Planting Azaleas
Donna Aufdenberg, MU Extension Horticulture Specialist

Planting azaleas is a common topic that comes about every spring right as the plants are blooming. They can be such an impressive color statement in the landscape. Since there are so many azalea varieties on the market, there is a wide variety to select from - different sizes, colors, growing habits and bloom times.

Most of the azaleas desired by gardeners are the broadleaf evergreen varieties which are hardy to USDA zone 6 to 8. There are also deciduous varieties that are just a wonderful and attractive. It is important to do some homework to find the variety that would suit your landscape.

Azaleas are notorious for being finicky for our Missouri gardeners. Azaleas just have many challenges here – heavy clay soils, hot, humid summers and winters that just won’t stay cold. All of these can shorten the life span of a newly planted azalea.

With many gardeners, azaleas are bought on an impulse and are quickly muddled into a vacant spot in the landscape with hopes they will survive. This is the wrong approach. Azaleas need forethought, a little studying, a soil test, and a “perfect” spot in the landscape that will lead to a thriving plant for years to come.

First and foremost, azaleas like a well-drained soil with high organic matter content. This can be easily remedied with peat moss,
Last spring was really wet and really cool, even going into early summer. Gardens across the region appeared to slow their growth or they didn’t grow at all. And then when the rains stopped and the sun finally came out, it came out with a bang and stayed out turning the wetness into near drought conditions. Tons of calls came into the Extension Office with my same reply of “it’s the rain and cool temperatures” as my go-to answer. But then the calls coming began to sound a bit different. “My tomatoes look all curled and gnarly.” “It appears my garden has just stopped growing with no fruit set.” “My veggies look like they have pesticide damage and I swear I don’t spray.”

After more than just a few of these calls, I was able to narrow down the culprit – compost. After a few phone calls to colleagues and MU campus specialists, I discovered the issue was compost contaminated with the herbicide class known as *pyridine carboxylic acids*. The most common of the herbicides are aminopyralid, picloram and clopyralid.

I learned through my investigation that this class of herbicides is registered for pasture, grain crops, residential lawns, commercial turf (golf courses), and certain vegetables and fruits. These herbicides are used to control broadleaf weeds including many which are toxic to livestock. They are considered restricted and can only be purchased by someone who has a pesticide applicator license.

These herbicides do not easily break down in the soil or in plants. As the animals graze, the herbicides don’t break down in the digestive track meaning that the active ingredients of the herbicides remain in the urine and manure. The active ingredients also remain in hay, straw, and grass clippings.

Compost is made with green feedstock of grass clippings, leaves, straw etc. with some also including manure. Even through the composting cycle with temperatures between 110° to 140°, the active ingredients don’t breakdown.

Once contaminated compost is applied to the garden, the herbicides will leach into the

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*Zucchini leaves are strappy and cupped. Picture from University of Maryland Extension.*

*Distortion of tomato leaves caused by clopyralid. Picture from University of Maryland Extension.*

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soil and be absorbed by the plants. The herbicide can then remain in the soil for many months and even up to one year. However, you can help breakdown these active ingredients a bit faster by tilling the soil allowing sunlight to heat the soil and excessively watering the area each time you till. It is recommended to do this several times for the remainder of the growing season.

Plants that are most sensitive are: Beans, Carrots, Compositae Family (daisies), Dahlias, Eggplant, Flowers (in general), Grapes, Lettuce, Marigolds, Mushrooms, Peas, Peppers, Potatoes, Roses (some types), Spinach, Strawberries, Sunflowers, Tomatoes, Umbelliferae Family (celery, carrot), Vegetables (in general).

So how can you avoid purchasing contaminated compost? Buy compost from a known source. Ask if they know where the feedstock was purchased to make the compost and did that source use any of the pyridine carboxylic acid herbicides. Unfortunately, purchasing compost in bags from a box store doesn’t allow you the opportunity to see this information. However local area garden centers will make their own compost for sale so you can easily ask them. Another option is to make your own compost.

So what if you don’t make your own compost and end up buying bags from an unknown source or if you know you had contaminated compost in your garden. How will you know if the compost is contaminated or not and if your garden soil is now “clean”? There is a simple bioassay test you can do at home listed below....

### Green Bean Seed Bioassay Test to Determine Contaminated Compost
- Use six 6” plant pots (or thereabouts)
- In three of the pots, put in a 50-50 mixture of compost and potting soil.
- In the other three pots, put potting soil only.
- Plant green bean seeds in all six pots and wait.
- Once the green beans have three true leaves, and if green beans in all six pots come up looking normal, then the compost is probably safe.
- If the beans in the 50-50 mixture come up twisted and gnarled, then the compost is likely contaminated with herbicides.

Green beans are used for this test because they sprout rapidly and you can get a determination within 3-4 weeks.

NOTE: If you had contaminated compost last year and want to determine if it is still active in your garden soil, in Step 2 above, substitute your garden soil for the 50-50 mixture of compost/potting soil.
As a specialist clover is often referenced as a cover crop to be used with vegetables or as forage. The four most common types of clover are listed here with the benefits they offer. It is clear that each helps to feed pollinators and attract beneficial insects but you may see that they are not all equal in other aspects, an you my find one to be better suited for your needs.

Don’t feel that you have to plant a large stand to attract insects, you may already have one of these in your yard but you could also mix some in or create a small patch to improve your sanctuary.

Red Clover *Trifolium pratense* is a great winter annual that provides weed control, improves nitrogen in soil, improves soil through extensive roots and a taproot and feeds pollinators. It can be sown as late as September at 8-12 pounds per acre. It usually attracts more beneficial insects than white clover and is highly adaptable. Soil pH should be between 6.0 and 7.2.

White Clover *Trifolium repens* is a good choice as a living mulch between vegetable or fruit plants. This perennial plant reaches up to 12 inches but handles traffic well. It spreads using underground stolon. The types that flowers early such as ’Dutch White’, ‘New Zealand White’ and ‘Louisiana S-1’ may help to attract beneficial insects to the area sooner. Bees love white clover for both pollen and nectar. It prefers cooler weather, withstands shade and will need some management (mowing) if used as a living mulch between rows. Broadcast 7 to 14 pounds per acre. Soil pH should be between 5.5 and 7.2.

Crimson Clover *Trifolium incarnatum* is a rapid growth annual that prefers cool season weather. It does not overwinter well in Missouri. It does have large, showy blossoms that attract many types of bees and minute pirate bugs. The blossoms may attract aphids early on which could provide a food source for ladybugs building a population that is able to feed on and reduce pest aphids during summer. Broadcast 22 to 30 pounds per acre in early September. Improves soil when pH is over 5.0.

Yellow Sweet Clover *Melilotus officinalis* and White Sweet Clover *Melilotus alba* are biennials used for soil erosion, to improve soil and to improve soil nitrogen. This clover is winter hardy, drought tolerant, has a large root system with a taproot that improves and holds soil and is able to pull phosphorus and potassium from the soil and release it for other plants. The plant can reach as high as 8 feet in the second growing season. The bloom attracts honeybee, tachinid flies and large predatory wasps. Broadcast at 15 to 20 pounds per acre. This is a better forage clover. The root system will dry out a soil during drought, killing weeds and other plants that are using moisture from that same soil profile.
Outdoor Plants and Ornamentals

- Clean up beds by removing all weeds and dead foliage at this time.
- Tree, shrubs and perennials may be planted as soon as they become available at local nurseries.
- Fertilize woody plants before new growth begins, but wait until soil temperatures have reached 40 degrees.
- Apply superior oil spray to control scale insects & mites on landscape plants.
- Divide and transplant perennials, such as ajuga, shasta daisy, daylily and liriope. Rework beds before planting, adding organic matter and fertilizer.

Vegetable Gardening

- Cultivate weeds and remove the old, dead stalks of last years growth from the asparagus bed before the new spears emerge.
- Delay planting if garden soil is wet. When a ball of soil crumbles easily after being squeezed together in hand, it is dry enough to be safely worked.
- Plant peas, lettuce, radishes, kohlrabi, mustard greens, collards, turnips, Irish potatoes, spinach and onions outdoors.
- By the end of the month, plant beets, carrots, parsley and parsnip seeds outdoors. Set out broccoli, cabbage, brussels sprouts, chinese cabbage and cauliflower transplants into the garden.
- Start tomatoes indoors now for transplanting around May 1st.

Fruits and Nuts

- Gradually remove mulch from Strawberries as the weather begins to warm.
- Continue pruning grapes. Bleeding causes no injury to vines. Tie vines to the trellis before the buds swell to prevent bud injury and crop loss.
- Continue pruning apple trees. Burn or destroy all pruning to minimize in-sect or disease occurrence.
- Apply dormant oils by the end of the month. Choose a dry day when freezing temperatures are not expected.

Turfgrass

- Mow lawns low to remove old growth before new growth begins.
- Apply controls for wild garlic. It will take several years of annual applications for complete control.
- Apply crabgrass preventer now before it starts to warm and before seeds germinate.
- Thin spots and bare patches in the lawn can be overseeded now.

Seed Starting

1. Choose a potting or seed starting mix. It needs to be well-drained and composed of small particles.
2. Choose your containers. You can use leftover 6-packs, empty milk cartons, egg cartons or Styrofoam cups.
3. Start your seeds. Moisten seed starting mix and then plant seeds at their proper depth.
4. Keep the lights bright. No further than 2 inches away.
5. Feed and water. Check your seedlings twice a day.
6. Keep the air moving. Make sure there is plenty of air circulation to keep disease away.
7. Give them space by thinning to one to two seedlings or transplant to larger containers.
8. Harden them off gradually in time to plant outdoors.
A good friend of mine and I used to see who could have the first ripe tomato every summer. So I was always on the lookout for ways to produce a ripe tomato before he did. Years ago I read an article on a lady in Kansas who used walls of water to extend her growing season. She claimed that using walls of water, she could plant tomatoes up to six weeks earlier. I wondered if it would work so I had to try them and it did!

Since then, I’ve used walls of water off and on. I first bought a pack of three which worked for the first summer. After that, I bought more until I ended up with twelve. With our last frost here in Scott City being between the middle to end of April, we can plant tomatoes about the third week in March to the first of April using walls of water. By planting this early, picking the first tomatoes by the end of May or first part of June is possible. It takes about 8 or 9 weeks from transplanting good tomato plants to ripe tomatoes.

Almost any kind of tomato will work in the WOW (Walls of Water). However one that is particularly suited for them is Stupice. It is a really hardy tomato that, when mature, will stand a light frost. It is a cold hardy tomato that produces 1 ½ to 2 inch fruit. With leaves that resemble those on potato plants, this little jewel comes to us from the former country of Czechoslovakia. It is an indeterminate. Early Girl will work but it isn’t as cold tolerant as Stupice.

The Walls of Water usually come in a pack of three. They will cost somewhere around $15 to $20 plus shipping. You can check local stores but most likely you will have to order them over the internet. Burpees carries them and so does Morgan County Seeds. They are called Season Starters #649 in Morgan County. It’s up to you how many to order but I’m pretty sure you will wish later you had ordered a couple extra.

Plant your tomato plant just like you normally do. If the tomato is tall and leggy you can plant it deep. Water the plant in with a water or fertilizer mix using a high middle number like 8-56-9 or 9-45-15. Now that you have your tomato planted, we need a five gallon bucket with the bottom cut out. I take a five gallon plastic bucket and cut around the side of the bucket about ¼ to ½ inch up the side. I use a jig saw. I also remove the handle.

Now set the bucket over the newly planted tomato plant centering it on the tomato plant. Now slide one of the WOW over the bucket with the openings of the sleeves up. Once you have the WOW in place you can now fill the sleeves with water until ½ full. Then carefully lift the bucket out of the walls of water. It should stand up forming a kind of teepee around the tomato. Now, fill the sleeves the rest of the way up. Mick, my brother in Nebraska, doesn’t use a bucket. He sets the WOW around the tomato plant and then slowly runs water in the sleeves a little at a time.

The best time put the walls of water around them is on a warm day. This will allow your tomato plant some time to acclimate to the WOW but also allow the water in the sleeves...
Caladiums are a commonly grown summer foliage plant. They are not hardy in our region but it is possible to overwinter the dry tubers indoors. The great thing about caladiums is that they are available in a variety of multicolored leaves and decorative leaves. The limiting factor is they are a shade plant. Otherwise they are very versatile. They can be used in containers, as borders, and as bedding plants.

Caladiums grow to full size during one growing season. The tubers always seem a bit slow to start in the spring time so sometimes there is an advantage to starting them indoors before transplanting them outside after the last fear of frost. The leaves can be combinations of red, pink, green, and/or white. They are great in a mass planting as a focal point or mixed with other shade loving plants.

I usually have several pots of caladiums mixed with other shade loving annuals such as impatiens or torenia. Then I get to enjoy them throughout the season but don’t have to dig them up. Plus the shady areas in my yard tend to stay wet which leads to rot problems in the tubers. When the temps start to get cooler, I quit watering the pots and let them dry out on the porch before moving them to the basement for the winter. Then when it warms up, the pots come out of the basement and watered to start them growing.

**Fancy-Leafed Caladiums:**

- 'Aaron' is white with green margins, some sun tolerance.
- 'Candidum' is an old cultivar that is white with green veins.
- 'Florida Fantasy' is white with red veins.
- 'June Bride' is white with green margin.
- 'Marie Moir' is whitish green with red spots.
- 'White Christmas' is a popular white leaf.
- 'White Queen' is white with red veins, some sun tolerance, more red with shade.

- 'Carolyn Whorton' has pink leaves with red veins and green margins.
- 'Fannie Munson' is pink.
- 'Fire Chief' is a dark pink, with limited sun tolerance.
- 'Pink Beauty' is pink but lighter than 'Fannie Munson.'
- 'Pink Cloud' is pink with green margins and some sun tolerance.
- 'Gypsy Rose' has pink veins with green blotches.
- 'Freida Hemple' is deep red; lighter than 'Postman Joyner'; green margins; no sun tolerance.
- 'Kathleen' is red with green margins.
- 'Postman Joyner' is a well-known dark red with green margins.
- 'Red Flash' is dark red, has fuchsia spots, green margins and good sun tolerance.

**Lance-Leafed Caladiums:**

- 'Caloosahatchee' is white with a green margin.
- 'Candidum Jr.' is a dwarf white caladium with green veins.
- 'Gingerland' is white with red blotches and a green margin.
- 'White Wing' is white with a green margin.
- 'Florida Sweet Heart' is mauve pink with green margins.
- 'Pink Gem' is pink and excellent for hanging baskets.
- 'Pink Symphony' is pink with green veins.
- 'Lance Whorton' is red with white blotches and a green margin.
- 'Red Frill' is red and also excellent for hanging baskets.
- 'Rosalie' is red with green margins.
- 'Miss Muffett' is a dwarf caladium. Its leaves are green with white veins and red blotches. This variety has no sun tolerance.

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The common fig, *Ficus carica*, is a 20 foot by 20 foot tree that grows in zone 8-10. In zones 5 – 7 this tropical fig needs protection from winter temperatures below 20°F and will likely form a large shrub do to winter dieback. The fruit ripens in late summer on new wood so if the season is not long enough the fruit will not have time to ripen. Protection from cold weather can extend the season and is most easily done by growing the plant indoors, moving the plant indoor in the winter or growing it in a greenhouse or hoop house.

Some varieties that might do better in our climate are Chicago Hardy, Brown Turkey, Brunswick and Blue Celeste. These grow in zones 6-9 however they still need protection from winter weather, below 10°F. The fruit ripens in July which may provide enough time for the plant to produce fruit before frost.

It is important to protect the roots from getting too much moisture in winter when temperatures are cold and to protect viable buds from freezing or getting damaged by frost. Buds will more easily damage from cold temperatures than wood.

**Missouri Figs**
Sarah Denkler, MU Extension Horticulture Specialist

**Growing Winter Onions**
Rennie Phillips, Scott County Master Gardener

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Sarah Denkler, MU Extension Horticulture Specialist

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compost or leaf mold. They do not like “wet feet”. Good drainage can be achieved by adding organic matter to the planting site and planting azaleas with the tops of their root balls a few inches above ground level with the soil mounded up to the plants. This is especially important in heavy clays.

Avoid poorly drained sites or areas where water sits for a while after rainfall has occurred. Avoid water logged areas or areas where plants have died from root or crown rot.

Select an area that is protected from wind but has a northern or eastern exposure. This protects them from drying west or south winds and are less subject to rapid temperature changes from late fall to early spring. Many people think azaleas are shade lovers. Dense shade is not satisfactory. Filtered sunlight is ideal but morning sunlight with shade after 1 p.m. is satisfactory.

They like the soil pH between 5.0 and 5.5. It is important to confirm pH with a soil test. Many of our landscapes have had significant lime applications over the years and pH is 6.5 to 7.0. In these areas, soil sulfur, iron sulfate or ammonium sulfate would need be to be applied to correct the pH in order to have successful azaleas.

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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 Fist 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

March
5  Parkland Garden Symposium, Mineral Area College. Pre-registration required by calling 573-438-5103.
10  Farmers’ Market Workshop, 684 W. Jackson Trail, Jackson, MO. 8:30-3:00pm. $15.00 Register at 573-238-2420.
12  Cape Girardeau Master Gardener Spring Seminar
31  Garden Symposium Faith Lutheran Church, 1002 Saddle Spur Road Dexter, MO. From 9:00-1:00pm. To register call the Extension Center at 573-568-3344

April
7  Advanced Beekeeper Training for established beekeepers. NRCS office in Dexter, MO. To register call the Extension Center at 573-686-8064.
30  Webster Groves’ Herb Society Annual Herb Sale. First Congregational Church of Webster Groves, 10 West Lockwood, Webster Groves, MO. Doors open at 8:30am.

May
7  Kress Farm Garden Preserve's 18th Annual Plant Sale, 5137 Glade Chapel Road, Hillsboro, MO. From 9-3pm. Large selection of native perennials, annuals, vegetables, daylilies, succulents, cacti and Forrest Keeling plants. Raffle. Lunch available. Contact Jo Ferguson, 636-296-9306 for more information.
14  Native Plant Workshop from the Missouri Prairie Foundation at Arcadia Academy, 211 South College Street, Arcadia, MO. From 9:00-3:00pm. Registration fee of $22

Musings: Walls of Water
Rennie Phillips, Scott County Master Gardener

Continued from page 6 to warm up. The warm water in the sleeves surround the tomato with enough heat to stand some of the coldest nights. If there is a heavy frost forecast you can cover the top of the WOW with the bottom of the bucket. When the danger of frost is past, you will need to remove the WOW off your plants. It is nice to have another pair of hands to do this. I grip opposite sides of the WOW at the top and simply lift it off the plant. Wala you now have a tomato that has been in the ground growing and developing roots for 5 or 6 weeks earlier then normal.

You can now spray off your WOW and allow them to dry. I’d store them out of the sunlight and where mice and such can’t get to them. With care these same WOW will last for years and years. I have some that are at least 10 years old. If one of the sleeves gets a hole in it, you repair it. You simply slide an individual sleeve down the bad hole and repair it. These repair kits are relatively inexpensive.
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Azaleas can be planted in the early spring or early fall. Don’t worry about preparing the soil deeply. Instead, loosen the soil in a broad area around the planting site. Before planting the azalea, water it thoroughly before planting. Upon removing the plant from the pot, loosen the roots. (Root bound plants that have been in containers for a lengthy time should be thoroughly loosed with some of the outer roots cut.) Remove as much loose soil as possible before planting.

Azalea like an evenly moist soil. Drought will quickly do damage to shallow root systems. The roots are very fibrous and shallow (they stay within the first 12 inches of the soil). For this reason, mulching is a MUST! Apply an inch of mulch - pine bark, hardwood bark or pine needles. Supplemental waterings may also be needed through early fall and increase bloom buds for the next spring. Newly planted azaleas can easily succumb to drought conditions if not properly cared for.

Pruning needs to be done right after bloom to avoid cutting off next year’s flower buds.

Fertilizers for acid-loving plants or a fertilizer supplying the ammonium form of nitrogen are best. Applications are usually done in May. Avoid using general garden fertilizers. Follow directions on the package.

Keep in mind that July 1st is the cutoff for fertilization and any major pruning. Doing so after this date will promote new growth that will not harden in time for fall. Dieback can be detrimental to the plant.

The biggest lesson that I have learned over the years with azaleas is to baby them for the first two years and then just watch and be protective for the next two. When we have a drought, water them and keep them mulched. By no means, don’t forget about them.

If you would like to know more about azaleas…

University of Missouri Extension Guide G6825 “Growing Azaleas and Rhododendrons” [http://extension.missouri.edu/p/G6825](http://extension.missouri.edu/p/G6825)

Azalea Society of America [http://azaleas.org/](http://azaleas.org/)
