PLANTING A FALL GARDEN

If all the rain this season stunted or killed your plants and reduced your yields, try planting a fall garden. Some gardeners have better luck with fall gardens because if the rain lets up the cooler days and steady temperatures of September and October are ideal for garden plants. My best crop of green beans came last fall in a raised bed.

The last week of July and the first two weeks of August are ideal times to plant some garden vegetables for a fall garden. First prepare the soil for planting. In established gardens, additional fertilizer may be needed, especially if there were previous crops or excessive weeds. Check planting dates for each crop before doing a fall planting. Some vegetables are best planted in spring and early summer and require the longer season, or warmer temperatures to provide a good yield. Some vegetables and certain varieties can be planted in late summer for a fall crop. Broccoli, cabbage, cauliflower, and Brussel sprouts can be transplanted into the garden in early August. Green beans, zucchini, leafy greens, peas, carrots and beets can be direct seeded. August plantings of these crops are typically higher quality than spring plantings due to cool fall weather. Snap bush bean varieties recommended for fall planting include Contender, Provider, Derby, Strike, Tema, Tendercrop, Top Crop, and Purple Queen. Sweet corn planted in early August can provide a nice fall crop.

Because of the rainy season some crops are being harvested later than usual. Harvest garlic and onions when the tops turn yellow and brown and fall over. Zucchini should be harvested when approximately 8 inches long. Most slicing cucumbers should be harvested when they are 6-8 inches in length, pickling at 3-4 inches. For more information on harvesting and storing vegetables see MU guide 6220 at http://extension.missouri.edu/p/g6226.

Fall is a good time to plant trees. Some young trees died this year from all the rain. Yellowing and then browning of the leaves of a young tree during a rainy season like this one is an indication of poorly drained soil often leading to root rot. Fall is a good time to plant woody ornamentals. Fruit trees are best planted in the spring. Be sure to plant fruit trees in a well-drained area. Stone fruit trees like cherry, plum and peach do not like wet soil. This year, the soil was too wet for too long and many young trees were lost.
INTERESTED IN BECOMING A MISSOURI MASTER GARDENER?

Who are Master Gardeners? Master Gardeners are adults of all ages who love gardening and who have previous gardening experience. They are members of the local community who are interested in lawns, trees, shrubs, flowers, gardens, and the environment.

Who can be a Master Gardener? You can if you:
- Have knowledge or experience in gardening or landscape management.
- Are willing to learn and provide research-based horticultural information to the public.
- Can attend training sessions.
- Can volunteer at least 30 hours to educational horticulture programs through your local University Extension Center.

What kind of training do Master Gardeners receive? You will take 36 hours of classroom horticultural training; 12 classes, three hours per class. Classes are taught by state and regional University Extension specialists and other horticultural experts. You will learn about plant growth, insect and disease control, vegetables, fruits, flowers, trees, shrubs, soils, and environmental issues. After training you are required to complete 30 hours of volunteer service your first year. Upon completion of the volunteer service you will be a certified University Extension Master Gardener. You are required to complete 20 hours of volunteer service each year thereafter to maintain your status of active Master Gardener.

How much does the training cost? The total cost of most programs is around $150, but varies by location.

What do Master Gardeners do? The primary responsibility of Master Gardener trainees is to answer questions from area residents about home horticulture, and to help them find environmentally sound solutions to gardening and landscape problems. Extension specialists are available to help and advise as needed.

Other opportunities include:
- Master Gardener speakers bureau, giving educational presentations to groups, garden clubs, community associations or school classes.
- Help local residents diagnose plant and insect problems.
- Write articles for newsletters, newspapers and other publications.
- Staff exhibits at home and garden shows and fairs.
- Organize community gardening projects.
- Develop youth gardening programs.
- Teach gardening classes.
- Conduct home horticulture research.
- Assist in senior gardening programs.
- There are numerous other activities in which to participate, and volunteers may initiate their own projects.

How can I become a Master Gardener? Contact me (Jennifer) at 660-665-9866 or schutterjl@missouri.edu and let me know if you are interested. Afternoons work best for me, but I would like to try to have a class and am willing to work with interested persons. We need to have a minimum of 8 people, 10 is preferred.

CHLORAMINE CAUSES CONCERN

There have been reports of water containing chloramine killing plants in one county in northeast Missouri. I don’t know much about it, but found some information about chloramine that I will share with you. Chloramine is a mixture of chlorine and ammonia and is added to public water systems in addition to chlorine. Chloramines are not as effective and do not dissipate as easily as chlorine. Chloramines are difficult to remove and cannot be removed by boiling, distilling, standing uncovered or by some reverse osmosis filters. The disinfection byproducts of chloramines (iodoacids) are more toxic than chlorine.

Chloramines make the water acidic which over time can change soil pH. This may result in nutrient tie-up and create yellowing (chlorosis) problems in many plants. Chloramines prevent the absorption of other nutrients which also may lead to yellowing. The action of chlorine and chloramines kill bacteria both good and bad. Many good bacteria that live in the soil control fungal diseases. When we lose these good bacteria there is no natural control and turf grass diseases like “Brown Patch, Take All and St. Augustine Decline” become rampant. In other words the more one waters, the greater the chance that one will experience disease problems in their grass and other plants. Chlorine and chloramines kill the nitrifying bacteria that fix nitrogen from the air into the soil. Hence additional nitrogen must be supplied to the plants to replace the loss of free nitrogen from nature. Container plants (hanging baskets, pots, etc.) are more susceptible to damage from chloramines as they tend to require more watering. Studies have shown that chloramines hurt the germination of seeds from many species of plants.

(Continued on page 3)
Chloramine is neutralized in the soil by reactions with organic matter, destroying it in the process. Organic matter in the form of humus can hold 15 times its weight in water, hence the soil loses some of its ability to hold and store water.

Chloramine hurts the production of compost tea as it kills some of the microbial species that one is trying to grow to high densities. Using high humus products like compost, native mulches (that have been composted) and humate in a landscape is the easiest way to minimize the damage from chloramines and chlorine. This ensures that even if some of the organic matter is destroyed and some of the beneficial microbes are killed, the soil life can quickly regenerate and prevent problems. If you suspect you have chloramine in your water source, you will need to talk to your county water supply or try the recommendations above. Some of you have called me about this, but I do not know enough about your county water supply and cannot do anything about it being in the water.


(Continued from page 2)

COLUMBIA, Mo. – Many Missouri home gardeners made a horrible discovery this year. The compost they worked into their garden soil is contaminated with persistent herbicides.

David Trinklein, horticulture specialist for University of Missouri Extension, says the contamination is coming from the composted manure and bedding of animals that have grazed on forage sprayed with new-generation herbicides. These new herbicides, called pyralids, are designed to control broadleaf weeds in pastures and to last a long time. They are not broken down in a grazing animal’s digestive tract or in the composting process.

Contaminated compost worked into your garden will contain enough active herbicide to damage sensitive plants. These include many plants prized by home gardeners, such as tomatoes, beans, strawberries, marigolds and some varieties of roses, Trinklein says. Fixing contaminated soil isn’t easy. Trinklein says it’s better to check for contamination before you buy or apply compost. This includes compost you made yourself using animal manure. “I think the safest thing to do would be ask for a small sample of compost and do the green bean seed test,” Trinklein said. “That way you'll know before you buy, and certainly before you apply, whether there’s any chance of contamination.” The seed test is simple. Grow green bean seeds using the compost. Since green beans are very sensitive to these herbicides, the sprouts will grow twisted and gnarled if the compost is contaminated.

Another option is to avoid compost made with horse manure or bedding, unless it can be verified that horses were fed hay that was not treated with pyralids. Horse manure is more frequently a source of contamination than manure from other common livestock animals. “This might be due to the fact that most horse owners are particular about what they feed their animals, therefore they insist on hay that is weed-free,” Trinklein said. “It’s easier to obtain weed-free hay if it has been treated with these herbicides.” What can you do if you unknowingly add contaminated compost to your garden? There aren’t a lot of options, Trinklein says. You can try to remove the contaminated soil and replace it with new topsoil. That’s neither easy nor inexpensive.

“The other thing you can do would be to apply activated charcoal,” Trinklein said. “The finer the grind of the charcoal, the more effective it’s going to be.” A moderate amount would be about 7 pounds of activated charcoal per 1,000 square feet, equivalent to a 20-by-50-foot garden, he says. He warns to be ready for sticker shock. “I found it online in bulk for about $5 per pound plus shipping,” Trinklein said.

Another option is to wait for the herbicides to break down in the soil naturally. This usually occurs over time because of microbial activity. But how long would you need to wait? “That’s the scary part. We don’t know,” Trinklein said. “We cannot tell people if you only wait weeks, months, years, your soil will be safe. Our learning curve about the problem still is steep.”

Source: Debbie Johnson, Writer, University of Missouri Extension; Dr. David Trinklein, 573-882-9631

GREEN BEAN SEED BIOASSAY FOR CONTAMINATED COMPOST

1. Use six 6-inch plant pots.
2. In three of the pots, put a 50-50 mixture of compost and potting soil.
3. In the other three pots, put potting soil only.
4. Plant green bean seeds in all six pots and wait.
5. If the green beans in all six pots come up looking normal, then the compost is probably safe.
6. If the beans in the 50-50 mixture come up twisted and gnarled, then the compost is likely contaminated with herbicides.
August Gardening Tips

Ornamentals
- Deadhead annuals and perennials as needed.
- Continue spraying roses susceptible to black spot and other fungal diseases. No further nitrogen fertilizer after August 15th.
- Divide bearded iris now. Replant so tops of rhizomes are just above ground level.
- Prune to shape hedges for the last time this season.
- Evergreens can be planted or transplanted to ensure good rooting before winter arrives. Water both the plant and the planting site several days before moving.
- Soak shrubs periodically during dry spells with enough water to moisten the soil to a depth of 8-10 inches.
- Once bagworms reach full size, insecticides are ineffective. Pruning off and burning large bags provides better control.
- Spray black locust trees to protect against locust borer damage.
- Watch Scotch and Austrian pines for Zimmerman pine moth damage. Yellowing or browning of branch tips and presence of pitch tubes near leaf whorls are indicative. Prune and destroy infected parts.
- Hummingbirds are migrating through gardens now.
- Monitor plants for spider mite activity. Hose these pests off with a forceful spray of water.
- Second generation pine needle scale crawlers may be present on Mug pine now.

Vegetables
- Compost or till under residues from harvested crops.
- Broccoli, cabbage, and cauliflower transplants should be set out now for the fall garden.
- Cure onions in a warm, dry place for 2 weeks before storing.
- Sow seeds of beans, beets, spinach, and turnips now for the fall garden. Spinach may germinate better if seeds are refrigerated for one week before planting.
- Begin planting lettuce and radishes the last 2 weeks of August.
- Pinch the growing tips of gourds once adequate fruit set is achieved. This directs energy into ripening fruits, rather than vine production.

Fruit
- Prop up branches of fruit trees that are threatening to break under the weight of a heavy crop.
- Thornless blackberries are ripening during the first week of August.
- Spray peach and other stone fruits to protect against peach tree borers.
- Sprays will be necessary to protect late peaches from oriental fruit moth damage.
- Cultivate strawberries. Weed preventers can be applied immediately after fertilizing.
- Watch for fall webworm activity now.

Turfgrass
- Apply insecticides for grub control on lawns damaged by their activity.
- Lawns scheduled for renovation this fall should be killed with Roundup. Have soil tested to determine fertility needs.
- During the last week in August, dormant lawns should be soaked to encourage strong fall growth.

-Missouri Botanical Garden-

UPCOMING EVENTS

August 26, 2015: Master Gardener training in Kirksville; Wednesdays, 1-4 pm. Register by August 14 at a reduced price of $115.00. After August 14, fee will be $150.00 Forms available at http://extension.missouri.edu/adair or call 660-665-9866.

August 4: Salt River Master Gardener meeting, 7 p.m., Sesquicentennial Building, Palmyra, MO

September 3: Tomato Fest, Bradford Research farm, Columbia.

September 11-13: State Master Gardener Conference, Stone Creek Inn, Columbia. Registration information is on the Missouri Master Gardener Association website at http://www.momga.org/. If you do not have internet access, call your county extension center for the information.

Due to a computer glitch, address changes from January 2014 to May 2015 were lost. We are extremely sorry for this inconvenience. If you provided an address change or asked us to add someone to our mailing list during that time, please contact us at 660-665-9866 or email schutterjl@missouri.edu.