genevieve MG, 6:30pm @ Ste. Gen. Co. Ext. Center	State Master Gardener Conference	
14	15	16	17	18	19	20
Stoddard County Fair, Dexter, MO						
- MoBot				Cape Girardeau MG, 7:00pm @ Cape Co. Ext. Center	East Perry Fair, Altenburg, MO Sept. 19-20	
21	22	23	24	25	26	27
Delta Fair, Kennett, MO						
	Perry Co. MG 6:30 pm, Perry Co. Ext. Center					
28	29	30	Contact your local Extension Center if you have questions about any event on the calendar.			

Upcoming Events

September 4 to November 14 - Pulaski County Master Gardener Core Training, contact mopcmg@gmail.com

October 4 - Parkland MGs 1st Monday at 6:30pm, Memorial United Methodist, Farmington, MO

October 5 - Poplar Bluff MG 1st Tuesday at 6:00pm at Holy Cross Episcopal Church

October 14 - Ste. Genevieve MG 2nd Thursday, at 6:30pm, Ste. Gen. CO Ext. Center

October 21 - Cape Girardeau County MGs 3rd Thursday at 7:00pm, Cape CO Ext. Center

October 25 - Perry County MGs 4th Monday at 6:30pm, Perry CO Ext. Center

October 25 - Kress Farm Garden Preserve's Fall Festival fundraiser - at 5137 Glade Chapel Rd., Hillsboro MO from 10 a.m. to 4 p.m. with music, speakers, demonstrations, guided hiking with tours of grounds and organic garden. There will be chili, hot cider, hot dogs and doughnuts. Admission = \$5 per carload. Please come out and join us for a fun day!

If you have a horticultural related event for the calendar call 573-686-8064 or email it to Denklers@missouri.edu.

Editor's Corner

The Garden 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.

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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 to share experiences and write 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,
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