It is not too early to start thinking about fall chores, such as aeration and fall fertilization. Aeration is the very best way to begin a fall fertilization program. Applications of fertilizer after aeration will move nutrients immediately into the root zone of your lawn. This practice has shown excellent results in the density and color of cool-season turf grasses on their way to recover from summer stresses.

An aerator that pulls a ¼-inch diameter plug three to four inches deep on four inch centers will do an excellent job. Machines that force hollow tines into the soil are better than pull-type drums with tines.

Fall fertilization should always start with a soil test to determine what the needs of the soil are, if any. A soil pH between 6.0 and 7.0 is acceptable. A soil pH around 6.4 to 6.8 is optimum. MU guide #G6954, “Soil Testing for Lawns”, gives information on how to take and submit soil samples.

Homeowners have a wide variety of fertilizers available to them for fall fertilization. Many organic fertilizers such as Milorganite, Sustane and Ringer will provide an excellent source of slow released nitrogen. Organic fertilizers do require soil microbes to release nutrients, therefore, as soil temperatures decrease by late Fall, performance of these fertilizers may drop off.

More inorganic types of fertilizers are available to homeowners and can be somewhat confusing. Quick release forms of fertilizers are there and gone after about two weeks. Find fertilizers with a good balance of N-P-K (nitrogen/phosphorus/potassium), with a ratio somewhere around 3-1-2. Also, look at the ingredient label on the bag and find a product with 30% to 70% slow-release nitrogen.

Fertilizer rates for fall fertilization give best results if 2.5 to 3.0 lbs of nitrogen can be applied per 1,000 square feet. Amounts should be divided over two to three applications throughout the fall. Most fertilizers are complete fertilizers including phosphorus and potassium; therefore requirements for those nutrients should be based on soil test results. Soil test results indicating high to very high amounts of phosphorus and potassium may require applications of fertilizers with nitrogen alone.

Winterizing fertilizers are usually recommended as the final application of the fall. Good winter fertilizers will have higher and equal amounts of nitrogen and potassium (first and third numbers of the fertilizer components). However, there are conflicting comments about applications of potassium for hardening off plants before winter dormancy. Plants harden off by reducing the amount of water in the plant cells, therefore reducing the threat of winter freezing. It is a practice of higher importance for warm-season (Bermuda and zoysia) grasses as opposed to cool-season grasses.

Editor’s notes: The above article is excerpted. Mr. Fresenburg’s entire article can be accessed at http://ppp.missouri.edu/newsletters/megindex.htm dated August 6.
Our home is surrounded by woods, and this has presented many wonderful opportunities to commune with nature on many levels. Nevertheless, the time arrived when our woodland friends discovered the leftover cat and dog food abandoned by our well fed pets. Visitors began to abound—raccoons, opossums, other stray cats and dogs, etc. What to do? In sheer desperation, we finally purchased a humane trap in an attempt to alleviate the situation.

Since I was the early riser in the family, I was always the one to check the trap and see what might have visited us during the night. I was always grateful when the trap was empty. Seeing these little critters looking so forlorn, I would always give them some extra food while waiting for my husband to appear, put the trap on the back of his truck, take them to another area, and set them free. And so it went, almost at times becoming a daily ritual.

Then came the morning when I went to check the trap, and to my great surprise, there resided a perky, little skunk calmly eating breakfast. Well, this appeared to be a dilemma of no small proportion. My husband had no solution preferring to let me handle the situation. Quickly, I surmised a solution. I'll call the Conservation Department. They have always helped me in the past. “Hello, I have a skunk in a trap, and I don’t know what to do with it.” “Let me put you through to Dave,” said the voice on the other end. As I waited for Dave to pick up the phone, I felt certain that he would immediately send over a skunk retriever to take care of my problem. Well, without hesitation, he informed me that skunk retrieval was not on their list of job duties. However, he assured me that he could help me with my dilemma.

Here was his suggestion: Just take a sheet and without letting the skunk see you, slowly place it over the entire trap. Keep the trap covered until you are ready to release him. Then you can carefully open the trap, and he will escape without spraying you. “Well, Dave, I’ll try your suggestion, but rest assured if he sprays me I will be sitting in your office until the smell dissipates”, I said. He laughed a hearty laugh, and our conversation ended.

When I related this plan to my husband, he quickly surmised that I would be the best one to put the sheet over the trap. He graciously offered to put the trap on the back of the truck and ultimately set him free.

With fear and trepidation, I placed the sheet in front of me. Walking ever so slowly towards the cage, I gently placed the sheet over it. Success, I still smelled normal. Returning shortly with an empty trap and no apparent untoward odor, I knew my husband had successfully released the little creature.

I had hoped that this would be an isolated incident; however, this was not to be the case. Over the next several weeks of that summer, almost every morning, I was greeted with yet another skunk. The ritual continued. The thought did occur to us that this actually was the same skunk just making return visits or perhaps the word got around about the supply of free food.

I did have to congratulate myself that we never once got sprayed for all of our encounters. I must admit that Dave’s advice did prove to be sound, and most importantly, I didn’t have to spend my summer sitting in his office sharing the scent with him.

Skunk Facts:

- There are four different kinds of skunks found in the United States.
- Skunks are placid, retiring, and non-aggressive. They try not to get in harm's way.
- They are primarily nocturnal and usually solitary.
- They eat mostly insects, many of which are pests to human; they will also eat some plant material.
- Breeding usually occurs in late winter or early spring. Gestation averages 60-74 days.
- The skunk's main defense is a complex chemical substance that includes sulfuric acid that can be fired from either one of two independently targetable anal glands. Because of this, skunks will stand and face a threat rather than run away.
- Skunks can carry rabies, but not all skunks are rabid.
- Each year untold numbers of skunks are killed because someone is afraid of getting sprayed yet those who are familiar with skunks know that it takes a lot to get sprayed.
Following our visit to the Winding Brook Estate, Kerri Kempter invited us to her home in a subdivision adjacent to the lavender farm.

Kerri repeatedly warned us that her garden was a “garden in progress.” Consequently, I for one didn’t know what to expect. After all, aren’t all “gardens in progress”? But, when we arrived at Kerri’s home I think we all concluded she definitely underrated her achievements. A water garden forms the entrance to a shaded backyard with its terraced theme gardens. Kerri, who does all the work herself, well maybe with a little help from her husband, Marc, who also works in the family business.

Kerri is faced with some challenges in achieving her gardening goals: her three sons like to use the backyard to shoot baskets with their friends and the family’s three dogs love to go after the moles. Now that can’t be all bad if they just didn’t leave those darn holes.

After touring the garden, we enjoyed refreshments on the Kempter’s backyard patio.

There are five species, the most common being Angustefolia (English lavender) and Intermedia. Intermedia was developed by a Frenchman when a native lavender plant became diseased. Another specie, Provence, is used for culinary purposes and compliments chocolate. Like wine grapes, the fragrance and color of lavender can be affected by climate and other environmental conditions.

Lavender is a very versatile plant. It has antibacterial, anti-inflammatory and anti-fungal properties. It repels insects and for some enhances sleep, simply spray it on your pillow. It is currently being studied as a possible treatment for breast cancer. And don’t forget its culinary uses.

To learn more about this very versatile plant and Deborah Nathe’s farm you can go to her website: www.WindingBrookEstate.com.

A Garden in Progress
Rosalie M. Laune, Franklin County Master Gardener

Our July field trip took us to Winding Brook Estate in Eureka, a lavender farm owned and operated by Deborah Nathe and her husband. Deborah became interested in lavender while she lived in California and had a friend who was growing it commercially. When she returned to Missouri, she decided to start her own farm on a property that had been in her family for many years.

Lavender is a Mediterranean plant, which likes full sun, wants well drained soil, requires no soil amendments and thrives in harsh dry climates. It can tolerate a little morning shade but must have good afternoon sun. Right, not exactly a Missouri climate, which Deborah learned last year when she experienced the devastating loss of 1,000 of her 8,000 plants due to excessive rainfall.

This summer has presented similar challenges. Too much moisture causes fungal disease and root rot. Lavender, which has a long tap root, thrives in sand and gravel. However, Deborah plants in white rock to add lime to the ground, thus maintaining a neutral pH between 6.8-7.5.

Weeding is important, because weeds prevent air circulation, thus holding moisture on the leaves. This year, Deborah started using black paper in her rows to keep down the weeds.

Lavender, a chemically complex plant, is deer and rabbit resistant. It is in the mint family, but is not invasive.
If I had to choose a favorite thing in any landscape design it would have to be the trees. Their presence can change the appearance of your property drastically and even more so as they mature. Old timber stands are hard to find anymore and new home construction always seems to clear away any standing trees, leaving nothing standing but the new home.

I have the pleasure of living on a longtime family farm here in Franklin County and I truly appreciate the gift of large trees. Their value to our property, as well as the aesthetics of their beauty is so important to what this farm is.

But all of that can change rapidly here in Missouri. It is happening all across the United States and spreading rapidly. Many of our native trees are being threatened. In the past, it was the Chestnut blight that killed billions of chestnut trees and many of you can remember the Dutch Elm Disease (DED), which killed millions. DED was a fungus spread by the elm bark beetle and affected all elm species. The new threats of today’s tree are the Emerald ash borer (EAB) and Oak Wilt.

Below our lake we have a massive ash tree and from all reports it will not be long before it will come to the demise of the ash borer. Just this spring I transplanted one of it’s seedlings to a new location in hopes of a future majestic tree. Then I began hearing about the impact of the EAB. On July 29, 2008 Mo. Department of Agriculture reported the first detected EAB in the state. The destruction of this invasive species, a native to Asia, is expected to be 7.5 billion trees nationwide. This is said to be the entire genus of North America. What a horrible thought.

Shortly after my husband had planted soybeans this spring we took a ride down the road to check on their progress when I began to notice a drastic change on the ridge that follows the creek above the bean field. Dotted here and there among the canopy were varying degrees of brown tops. Some were barely noticeable while others seemed totally brown and yet others were dead. As we got closer it was easier to determine that it was a particular species of tree. Almost all of the oaks on that ridge had some stage of this coloration. The opposite ridge did not exhibit the same damage; it was green and lush as it should be that time of year. There were a few trees along the road that were beginning to turn brown. In only a few weeks time this had gone from not being noticeable to being obvious that something was amuck.

I began my research on line and spoke to those working in the nursery field. I was made aware of the culprit, Oak Wilt that can quickly kill an oak tree. It is a fungus that is spread through the root grafts of various oaks or carried by a sap beetle which enters a tree at a damaged area. Oak Wilt affects all of the oak species with varying degrees but death is the end.

Other than the Eastern Cedar the Oak tree is what makes up our surrounding woods and the thought of losing that many trees is depressing. The vast amount of wildlife that relies on acorns to see them through the Missouri winters is heartbreaking. I still do not have confirmation that it is Oak Wilt but according to all the info it’s what adds up. I will be taking a sample to The University Extension Office for confirmation. This ridge is not our property, but it is what I see when I look down the valley and I can see it creeping over the next ridge.

What can be done? On this scale, not much, for the remaining trees are doomed. I can prevent its spread by not transporting firewood from these trees into other areas. What about the large oaks on my property? It is too expensive to try and treat this fungus and there are no guarantees. Oak wilt can be stopped from reaching specimen trees or an adjoining tree line by digging a trench between trees that are spaced farther apart by lessening the chance of being spread by the root grafts. That will not stop the sap beetles. If you do not prune your oaks in the spring, but only in the fall if needed, that will not allow an entry place for the beetle. Storm damage is something we have no control over and I feel a lot of this can be attributed to that, as well as the close relationship of the oaks on these ridges. Many roots intertwine in such an environment and these root grafts are formed, and its path is noticeable.

EAB and Oak Wilt both kill the host tree in the same manner. The trees can no longer take up nutrients and water. The EAB larva will girdle the ash tree, and the oak tree in self defense, reacts to the fungus by plugging up the cambial layer thus stopping the vital flow. Preventing the spread of EAB, and Oak Wilt seems almost impossible, but you can reduce the impact by taking these measures. Death by EAB is generally 2-3 years. Oak trees in the red oak family usually die in a single season, where the white oak family it may take several years. But death is eminent.

(Continued on page 5)
What’s happening to My Trees? (continued from page 4)
Mary Pursley, Franklin County Master Gardener

For EAB:
- Purchase firewood at or near your campsite.
- Do not bring firewood back to destination after a camping trip.
- Inspect firewood. Make sure it has no bark at all or signs of infestation.
- Treat already infested trees or prevent future infestation.
- Know the signs or symptoms of the borer.
- For ash trees you wish to keep alive, consult a State Certified Horticulturalist for treatment options.
- Direct injection to the cambial layer has proven effective.

For Oak Wilt:
- Prune only in the fall and apply a wound dressing or paint.
- Raise public awareness of pruning during susceptible periods.
- Use trench barriers for root graph disruption and chemical disruption.
- Remove infected wood by debarking, chipping, or splitting.
- Dry wood before the spring following the trees death.
- Do not store firewood near healthy oaks

As our world continues to get smaller and the import of new and different products continue to change our environment it is up to us to keep informed of the dangers that threaten the gifts around us. Stay attuned to nature, continue to nurture our surroundings. Trees are for future generations to enjoy as well. How can we do that? We can stay abreast of the new and upcoming disease resistant cultivars. The Elm is being hybridized to resist the deadly fungus. Parasitic wasps are being researched for the eradication of the ash borer. Technology is on it and all is not lost!

References:
http://en.wikipedia.org/wiki/Oak_wilt

From Matt’s Desk

Two older houses across the street from our office were torn down in the four years we have been in this space. The first was taken down in about 30 minutes with a track hoe machine then placed in a truck to be hauled away. The second home was taken down this summer, after being used by the local fire department for training activities. In this case it was taken apart nearly board by board. The person doing the job has invested a lot of time and salvaged materials from the demolition work.

Two houses removed: two different approaches.

As Master Gardeners you probably are asked questions, or are asked to consider taking on a project that may have more than one answer/way (or approach) that could be used. A number of variables could enter into your method for helping someone.

You may try to find out where they are in their horticulture journey to assess their knowledge and/or experience. If someone asks you to help with a project you likely will try to find out as much as you can about the project and the goals of the organization. No two people will approach a question or project the same way. Ultimately you are trying to use the knowledge and skills you have gained as a Master Gardener to enhance the lives of Missourians.

I look forward to seeing you at Master Gardener events this fall.

Matt
Earth (dirt) and my garden give me great pleasure. In spite of having attended the Master Gardener course, I know very little. Experience is the best teacher, however, so let me tell you what I learned from my garden this summer and what I earned an “A” on and what I earned an “F” on. And hopefully, we can all use this knowledge to help others in our community with their vegetable gardens.

My first “F”: From now on, I will only buy “quality” seed. I bought $0.10 packaged seeds at a mass marketer. I bought many packs since they were cheap and I planted them all. I think I had about five zinnia plants growing and I could fit my beet crop into a two cup measurer. That old adage is for real, “You get what you pay for”. With only one crop a year, you can’t make mistakes!

My Second “F”: I will never mix fresh manure, mulch, compost, or whatever it’s called into my “ready to plant” vegetable garden. Mulch in an ornamental bed keeps the weeds down by smothering them and also by creating a high nitrogen soil environment. “Fresh” has too much nitrogen in it and the plants either won’t grow, or grow slowly. Purina was selling compost, not mulch. So, I mixed it into the dirt at a 50:50 ratio.

Shortly after I planted, the Master Gardeners toured the Purina Compost Facility and Matt sent us a chemical breakdown on the product. Since I had already planted, I paid little attention to the data and my gardening results were not what I wanted. Some of my vegetable plants grew at low average rates and some grew at poor rates. None grew at a normal rate and growth was in a striated pattern in the garden. Of course, since I had poor growth, I also had poor production.

As the summer wore on, growth rate did improve, but production stayed down. Since all other variables, besides the added “compost” were the same as last year, I can only conclude that there were areas of nitrogen+ and nitrogen++ in the soil, leading to poor growth/production.

My First “A”: I will always plant my vegetables in photo black plastic mulch. I never have much time for weeding so for $77.60 I purchased a 4’ X 2400’ roll of 1 ml. embossed black photodegradable mulch plastic from E&R Seeds (1356 E. 200 S., Monroe, IN 46772, Ph: 866-510-3337).

I held the plastic down with a 9” piece of bailing wire, (which rusts and thus holds in the soil very well), shaped into a “U”. I placed three of these U’s on each end of the plastic row and one every 5’ along the sides. I placed bricks on the plastic in areas which caught the wind.

The planting process went like this: I laid a soaker hose down and placed a strip of plastic the length of the row over the hose. Planting on both sides of the plastic, I cut a “X” into the plastic and used a bulb digger, or small trowel to remove the soil where I wanted to place a plant (tomato, cabbage, pepper, etc.). For planting seeds, I cut 3’ cigar-shaped strips out of the plastic at alternate sides and spread the seeds in these cigar-shaped open areas of dirt.

The plastic held in place, and only a few weeds grew in the areas open to the sun. Once the plastic started to decompose, (about 60 days after initial exposure), I still did not have weeds come up where the plastic had laid . . . the weed seeds must have been killed by the heat generated!

The plastic mulch is supposed to “increase yield by heating the soil”. Well, you read about my yield above, but it sure did “heat the soil” and kill the weed seeds.

My second A: I will always control weeds between rows. As an extra weed control measure, I dug a trench between the plastic strip rows, placed wet newspaper in this trench, (so it wouldn’t blow away while I was placing it), and then straw on top of the newspaper. The trench helped pool water for gentle movement of rain water outward and wet soil never prevented me from walking in the garden.

Also, the cover prevented weeds from growing between the planted rows. I did run out of newspaper at the end and left the soil between two rows open to nature. Grass did grow up, but the grass side blades only laid on top of the plastic. So, I trimmed the grass and had a grass walkway between the plastic mulched vegetable rows.

Next year I’ll plant some trimmable green manure crop between plastic mulch rows and improve my soil at the same time. No more high nitrogen additions to my soil at planting time!
**Among the Roses**

*Rosalie M. Laune, Franklin County Master Gardener*

In June we were invited to the home and gardens of Kerry and Wanda Weirich. The Weirich’s live on Beiker Road on property that has been in Wanda’s family since the 1930’s. Although we were only a short distance from Highway 47, it seemed as though we were miles away from bustling city life, with nary a sight of Golden Arches or the sound of honking horns. Or, as Wanda describes it: “The garden is very casual in a semi-country setting, surrounded by typical Missouri rolling hills and fields.”

Kerry is the principal gardener in the family and although he dabbles in all things green, from veggies to fruits to flowers, his main focus is roses, over three hundred plants actually. Kerry’s roses are laid out in individual gardens according to type and each is labeled by name, a task in itself.

The Weirich’s are members of the Tri-County Rose Society, of which Wanda is president. The Weirich’s specialize in “EarthKind” rose cultivation. EarthKind is the most prestigious horticultural designation bestowed by the Texas AgriLIFE Extension Service, (part of the Texas A&M System). Roses receiving the EarthKind designation have been scientifically proven to be the finest, most thoroughly tested and most environmentally responsible plant selections for use in landscapes and gardens. For more information about EarthKind Roses visit the website [http://earthkindroses.tamu.edu](http://earthkindroses.tamu.edu). Thanks to Wanda and Kerry for their gracious hospitality. It was truly an enjoyable evening.

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**From Swamp to Sanctuary**

*Char Spreckelmeyer, Franklin County Master Gardener*

Recently, the church/school I am involved with faced a tremendous challenge. Immediately adjacent to the new gymnasium building was this ugly hillside. The area was heavily compacted, rock-filled, and infested with weeds, but these were the least of the problems. It was also full of ruts from the erosion taking place every time it rained. (Remember Spring 2008 and 2009)--- lots of heavy rains...

Knowing this was a focal point for the entire property, as well as for all the local traffic who travels Hwy M and Hwy AT added to the challenge.

We investigated many options for this area--ground covers, putting the area in turf, just rocking it, etc. We seriously considered a hillside rock garden/water pond feature, but had to rule that out due to the extreme cost.

After much deliberation, we came up with the idea of a butterfly/hummingbird sanctuary….That was my Master Gardening project for this past spring and summer.

I put the word out that we needed lots of natives and hardy perennial type plants. Like a true gardener, I was shameless in begging from friends, dividing the plants in my own back yard, checking out the plant sales all around the area, etc.

I chose the hardiest plants, (Butterfly bush, butterfly weed, swamp milkweed, hardy hibiscus, lythrum, daisies, coneflower, lobelia, daylilies, salvia, etc.), knowing they would have a difficult job to do---flower to attract butterflies and hummingbirds, while tolerating the mucky soil.

We literally had to dig each hole through gravel/muck, amending with compost as we went. In one area, we resorted to digging the holes with a butcher knife to plant the moss rose that someone donated. Hey, desperate conditions call for desperate measures.

Since it takes a while for the wildflowers to establish, we added areas of annuals and have pumped the fertilizer and water on them to add color and continuity to the area.

With such a large area, we flagged out a pathway between areas, and then further separated sections by using different types of mulch. Since the ground sloped in the middle into a large (ugly) concrete drain, we outlined it with small boulders to keep the “soil” from washing in. Then we put a big concrete basin on it filled with blue colored sand for a “butterfly” feeding station, (we put fresh citrus slices in it every day or so). A bench, birdbath, hummingbird feeder and bird feeder are also strategically located in the area.

The area is filling in nicely and we are being rewarded by a few hummingbirds and butterflies. Yes! From swamp to sanctuary! Gotta love the challenges of gardening, and the joys that reward our hard work.
It is not by accident that the Monarch butterfly is so named, for truly it is regal in appearance. The life cycle of the beautiful creature is unique in that, not only does it complete the four stages of metamorphosis: egg, larvae (caterpillar), pupa (chrysalis) and adult, but in addition, there are four generations which occur each year.

The first generation is actually the returning Monarchs, which have been in hibernation. Their offspring appear in March and April. Since their life span is very short, only two to six weeks, the second generation is born in May and June, followed by the third generation born in July and August.

Of greatest interest is the fourth and final generation born in September and October. Although its metamorphosis is exactly like the first three generations, it does not die after a few weeks. Instead it migrates to warmer climates in Mexico and California, where it will reside for six to eight months until it returns to begin the process anew. That this gentle, fragile creature will fly approximately 2,500 miles to a warmer climate is truly awesome. Actually, the Monarch is the only insect that migrates.

Having enjoyed the beauty of this butterfly since high school biology; I happened to visit a Monarch website on the internet some time ago. I was fascinated to learn about the avid interest in the Monarch across the nation.

The milkweed plant is the specific plant utilized by the Monarch. The eggs are deposited on the plant by the female, and when the very tiny caterpillar hatches, it begins to eat and eat and eat. When it reaches a certain size, it finds a suitable place to form its chrysalis.

Many of the milkweed plants in the wild have been destroyed through new construction, herbicides, fires, etc. Quite by accident a few years ago, I purchased a plant called Blood Flower, Asclepias curassavica. After reading about it, I found that it is a native of South America and a member of the milkweed family. I began to notice the appearance of many Monarchs, as well as hummingbirds and other butterfly species. At the end of the season, the many pods on the plant pop open and numerous brown seeds emerge. They can be successfully planted the following season.

It is noteworthy that the Monarch’s overwintering sites in Mexico are under threat because of people cutting down their favorite tree, the oyamel fir tree. What will happen to the Monarchs if they do not have these special trees upon which to spend their winters?

Thankfully, there are groups of people that collect money to save these important trees and educate people about Monarch conservation. How devastating it would be to lose this beautiful creature to extinction, because once again man has interfered with Mother Nature. I have several Blood Flowers growing in and around my yard. How delightful to see the beautiful little caterpillars so tiny at birth begin to grow into maturity ready for the next stage of development. Every day I check the plants on the deck just to see if I can spot most of the caterpillars. Recently, I counted ten of them just on one plant.

It takes about four days for the eggs to hatch and within two weeks the caterpillars are fully grown. Within ten days after their chrysalis is formed, the transition is complete, and the beautiful Monarch emerges. Soon this fourth generation begins its long journey to a warmer climate.

Questions arise. Just how long does it take them to get to where they are going? How do they know which way to travel? How do they know to migrate? Mother Nature is truly mystifying. There are several great websites with much information and great pictures for people who are interested in helping the Monarch. One website is www.Monarch-Butterfly.com.

If anyone would like some seeds, I will be happy to provide them. The more of this plant that we produce, the greater the chance of keeping this precious gift from God alive for future generations to enjoy.