For those who are interested in learning more about eating off the land, consider a native fruit that tastes and cooks like a banana. The pawpaw, *Asimina triloba*, is a small, 10 to 25 foot, tree found growing throughout Missouri. Pawpaw is often found in forested areas where the fruit development benefits from the protection and shade of larger trees. However, the pawpaw plant itself needs sunlight in order to grow well so the plant does well in areas where it receives sun most of the day. Fruit is often shaded by the large, droopy leaves later in the season.

This tree can supply a tasty treat if it is located before the other local mammals get there. The hacky sack sized fruit begin to ripen to a yellow green color in late August or early September. Locate the tree now and then check it until the fruit is soft when squeezed.

The fruit contains large seeds that are easily removed before eating the fruit raw or using it to bake bread or cookies. Before the fruit will bare, the unique flower must be present for pollination. Each flower is a dark, dried red color and gives off the smell of rotting meat. This attracts flies and beetles which provide the pollination as they move from flower to flower. The female portion of the flower, the stigma, is ready for pollination before the pollen is available in a single flower. For this reason, it is best to have two or more separate plants present to achieve pollination. Insects can be unreliable pollinators so hand pollination may be required if fruit does not develop.

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*Pictured are fruit and flower of *Asimina triloba* courtesy of the Missouri Botanical Garden.*

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- Dividing Iris
- Keys to a Good Sample or Picture
Plants with Winter Interest

Katie Kammler, MU Extension Horticulture Specialist

Trees benefit from a slightly acidic soil pH and must have well drained soil. They will not grow in wet soils. Trees can be purchased or seeds germinated if they are placed in cold storage and chilled for 70-100 days.

The larvae of zebra swallowtail butterfly, *Eurytides Marcellus*, feed on the foliage so this plant can be used to attract these delicate winged insects.

For more information about pawpaw check out the Kentucky State University [www.pawpaw.kysu.edu](http://www.pawpaw.kysu.edu).

Here are a few of the many nurseries that have pawpaw for sale.

**Hidden Springs Nursery**
170 Hidden Springs Lane, Cookeville, TN 38501
(931) 268-2592  [www.hiddenspringsnursery.com](http://www.hiddenspringsnursery.com/)

**Edible Landscaping**
361 Spirit Ridge Lane, Afton, VA 22920
(800)524-4156  [http://ediblelandscaping.com](http://ediblelandscaping.com/)

**Burgess Seed & Plant Co**
1804 E. Hamilton Rd, Bloomington, IL 61704-9609
(309) 662-7761  [https://www.eburgess.com](https://www.eburgess.com/)

**Forest Keeling Nursery**
88 Forest Keeling Lane, Elsberry, MO 63343
800-356-2401  [www.fknursery.com](http://www.fknursery.com)

**Nolin River Nut Nursery**
797 Port Wooden Road, Upton, KY 42784
(270) 369-8551  [www.nolinnursery.com](http://www.nolinnursery.com)

**Blossom Nursery**
216 CR 326, Eureka Springs, AR 72632
[www.blossomnursery.com](http://www.blossomnursery.com/)

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**Worn Out Garden?**

Donna Aufdenberg, MU Extension Horticulture Specialist

I have had several gardeners tell me lately that their vegetable gardens are worn out from too many years of gardening. If this is truly the case, then they are gardening wrong or the gardening season is to blame.

Many things can go wrong with the garden season to make one think their garden is worn out. Too hot, too cold, too wet and too dry can cause plants to perform poorly. The last two years have been challenging to say the least. It could certainly be enough to make someone question whether there is something wrong with the soil.

It’s easy for gardeners to neglect adding nutrients and amendments back into the soil which have been removed from years of growing vegetables. These gardeners have spent years and years robbing the soil leaving it depleted and plants growing poorly. Vegetable gardening can be seen as a give and take. You feed the garden and the garden will give back to you in produce.

A garden soil is “living”. It is teeming with living microbes and it needs to be taken care of. It needs to be fed by adding organic matter. Adding leaves, grass clippings, and vegetable refuse can greatly improve growing. Another way of adding organic matter is

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**Stunted and wilted green beans were common this year from too much rain.**
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.
- Begin readying houseplants for winter indoors. Prune back excessive growth and protruding roots. Check for pests and treat if necessary.
- Perennials, especially spring bloomers, can be divided now. Enhance the soil with compost and peat moss before replanting.
- Divide peonies now. Replant in a sunny site and avoid planting too deep.
- Save Seed from heirloom plants for next year. Harvest when seeds are dried and fully matured. Commonly collected seeds are coneflowers, rudbeckia, cosmos, marigold, cleome, and zinnia.
- Plant pansies for fall and winter bloom.

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.
- Sow fall cover crop in vacant areas in the vegetable garden.

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

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.

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.
Let me tell you about these wonderful carefree plants that should be planted in everyone’s shade garden! They are also known as Heucheras or Alumroot. From the genus heuchera, family of saxifrage. These wonderful plants grown mostly for their beautiful foliage, have come into their own in recent years. There are approximately 37 species. Most of them are hybrids. They are perennial (meaning they will die back to the ground during the winter months) but will re-appear in the spring. In mild zones they will stay green all winter. If planted in pots, you will need to protect them to keep them from freezing. They prefer loose soil; the crown of the plant must not be buried below soil level; and they are drought tolerant once they are well established. There are no serious disease problems. Most of them are shade loving but some of the new ones will tolerate sun. They are named for Johann Heinreich Heucher who was a German Physician/Botanist who lived from 1677 to 1747. They are native to North America. They grow from the Channel Islands of California on rocky, windy, saline-washed ocean shores, to warm and dry canyons of New Mexico and Arizona. Native Americans used them medicinally as a pain reliever. Plant them in pots, or with hostas, astilbe and ferns.

The easiest and most successful method of propagation is to divide by hand or with a sharp knife. Divide into large clumps not small ones. Spring dividing is best as they will not have enough time to develop strong roots if done in the fall. Mulch properly so that they will not rise up out of the ground during the freezing and thawing of winter.

Check out your local garden centers, or maybe a fellow gardener will share with you!

What Is It?

Can you figure out what this mystery picture is from?

Turn to page 8 to find out if you are right!
The Garden Spade

Amazing Marigolds
Donna Aufdenberg, MU Extension Horticulture Specialist

Marigolds have been a garden favorite for many years. In today’s plant market, it is amazing to see all the varieties that are offered. It is the marigold’s ease of care and beautiful striking display of color that makes it one of the most sought after annuals.

Marigold (Tagetes sp.) are native to the Americas primarily in Mexico and Central America. The earliest use of marigold was by the Aztec people who attributed magical, religious and medicinal properties to it. Early Spanish explorers are credited with taking marigold seeds from the New World to Spain. From Spain, marigold seeds were transported to France and northern Africa. The taller marigolds, now called African, became naturalized in North Africa and later returned to America (around 1760) where they were improved by plant breeders to give us our modern-day garden plant. It is so interesting to see that by 1858, marigolds were already referred to as “old-fashioned”.

The genus Tagetes contains 40 species but only two of them are of significance to gardeners: T. erecta (African or American marigold) and T. patula (French marigold). African marigold is characterized by tall plants with large leaves and large double or semi-double flowers. Flowers might reach four inches in diameter and are solid in color. The colors range from white and cream to yellow, orange and gold.

French marigold (T. patula) is characterized by dwarf, compact plants ranging in mature height of between six and fourteen inches, depending on cultivar. This species also contains the widest color range of marigolds. The flowers can be pure or solid orange, yellow, gold, mahogany red, or bi-color. Because of its small size, French marigold is often used in the front of borders or to edge beds.

Other various species of marigold have uses apart from the flower’s beauty. Flower heads are used for tea. Stems are formed into bales and used as fuel. Flowers are braided into garland and swags for weddings in India. The yellow bloom pigment (xanthines) found in petals is used in chicken feed here in the U.S.

Today’s marigolds have been bred for hardiness, length of flowering, uniformity of height and blossom size, as well as pest and disease resistance. Many of the varieties on the plant market are F1 hybrids and lack the unruly growth characteristics as well as the typical pungent odor of the foliage and blooms.

Over the years, we have been taught that marigolds are some type of “super hero” repelling insect pests of all kinds from neighboring plants. Unfortunately, little documentation exists that show marigolds actually repel insects in the way we have been led to believe. However, research has demonstrated that marigold roots do produce biochemicals that are toxic to nematode populations in the soil. Some of the harmful nematodes that can infest gardens can be reduced by growing marigolds in the soil for three to four consecutive months. After the given amount of time has been met, the marigolds can be plowed under for a green manure.

If you wish to continue to plant marigolds as companion plants for deterring insects, make sure to choose an “open pollinated” old fashioned, French marigold. The have the most pungent odor. The more pungent the odor, the greater the chance for some insect control.
Vegetable gardening has been tough this year with the huge variances in the weather from cool and extremely wet to blistering heat and drought. I think every gardener has the goal of having a productive garden every year and that starts with maintaining a sustainable soil. A good management technique is to build up and maintain the soil during the off season so it will be more fertile and productive for the next growing season. Cover crops help do this by contributing to soil fertility, building soil structure, breaking up repetitive vegetable cropping cycles, controlling erosion, suppressing weeds, reducing soil compaction, and decreasing nutrient leaching.

There are many different types of cover crops for both summer and winter growth. Small grains are the most commonly used winter cover crops. Wheat, rye, barley and oats are all very effective winter cover crops. Another advantage to these crops is that they can be harvested as forage, straw, grain, or left in the field to provide mulch and organic matter. When planted early enough in the fall, they provide good winter cover. If they are tilled in during the spring, they are also called green manures. In this case they help maintain soil organic matter and nitrogen availability.

Rye is perhaps the best overall small grain cover crop. It can be seeded from August to mid-November. It germinates quickly, grows fast and provides good winter cover. Rye is also effective at suppressing weeds. It resumes growth quickly in the spring but because of this quick growth, it may produce too much top growth if not killed soon enough.

Wheat is also an excellent cover crop but most people think of it as a grain crop. It is more versatile and easier to manage than other small grains. Seeding can begin in mid-September to mid-November but later planting may not provide good winter cover and weed suppression. Wheat does not grow as quickly in the spring as rye and is not as likely to cause problems with too much top growth.

Oats can be used as a winter cover crop but are not as effective as other small grains. They do not provide as much biomass (green growth) as wheat and rye. They are also susceptible to winter kill and start growing later in the spring. There are also winter and summer varieties so be sure to have a winter variety if planting in the fall. They are planted in the early fall. Even if they are winter killed, the residues will still provide protection for the soil but some nutrients may be lost and weed suppression will be reduced. Barley is very similar to oats in that it is susceptible to winter injury and also has problems with barley yellow dwarf disease. This is planted in late September.

When you are preparing your garden in the spring, the cover crops can be mowed off and/or tilled under to add organic matter and nutrients to the soil. They can also be used in no-till systems such as wheat that is harvested in June and a late summer crop planted into pumpkins or squash. The residue acts as a mulch to hold in moisture, reduce weeds, and keep the produce clean. Cover crops provide many benefits. With little work or investment, they are a good option to consider for your garden.
Iris have always been one of my favorite flowers. The many colors, great scent, and unique shape have always drawn me in. Most people are familiar with bearded iris but the genus includes more than 200 species, some of which are native to the US. The biggest separation in the genus is those with rhizomes and those with bulbs. Rhizome iris are the most common with bearded, Siberian, and Japanese iris falling into this category. Rhizomes are horizontally growing underground stems that store food for the plant. Dutch iris and reticulate iris have bulbs and are typically planted in the fall with other bulbs.

Why am I writing this article now, when the blooms have long ago withered away, and the heat makes us want to stay inside?? Regardless of the hot temperatures outside, there are always things to be doing in the garden. From late July through September, it is time to divide and transplant the rhizomes. Irises like the heat and typical dryness of summer and when you plant them at this time, there are less problems with bacterial soft rot. Even with our crazy rains this summer, there have still been dry times that would be perfect for dividing and transplanting. Dividing iris every 3 to 5 years helps keep the plants healthy and blooming every year.

Cut back the leaves to about one third of their height and lift the entire clump with a fork spade. Then you can use a sharp knife to separate the rhizomes. Dipping the knife in a 10% bleach solution between cuts will also reduce the chance of spreading disease. Each transplant should have a fan of leaves, a firm rhizome, and roots. Then plant the rhizomes in a sunny, well-drained location. When transplanting, cover the roots but leave the rhizome slightly exposed. If it is planted too deep, the rhizome can rot. Iris can be planted 18-24 inches apart in groups of 3 to 7 sections of one variety.
Growing Winter Onions
Rennie Phillips, Scott County Master Gardener

Worn Out Garden?
Donna Aufdenberg, MU Extension Horticulture Specialist

What Is It?
Katie Kammler, MU Extension Horticulture Specialist

Hover flies often get mistaken for sweat bees or yellow jacket wasps because of their coloration and in some cases, the buzzing noise they make. One of my favorites is called a news bee, or actually good news bee, as I found out when I looked it up. They are one of the larger size hover flies and have markings like a yellow jacket and you can hear them buzzing way before you see them. It seems like I always see and hear them when we are cutting firewood so maybe they are talking back to the chainsaw! I enjoy listening to them and seeing them hover around the woodpile. Other hover flies are noticeable when they land on you, looking for moisture and salts from our skin. Since they are flies, there is nothing to be worried about, they don’t sting or bite. Hover flies only have one set of wings and can hover in the air unlike members of the bee family. Bees also have four wings, leading to the old saying of two wings fun; four wings run. Hover flies are generally more brightly colored than sweat bees and smaller than yellow jackets. So next time you are out and about, listen for the daily gossip that the new bee shares and check to see what is hovering on your arm after working in your garden and see what the hover flies are up to.

Soil testing is a great place to start if garden problems exist!

Growing cover crops which can be turned into green manure.

Soil testing in this situation is a must! If your soil pH is too high or too low or your soil is depleted of nutrients and low in organic matter, the soil test will let you know. Soil testing should be done every 3 years. We commonly find where one nutrient is low but it is that nutrient that is causing the poor garden conditions. Once corrected many gardeners see a great improvement.

If you have been adding “amendments”, what have you been adding? Too much manure, too much wood ash, too much sand or too much saw dust can get a garden in terribly bad shape. “More is not always better!” Years of manure can lead to high salts. Years of wood ash can lead to high pH and potassium. Too much saw dust is way too much carbon.

Another problem we see is tilling for weed control. Gardeners love operating their tillers. Tilling every week or even a couple of times a month can destroy soil structure and cause soil compaction making plants not grow well. Limiting tilling to just a few times a year is a good practice to follow.

If you have questions about garden problems, one of the best things you can do is to call your local horticulturist. It’s good to be able to talk and hash out some of the garden issues. We see many problems that come across our desk and you can count on if we don’t know the answer, we will surely find it out for you!

Soil Testing is a great place to start if garden problems exist!
Upcoming Events

The following Master Gardener meetings are held each month. All are welcome to attend. Please contact your local extension office to confirm location if you did not attend the previous meeting.

Parkland MGs - 1st Monday at 6:30pm, Horticulture Classroom at MAC, Park Hills
Poplar Bluff MGs - 1st Tuesday at 6:00pm at First Episcopal Church in Poplar Bluff, MO (Do not meet in January)
Ste. Genevieve MGs - 2nd Thursday, at 6:30pm, Ste. Gen. County Extension Center
Cape Girardeau MGs - 3rd Thursday at 7:00pm, Cape County Extension Center in Fall and Winter and Shawnee Park Center in Spring and Summer. Call 573-238-2420 for questions
Perry MGs - 4th Monday at 6:30pm, Perry County Extension Center

SEPTEMBER

6 - Landscaping with native and pollinators in mind – Madison County Extension Center at 6:30 p.m. Call (573) 686-8064 to register.
10 to 17 - SEMO District Fair at Arena Park Fairgrounds in Cape Girardeau, MO
13 - Fruit Production – Shawnee Park Center in Cape Girardeau – 6 p.m.
15 - Insects in the Garden at the Butler County Extension Center in Poplar Bluff, MO. Fee $10. 4-7pm. Call (573) 686-8064 to register.
20 - Master Gardener Core Training begins in Jackson at the Cape Girardeau Extension Center from 9am until noon.
23 to 24 - East Perry County Community Fair
26 to Oct 1 - Butler County Fair at the Black River Coliseum in Poplar Bluff, MO.
27 - Getting the Garden Ready for Winter – Shawnee Park Center in Cape Girardeau at 6:00 p.m.

21st Annual Master Gardener Conference.

Three day conference beginning on Friday, September 16th features unique tours, continuing education classes, adv. Ed classes, fabulous food, local vendors, silent auctions, door prizes and much more. For more information, visit...

www.mggkccconf.com

Master Gardener Core Training Classes

Jackson, MO
Tuesdays and Thursdays
September 20 to October 27, 2016 from 9 a.m. until Noon
Where: Cape Girardeau County Extension Center in Jackson, Upper Level
Cost: $165 each person

Please register for this Master Gardener Core Training before September 13, 2016 by contacting Donna Aufdenberg at 573-238-2420.

More information can be found at http://extension.missouri.edu/bollinger/mastergardener.aspx
As horticulture specialists in local extension offices, we get many samples for diagnostics walking through the door. The quality of the sample is often instrumental in determining how well we are able to answer the questions associated with it. Questions about samples usually range from what is it, what is wrong with it, or how do I get rid of it?

Sample tips…

- For plant identification samples, we like to see flowers or seeds AND branches that show the leaf arrangement. A single leaf can be very hard to identify.

- The sample that has ridden around in a hot car all day or the back of a pickup makes for a difficult id. If you know you can’t make it to the office with a fresh sample, press it between some newspaper in a book with the leaves flat. That way the leaves don’t curl up.

- Insects that have been smashed are also hard to identify. Dead or live insects are fine so long as they are contained in some way. Baby food jars, baggies, or plastic containers are commonly used.

- In the age of cell phones, we get a lot of pictures through email or people flashing them at us on their phones. Focus is important. If you are wanting an accurate identification, a close-up of a leaf, flower, or bud is helpful, along with a picture of a branch. It is wise to also include a picture of the entire plant.

- The more information that you can give us, the better we will be able to determine what the plant is or what is wrong with the plant.

- If the plant has something wrong with it, take pictures of both the top and the bottom of the leaves along with the stems. Once again, it is wise to also take a picture of the entire plant.