



# THE GARDEN SPADE



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

## Try Something New for the New Year!

By Donna Aufdenberg, MU Horticulture Specialist

With the start of the new year upon us, many of us make resolutions to change or make improvements in our lives.

You might consider these resolutions for the gardening year:

- Many of us count on buying transplants every year from the garden center. Try your hand at starting your own seeds. If you need to purchase seeds, better start looking because seed starting time is right around the corner!
- Consider starting a new flower bed. Plant flower varieties that you have not tried before!
- Consider starting a lasagna garden. These gardens consist of compost and layering browns and greens to make a "soil-less" mix that is easily planted into and harvested out of!
- Consider trying a new variety of a crop you already grow or you might try a new crop. I have been wanting to plant edamame and maybe this is the year I will try it.
- Out of sight is out of mind! Try planting herbs and lettuces in containers on your back porch. It is much easier to remember to

harvest when it is within sight and reach right out your back door.

- It is so easy to dispose of vegetable scraps in the garbage. Consider starting a compost pile or bin. It is a great way to decrease the trash as well as a great way to feed the soil once the compost is incorporated into the garden.
- Try your hand at garden journaling. Journals are a great way to plan your garden as well as keep track of what goes on during the gardening year.
- Consider adding a small greenhouse to your gardening life. Greenhouses can be a lot of work but they can also be very rewarding especially when all your garden transplants have been grown in it.
- Most of us could use a refresher class! Attend a garden program to increase your knowledge. Master Gardener trainings, spring garden seminars and workshops are being scheduled in your local area. Contact your local University of Missouri Extension Center for more information.



January 2015

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# Organic Practice: Soil Health

By Donna Aufdenberg, MU Horticulture Specialist

One of the most important practices in organic gardening, whether it is in the home garden or in commercial production, is the management of soil health. Soil health is the basis for good plant growth and good harvest yields.

**What is a healthy soil?** The terms “soil quality” and “soil health” can be found throughout the internet and books. Essentially, the terms are similar and can be used interchangeably. A quality or healthy soil is one that has good soil tilth, sufficient depth for roots, can readily absorb water but has good drainage, can support plant and animal life (micro-organisms and soil dwellers), has small population of plant pathogens and insect pests and is free of toxins that will harm plants.

## How do I maintain a quality/healthy soil?

First and foremost, soil test every 2-3 years! A soil test will give the pH, phosphorus, potassium, calcium and magnesium levels.

Add organic amendments to improve the soil through improving water infiltration, soil tilth, increases drainage in clay soils, supplies plant nutrients and improves the physical conditions of the soil. There are a number of amendments to add to the soil: peat moss, manure, humus, compost, grass clippings, leaves, etc. In addition to the amendments, during the growing season, take



advantage of grass clippings, leaves, vegetable scraps, or any green or brown organic material that may come your way. Start a compost pile that can be added to your garden soil at the end (or beginning) of the gardening year.

Practicing crop rotation between families in the garden or field will help to prevent disease pathogens and insects. It will also help with the nutrient balance during the planting season.

Plant a cover crop that can be sown in the garden when it is fallow or in between crops. They cover the soil, prevent erosion, improves the soil tilth, aeration and structure. Once sown, most cover crops will need to be incorporated into the soil or mowed to lay on top of the soil when it has reached 6-10 inches tall. Cover crop such as winter wheat or winter rye can be planted once the crops have been removed in fall. Summer cover crops such as buckwheat can be planted once spring crops such as broccoli, lettuce or cabbage have been removed.

Finally, limit your roto-tilling. Tillers can do a lot of damage if used too much. Tilling should be limited to a couple of times each year to incorporate plants residue, amendments or creating seed beds. It is important to remember that tillers can be greatly overused and can destroy soil structure in minutes what took years to build up.

## THINK LIKE A ROOT!

If you were a root, what would you like from an ideal soil? Surely you'd want the soil to provide adequate nutrients and to be porous with good tilth, so that you could easily grow and explore the soil and so that soil could store large quantities of water for you to use when needed. But you'd also like a very biologically active soil, with many beneficial organisms nearby to provide you with nutrients and growth-promoting chemicals, as well as to keep potential disease organism populations as low as possible. You would not want the soil to have any chemicals, such as soluble aluminum or heavy metals, that might harm you, therefore, you'd like the pH to be in a proper range for you to grow. You would also not want any subsurface layers that would restrict your growth deep into the soil.

~From *Building Soils for Better Crops, Sustainable Soil Management, SARE*

# January Gardening Calendar

By Donna Aufdenberg, MU Horticulture Specialist

## Outdoor Flowering Plants and Ornamentals

- Gently brush off heavy snows from tree and shrub branches.
- To reduce injury, allow ice to melt naturally from plants. Attempting to remove the ice may damage plants further.
- Limbs damaged by ice or snow should be pruned off promptly to prevent bark from tearing.
- On warm days, check to see if any perennials have been heaved by freezing and thawing of soil. Firmly press down any that have lifted and cover with at least 2 inches of organic mulch.
- Plan herbaceous flower beds now. Changes can be made early in the spring.

## Indoor Plants

- Wash the dust off of house plant leaves on a regular basis. This allows the leaves to gather light more efficiently and will result in better growth.
- Start new plants from cuttings to revive overgrown plants.
- Try not to over-water plants during the winter months. Always check the soil for dryness before watering.
- If plants seem to dry out too fast, make sure they are sitting away from areas near heat vents or draftier areas.

## Vegetable Gardening

- Review your vegetable garden plans. Perhaps a smaller garden with fewer weeds and insects will give you more produce.
- As seed and nursery catalogs arrive, think of crops and varieties that you want for the upcoming garden season.
- Analyze last year's planting, fertilizing and spraying records. Make notations to reorder successful varieties, as well as those you wish to try again.
- Before ordering new seed, do germination tests on seeds to see if the seeds are still viable.

## Miscellaneous

- Take time now to relax and read all of those horticultural magazines and garden books that were put aside during the busy holiday season.
- Draw a map of your garden and make copies of it. Beds usually stay in the same place year after year, but the crops rotate each year. Each year, take a clean copy of the plan and fill it in and use the back of the plan to record notes. Keep each year's plan in a three-ring binder for easy cross-checking of varieties, rotations, etc.
- It is time to start thinking FRUIT TREE MAINTENANCE. Plan to prune your trees and apply dormant oil in the next couple of months.
- When spraying fruit trees, make sure that you spray the whole tree and not just the part that you can reach.

## Top Performing Native Plants for Landscaping

Shining Bluestar  
(*Amsonia illustris*)

Butterfly Milkweed  
(*Asclepias tuberosa*)

Aromatic Aster  
(*Aster oblongifolius*)

Purple Poppy Mallow  
(*Callirhoe involucrata*)

Copper Iris  
(*Iris fulva*)

Beautyberry  
(*Callicarpa Americana*)

Serviceberry  
(*Amelanchier arborea*)

Winterberry holly  
(*Ilex verticillata*)

Purple Coneflower  
(*Echinacea purpurea*)

Indian Pink  
(*Spigelia marilandica*)

Wild Ginger  
(*Asarum canadense*)

\* \* \*

Complete List can be found at Missouri Botanical Garden Website  
<http://www.missouribotanicalgarden.org/Portals/0/Shaw%20Nature%20Reserve/PDFs/horticulture/NLM%20Ch4.pdf>

# Damping Off

by Sarah Denkler, MU Horticulture Specialist

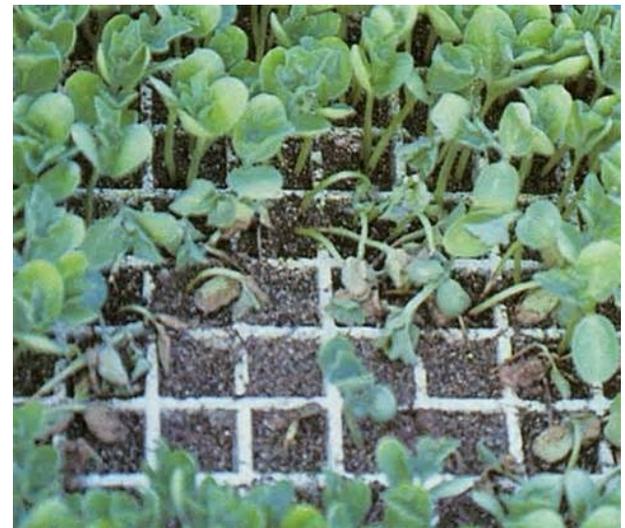
When starting seedlings, whether indoors or out, it is very important to be on the lookout for damping off. This disease develops in plants from fungi. *Pythium*, *Phytophthora*, *Rhizoctonia* and *Alternaria* are common fungi that cause this disease in Missouri although there are other responsible pathogens.

Check seedlings often and look for the following: seedlings may be spindly or elongated. An hour glass shape or indentation may appear in the stem at the soil line or below the cotyledons. The stem may be discolored and look like it is rotting.

Once these symptoms appear, reduce water and remove infected plants. Once infection sets in the plant may die quickly or it may linger. Those that linger will not be as healthy and may contribute to the spread of disease or may become infected later on with other diseases due to poor development when young. If damping off is present above the soil line there is a good chance that root rot is developing below the soil line and contaminating the soil. This is why new soil should be used each time seeds are germinated indoors. If watering from above the fungi may spread as water splashes from plant to plant. If an old container or seed tray is used, it may have the contamination already and start the cycle again. Make sure to use clean tools, pots or trays when starting seeds.

Remember that a disease needs a host, a pathogen and an ideal environment. For damping off this environment is usually moisture. As it spreads it may appear randomly on plants in a tray or it may wipe out an entire tray.

This can happen from too much humidity or too much water. Domes are often used to create a humid environment to germinate seeds. As soon as the seeds have germinated it is important to remove the dome to decrease the humidity and the chance for fungal infection. Monitor soil moisture carefully to prevent over watering.



Top picture: *Damping off in seedlings caused by Pythium* courtesy of [www.missouribotanicalgarden.org](http://www.missouribotanicalgarden.org)

Bottom picture: Very defined area of damping off in seeding tray courtesy of [aggie-horticulture.tamu.edu](http://aggie-horticulture.tamu.edu)

# Pruning

By Katie Kammler, MU Horticulture Specialist

Pruning is the judicious removal of shoots or branches of a plant to increase its economic value.

Pruning plants allows you to:

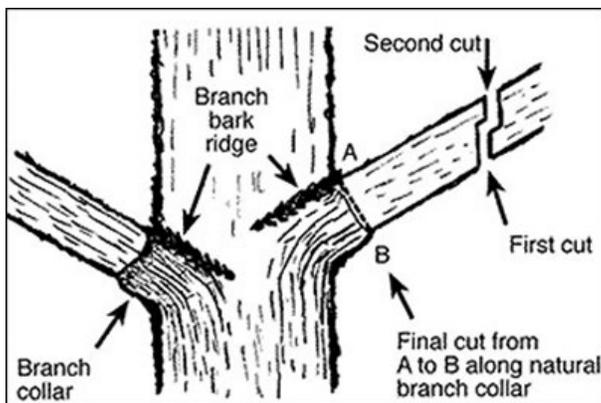
- Improve survival chances at planting time
- Control size and shape, remove dead, diseased, weak or broken branches
- Sun and air penetration
- Maintain natural beauty
- Direct growth to utilize space efficiently
- Rejuvenate old plants
- Control flowering, fruiting, or colored twig effect in certain plants

The best time to prune is during the late winter or early spring, just before active growth begins. This is the best time to prune for several reasons:

- Wounds heal quickly when growth starts
- Undesirable branches can be seen easily without leaves to cover them
- The bark is less likely to tear when cuts are made
- The exception to this rule is spring flowering shrubs, because pruning can remove the flower buds. Prune these plants after flowering.

The following types of growth should be removed when pruning:

- Water sprouts and other vertical growing shoots
- Branches growing in toward the center of the tree



- The weakest of branches that cross over or rub other branches
- Downward growing or drooping branches
- Weakest of closely parallel growing branches
- Long slender growth in the inner part of the tree

There are many options for pruning tools. Use the one

that is best suited to the branch you are pruning. The key is to make sure your tools are sharp so you can make clean cuts. Cuts that result in bark tears, stubs, or a jagged surface are slow to heal, or they may not completely heal over.

This is just an overview of basic pruning. Ornamental trees and shrubs are pruned a little differently than fruit trees, grapes and brambles. If you have questions on pruning a specific plant, contact your local extension specialist.

## Horticulture Term: GMO

By Katie Kammler, MU Horticulture Specialist

GMO—Genetically Modified Organism—We hear this term a lot in the news now days but do we really understand what this means? It is easy to google the term and come up with thousands of hits on both sides of the controversial topic. Simply put, a GMO, is usually a crop plant that has had its DNA altered to enhance desirable traits. These desirable traits include increased resistance to insect and disease damage and improved

performance in the field. Because of the controversy surrounding GMOs, it seems there is much emotion brought on by the mention of the topic, I encourage people to look at research based information and think about the situation analytically.

<http://hoke.ces.ncsu.edu/2013/08/whats-the-deal-with-gmos/>

# Watering House Plants

by Sarah Denkler, MU Horticulture Specialist

Each year information is provided on the care of house plants. While it may be repeated from year to year, research shows that repetition of information helps to remember it. Whether you are new to indoor plants or a seasoned indoor gardener, read on and refresh your memory.

The biggest killer by far for indoor plants is poor watering. This can be done with too much or too little water with the symptoms often appearing identical in each case making it hard to tell from looking which is the real problem.

The most reliable way of telling if a plant needs water is to stick your finger into the soil. Don't just touch the surface but put your finger into the soil. The soil surface in a pot often forms a crust that may or may not be apparent by looking. The surface can dry out quickly while the rest of the soil may still be moist. Only by breaking

the surface will you truly be able to tell what is going on.

If a plant is receiving too little water then you may notice problems of browning on the leaf tips or margins, wilting or pale and weak foliage. Plants may become stunted in growth

with small leaves and long internodes, they may not bloom or the lower leaves may become yellow and fall off.

Plants that receive too much water may also be stunted in growth from root rot. This will also cause plants to wilt and the lower leaves to yellow and drop. Spots may

begin to form on the plant due to fungal infections in soil and roots. Plants that are stressed in this way may not bloom.

The picture demonstrates digging around in soil to find out how wet it is. Although it may look dry this soil was actually damp. Notice the yellow in the leaves.



Cause	Problem
Cold water	Brown or yellow leaf spots
Too little water, lack of humidity	Browning of leaf tips or margins; Foliage pale and weak; wilting; lower leaves yellow and fall; plant is stunted; small leaves, long internodes; no blooms
Too much water (root rot)	Plant wilted; lower leaves yellow and fall; plants stunted or drooping; small leaves; root rot causes rapid defoliation or spotted foliage

# 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, Memorial United Methodist, Farmington, MO

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

Perry MGs - 4th Monday at 6:30pm, Perry County Extension Center

## January

8 to 10 - Great Plains Growers Conference and Trade Show in St. Joseph, MO

22 - Hands-On Tree Pruning Workshop, Beggs Berry World, 190 Hwy 332 in Benton, MO. (Bring Your Own Pruning Tools)

24 - Beginning Beekeeping Class, 8:30 a.m. - 1:30 p.m., Mineral Area College, North College Center

30 to 31 - Ag Expo, Black River Coliseum in Poplar Bluff, MO

## February

7 - Beginning Beekeeping Workshop, 8 am to 4 pm at the Butler County Extension Center in Poplar Bluff, MO

13 to 15 - Midwestern Herb and Garden Show at the Times Square Mall in Mt. Vernon Illinois

24 - Master Gardener Core Training at Butler County Extension Center in Poplar Bluff, MO

## April

16 to 19 - Dogwood Azalea Festival in Charleston, MO



## Beginning Beekeeping

Saturday, February 7, 2015

8:00 a.m. to 4:00 p.m.

Butler County Extension Center  
222 N. Broadway Poplar Bluff, MO

Fee of \$15.00 includes lunch

Please register for this event by  
February 2, 2014.

To get more information or pre-register call the Butler County Extension Center at 573-686-8064.

## Fruit Tree Pruning Workshop



Thursday, January 22, 2015

10:00 a.m. to 2:00 p.m.

Beggs Berry World, 190 Hwy 332  
Benton, MO

Bring pruning tools. Wear appropriate clothing for the weather. Wear a hat. Bring a chair if you need to sit.

Pre-register by calling the Scott County Extension Center at 573-545-3516.

Limited to the first 20 People.

## Time To Turn In Your Volunteer Hours For 2014!!



Master Gardener Reporting forms can be found at <http://mg.missouri.edu/mgforms.htm>

Online Reporting can be found at <http://report.missourimastergardener.com/>

## 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 month's news.

Email news to: [kammlerk@missouri.edu](mailto:kammlerk@missouri.edu), [denklers@missouri.edu](mailto:denklers@missouri.edu), or [aufdenbergd@missouri.edu](mailto:aufdenbergd@missouri.edu)

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