



THE GARDEN SPADE



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

The Color of Trees

By Sarah Denkler, MU Horticulture Specialist

In the typical daily rush, do you notice the color in the trees? When hurrying from point A to point B greens blur by but once fall comes around do you notice the change?

Leaves are green because of chlorophyll, a compound essential for photosynthesis. During the life of a leaf, this process is maintained, providing uniformly green leaves. When leaves lack green color in summer it may be due to nitrogen if the older leaves look yellow or due to sulfur if the younger leaves are yellow. Zinc, iron or manganese deficiency can appear when there is yellowing between the veins and magnesium deficiency can reveal itself when leaves turn yellow around the edges.

So what causes yellow in the fall? The yellow and orange pigments seen in fall are always present in the leaf. They are a result of carotenoid, a pigment which gives us yellow, orange and brown colors. During summer they are seen when something is affecting the process of photosynthesis and disrupting the amount of chlorophyll, usually a nutrient deficiency or a

disease.

In the fall the shortened length of day and extended length of night play the most important role in the affect on leaves or the reveal of yellow and orange colors in fall. When the chlorophyll is removed from the leaf, the yellow and orange pigment shines through. Other factors that can affect



good fall color are the day and night temperatures and the amount of rain received during the spring, summer and fall. The best temperatures for fall color are warm fall days with cool, frost

free nights. If we have normal rainfall during spring and summer and a warm, wet period in the fall then we may see better color performance. If we have an early frost, we don't see the beautiful fall colors in the deciduous trees because the leaves are killed and they fall to the ground before the carotenoid pigments can be revealed.

The change in color is a defense for deciduous trees. These trees must lose their leaves before winter as they are not able to withstand the cold winter temperatures. Evergreen trees do not lose their 'leaves' because of

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The Color of Trees

By Sarah Denkler, MU Horticulture Specialist

the weather. They are protected by a waxy coating around the needles or scales that help protect them during cold weather. Evergreens do defoliate during the year but not necessarily every year.

What about the color red? In addition to the reduced amount of chlorophyll in the leaves, the veins at the base of the leaf stem gradually close off. This forming of the separation layer is a way of removing the leaf from the tree. As this layer is formed in fall, sugars can be trapped in the leaf. With the increase in sugars and lack of chlorophyll, anthocyanin production can increase. Anthocyanin is the pigment responsible for the colors red, blue and purple. If anthocyanin is present it will mask the carotenoid in the same way that chlorophyll does and the leaf will appear red instead of yellow.

Certain trees have a tendency to produce brighter yellows than others. Birch, ginkgo, poplar and maples produce some of the brightest yellows.

hickories can produce golden bronze colors. Most oaks will turn brown but Scarlet Oak and sometimes Pin Oak can produce truly beautiful red colors. Sassafras, Sumac, Japanese Maple, Red Maple, Virginia Creeper, Sweetgum and Dogwoods are also famous for purples and reds in fall.

Now if someone asks you why the leaves change color you have more than one answer to provide. However you decide to answer when asked, don't pass up an opportunity to take in the wonderful colors of fall. Read more about these color changes at the following 'helpful' references: U.S. Department of Agriculture. "Why Leaves Change Color." <http://www.na.fs.fed.us/Spfo/pubs/misc/leaves/leaves.htm> ; Handwerk, Brian. National Geographic News. "Why Do Fall Leaves Change Color?" October 8, 2004. http://news.nationalgeographic.com/news/2004/10/1005_041008_fallfoliage.html

Plant Pansies This Fall!

By Donna Aufdenberg, MU Horticulture Specialist

One fall tradition I look forward to is planting pansies. These cheerful flowers often bring a glimmer of spring in the dreary days of winter when nothing else is showing any sign of life.

Pansies are a type of *Viola* – a hybrid of different *Viola* species. They come in many colors with a variety of markings and flower sizes. There are 3 color patterns. They can be a single, clear color. They can have a dark center or "blotch" which causes them to look like they have a face. They can also have slender black lines streaking and radiating from the center like whiskers. Pansie flowers can be up to 4 inches in diameter with single or double forms.

Johnny jump-ups can be thought of as a miniature pansy (*Viola cornuta* or *Viola tricolor*). They have smaller flowers and have fewer colors to pick from.



Johnny jump-ups are more tolerant to the warmer temperatures and sometimes can be seen blooming in the landscape in the hotter months of July and August when other varieties die off.

Pansies thrive in cool weather and will bloom any time that the temperatures are above freezing. The foliage and root systems are quite tolerant of frost and freezing temperature. This is why they are so great for Missouri winters.

Typically, pansies planted in fall get a chance for better root establishment and tend to make a better show on foliage and bloom in the spring. They seem to be more tolerant of adverse conditions than those planted newly in the spring.

Pansies prefer moist, well-drained soils in sunny to partially shaded sites. Plants placed in partial shade will last longer into the summer.

October Gardening Calendar

By Donna Aufdenberg, MU Extension Horticulture Specialist

Outdoor Plants and Ornamentals

- Take time to enjoy the fall colors in the landscape!
- Container grown, B&B trees, and shrubs can be planted now.
- For best bloom later this winter, Christmas cactus, potted azaleas and kalanchoe may be left outdoors until night temperatures drop to about 40 degrees F.
- Cannas and dahlias can be dug when frost nips their foliage. Allow plants to dry under cover in an airy, frost-free place before storage.
- Transplant any deciduous trees once they have dropped their leaves.
- Old fallen leaves can harbor disease pathogens, if a tree or shrub had foliar disease problems, pick the leaves up and dispose of them.
- Fall needle shed of pines is starting to occur so don't panic if your pine looks a bit yellow. It will come out of it.
- Put tree guards on young trees to protect against rabbits and deer.
- Leaves from heavily wooded gardens can be beneficial to the garden and should not be burned or discarded. Instead, put them through a shredder and use as a mulch or add to your compost pile.



Vegetable Gardening

- Finish cleaning up garden areas. Compost only non-diseased foliage and plants. Remove all cages and stakes.
- Sow cover crops such as winter rye or winter wheat after crops are harvested and plants are pulled.
- Harvest winter squash and pumpkins before frost. For best storage quality, leave an inch or two of stem on each fruit.
- Now is a good time to soil test your vegetable garden.

Fruits and Nuts

- Persimmons are starting to ripen now, especially after frost.
- Place wire guards around trunks of young fruit trees for protection against mice and rabbits.

Turfgrass

- Don't retire the lawn mower when the grass growth slows down this fall. As long as it continues to grow, it should be mowed.
- Seeding grass seed should be finished by October 15.
- Fall is the time to control certain broadleaf weeds in the lawn including chickweed, white clover, dandelion, and wild onion.
- Keep leaves raked off lawns to prevent smothering grass.

Before the end of garden season...

Sit down quietly and reflect on this year's garden season.

Jot down what was great about this year's garden.

Jot down what was not so great about this year's garden.

Write down a couple of things you want to change about your gardening habits! (mine - don't let weeds go to seed!)

Was there anything you felt you mastered?

Make a list of garden plants you would like to plant again.

Make a list of garden plants you would like to try for next year.

Consider taking inventory of seeds.

Hickory Nuts

by Katie Kammler, MU Extension Horticulture Specialist

Some of my favorite memories of my granny involve hickory nuts. As long as I can remember, Granny would pick up nuts and crack them, be it walnuts, pecans, or hickory nuts.



Hickory nuts are my favorite and there is nothing better in the fall than a fresh baked apple cake with hickory nuts. For some reason, in Southern Illinois where Granny lived, a

lot of the cemeteries have hickory trees so we would make trips to the various cemeteries that had big old trees. Granny had certain trees that she liked because of the size of the nuts and how they cracked out. She would pay me for yard work in jars of picked out hickory nuts, a pretty good deal if you ask me!

Cracking nuts involved a piece of railroad iron and a hammer on an enclosed porch during the winter. Since she had so much practice, she could get them out in halves but since her eye sight wasn't the best, we still had to watch for shells!



My dog begging my granny to crack him another hickory nut!

Hickory is an important part of our Missouri forests, with eight native species. It is one of the most common species in everyday use. It is heavy, hard, strong, and impact resistant. It is the preferred wood for tool handles such as axes, picks, hammers, and hatchets. Early settlers used hickory for wagon wheels because of its durability. In recent years, it has become popular for furniture, flooring, and cabinets. It is desirable as firewood and also as a

flavoring in smoking meats. Then there are the nuts which serve as a food source for many species of wildlife.

Missouri hickories are divided into two major groups, the pecan hickories and the true hickories. True hickories have mostly five to seven leaflets with a large egg-shaped bud at the end of the twig. Shagbark, shellbark, mockernut, pignut, and black hickory are in this group. Pecan hickories have more than seven sickle-shaped leaflets and an elongated, flattened terminal bud. They include pecan, bitternut, and water hickory.

If you are interested in eating the nuts, not all of these are going to taste good so knowing the type of hickory is important. Of course pecans are highly edible, then the shagbark, shellbark and mockernut hickories have sweet nut meats. Black walnut and butternut are also closely related. Hickory nuts will have an easy to peel hull around them, leaving the whitish nut. These can be washed and dried before cracking, good nuts will sink and the nuts that float

to the top are bad and can be disposed of. Picked out nuts can be stored in glass jars in the freezer for years.



Granny sticking her tongue out at me while she was picking up nuts from her favorite tree, the one north of the outhouse at the cemetery!

Cool Season Favorite: Swiss Chard

by Bob and Susie Rafferty, Cape County Master Gardeners

Swiss Chard is in the family Chenopodiaceae which includes beets and spinach. We found out about Swiss chard from our son who planted it about 3 years ago in our garden. He told us it was a **Super Food!** Swiss chard packs a huge amount of vitamin A and is also high in minerals such as calcium, iron, magnesium and potassium. An excellent source of bone building vitamin K, anti-oxidants A, C, and E.

The Greek philosopher, Aristotle wrote about chard in the fourth century B.C. It was honored for its medicinal properties. Swiss chard is native to the Mediterranean (not Switzerland) and was first classified by the Swiss Botanist Karl Koch.

A biennial plant, Swiss chard produces leaves in the first year then blooms the second year. It's a cool season plant that does well all summer. We mulch our chard very heavy with leaf litter at the end of the growing season and the next spring it comes back to bloom. It requires a well-drained soil, with a ph of 6.0 to 6.8. Plant in the



Picture from Wisconsin Master Gardener Program

early spring about the time you would plant lettuce and spinach. Seeds should be 1/2 to 3/4 inch deep with 8 to 10 seeds per foot. You can thin the seedlings to 4 to 6 inches apart. When mature they will be one to two feet tall. You can harvest the chard by cutting off the outer leaves about one and a half inches above the ground.

The flavor of chard is a wonderfully sweet, salty, mineral rich flavor. The small leaves can be used in a salad or cooked like spinach. The larger leaves, with a rather fibrous mid rib can be cooked like asparagus or you can chop in 1/4 inch sections and sauté in some olive oil and garlic. It also can be used in vegetable lasagna instead of spinach. We

have used it in everything from fresh salad to vegetable soup. Some of the more popular varieties are Fordhook giant, which have a white mid-rib, Bright Lights have a multi colored stem and Orea have a golden stem with dark green leaves.

Odd Vegetables: Parsnips

by Katie Kammler, MU Extension Horticulture Specialist

Parsnips are a long season vegetable, planted in early April or May and not harvested until winter. The flavor is not fully developed until the roots have been exposed to near freezing temperatures for 2 to 4 weeks in the fall and early winter. This allows the starch in the root to change to sugar resulting in a unique taste. Seed must be obtained each spring because it has a short shelf life and poor germination is common from even fresh seed. Seeds are planted 1/2 to 3/4 inch deep and at least 2 to 3 seeds per inch to ensure a good stand.



Sometimes radishes are added in so the row can be marked until the parsnips come up. Weeds can be a problem as can swallowtail caterpillars feeding on the foliage. Side dressing with a complete fertilizer might be necessary in late June if the plants are looking light green or stunted. The roots are dug after a cold period when they are 1.5 to 2 inches in diameter and 8 to 12 inches long. Yields can be higher than a pound per square foot. They can also be left in the garden all winter if they are covered with a few inches of soil but need to be harvested before new tops and seed stalks begin to form.

Pest of the Month: Rust

By Sarah Denkler , MU Extension Horticulture Specialist

Cedar-Hawthorn Rust, Cedar-Apple Rust, Cedar-Quince Rust.....do these names sound familiar? Each of these fungi attack members of the rosaceous family and come from the genus *Gymnosporangium*.

Two hosts are required for these fungal species to live. In our area common juniper, creeping juniper, eastern red cedar and prostrate juniper plant host in winter. In spring and summer there are deciduous hosts for rust. Apple and crabapple play hosts for Cedar-Apple Rust. Quince, hawthorn, apple, pear, crabapple and serviceberry play host to Cedar-Hawthorn Rust. Apple, crabapple, cotoneaster, quince, chokecherry, hawthorn and service berry play host to Cedar-Quince Rust.

Spores are blown by wind to the juniper where galls are produced that overwinter on the plant until spring moisture induces horns. These horns release spores which are blown back to the alternate host.

Rust does not kill a tree unless repeated exposure causes a weak canopy to develop and over time reduces the vigor of the summer host.

Rust can be a serious pest to commercial pears and apples when the fruit becomes infected or when leaves are damaged causing a reduction of fruit production and harvest.

To control rust issues do not plant the alternate hosts within 2 miles of each other. If junipers are present then scout those trees if possible for the rust galls in winter so they can be pruned to remove the disease. (Remember that only trees you have access to can be scouted.)

Mancozeb and Chlorothalonil can be applied to the summer host when juniper hosts show rust with spore horns. Reapply chemical control to summer hosts every 10-14 days until the spores on the juniper dry up.



Bottom Left: Cedar-Hawthorn Rust on hawthorn fruit.
Top: Cedar-Apple Rust on juniper.
Above: Cedar-Quince Rust on juniper.
Pictures courtesy of Penn State Extension.



Group News - What's Happening

October 2014

Sun	Mon	Tue	Wed	Thu	Fri	Sat
<p>Contact your local Extension Center if you have questions about any event on the calendar.</p>			1	2 Pulaski CO MG Core Training	3	4
5	6 Parkland MG, 6:30pm @ Memorial United Methodist	7 Poplar Bluff MG Meeting 6:00pm; Mark Twain Forest Service Station	8	9 Pulaski CO MG Core Training Ste. Genevieve MG, 6:30pm @ Ste. Gen. Co. Ext. Center	10	11
12	13	14	15	16 Pulaski CO MG Core Training Cape Girardeau MG, 7:00pm @ Cape Co. Ext. Center	17	18
19	20	21	22	23 Pulaski CO MG Core Training	24	25
26	27 Perry Co. MG 6:30 pm, Perry Co. Ext. Center	28	29 MG Core Training in	30 Pulaski CO MG Core Training	31	

Upcoming Events

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

October 29 to November 19 - Master Gardener Training in Poplar Bluff. To register call 573-686-8064.

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, denklers@missouri.edu, or aufdenbergd@missouri.edu

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