Extension Gardener

NC STATE UNIVERSITY NORTH CAROLINA COOPERATIVE EXTENSION Winter 2013

Empowering gardeners. Providing garden solutions.

in this issue

Pruning roses

Hybrid roses are among the most challenging garden plants to grow. The rewards, however, are beyond description. One of the most critical tasks to keeping these plants healthy is winter pruning.

Prune your roses when the buds begin to swell. Near the coast this usually occurs by mid-February, while in the piedmont and mountains this is usually early to mid-March.

Winter pruning is not as difficult as you may think. First, round up your supplies: sharp pruning shears, lopping shears, gardening gloves, and first aid kit. Then follow these tips for pruning success:

- Remove any dead, diseased, or otherwise weak and unhealthy wood.
- Prune to open the center of the plant. This allows for good air flow and can help reduce disease problems.
- Where canes cross or touch, remove either the weaker cane or the one that exhibits an undesirable growing position.
- Based on size and growing position, make your final choices for this year's canes. Retain canes that are at least pencil-sized in diameter. For more, smaller flowers, retain six to eight canes. For fewer, larger, specimen-type flowers, retain four to five canes. Prune these canes back to 12 to 15 inches. Cut about half an inch above an outward-facing bud.

Keep in mind that most species of old-fashioned roses only bloom once a year. They do not require the severe structural pruning of Hybrid Teas and Floribundas. Prune them mainly to maintain a desirable shape. Prune miniature roses for good plant shape. While deadheading minis can be tedious, it can ensure a plentiful supply of flowers almost all summer long.

All rose types require regular care to thrive. These tips will help you get your roses off to a strong start this season.

- When new leaves begin to emerge, begin irrigating your roses. Roses need around 1 inch of water per week. Use a soaker hose in your rose garden to conserve water and minimize leaf diseases.
- Begin your fertilization program in spring. Fertilize based on soil test results. Boxes for collecting soil samples and instructions for submission are available from your local Cooperative Extension office.
- If a soil test is not performed, use a complete fertilizer (one that contains nitrogen, phosphorus, and potassium), such as 5-10-5, 4-8-4, or 4-8-6. Apply fertilizer at the rate of 3 pounds per 100 square feet. This is about ¼ cup of dry fertilizer per plant. Spread the fertilizer evenly around the plant and scratch it into the soil surface.

Regular care and sound pruning practices such as those outlined above will be rewarded with shapely, healthy plants and an abundance of beautiful, fragrant flowers. Enjoy.

— Randy Fulk

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Extension Showcase

Cleveland Master Gardener Program

Cleveland County has always lacked a Master Gardener program, but in 2012 the decision was made to give the county's gardeners this opportunity to extend their gardening knowledge. In mid-September 16 enthusiastic students attended their first Master Gardener class.

As classes continued, the students engaged in volunteer gardening efforts. With the help of Gaston County Master Gardeners, the Cleveland County students brought a Cleveland County Fair booth to life and kept it stocked with Extension publications and plants throughout the fair's 10-day duration. County fair leaders loved the booth so much that they guaranteed it a spot at future fairs.

In addition to staffing the booth at the fair, 11 class members joined a workshop in Gaston County that involved installing a water-harvesting system and rain garden at a local bakery.

By October 31, all 16 class members had earned their intern status. They're anxious to get on with their work in Cleveland County and extremely proud to be the county's first Master Gardeners.

— Julie Flowers

Smart Gardening — *Using plants to suppress other plants*

Plants emit all types of substances as they are growing, dying, or decomposing. Researchers have found that some of the substances given off by plants can work to suppress the growth of other plants. Hence the term *allelopathy*: the beneficial or harmful effect of one plant type on another plant type.

The chemical substances generated by plants can affect different systems within the plant being suppressed, attacking or inhibiting cell division, uptake of nutrients, enzyme activity, photosynthesis, and even pollen germination.

Leaves, flowers, stems, bark, roots, and leaf litter can have allelopathic activity over the course of a gardening season or longer. These allelopathic chemicals can persist in the soil and affect nearby plants or plants established later. They can act similar to a herbicide suppressing the growth of plants around them.

Research has found that extracts from the wood and bark of red maple, sweet bay, and red cedar inhibit lettuce seed germination as much as or more than black walnut. Broccoli residue will interfere with other crucifer-type vegetables that are planted following broccoli. In cover cropping, rye and wheat will act to suppress weed growth when these crops are used as mulch. The incorporation of a lantana's root system and leaf growth into soil has been found to reduce the germination of milkweed vine and other weeds. Perhaps the most well-known allelopathic effect is the way that the leachate of leaf litter, root systems, and bark of black walnut limits the growth of most plant materials attempting to grow near established trees.

Cover crops from the brassica family, such as rapeseed, radishes, and mustards, will release allelochemicals and have been found to suppress weed growth for several weeks or months after the cover crop was tilled into the soil or winter-killed. In addition, winter rye and its decomposing residues work to suppress pigweeds, lambsquarters, purslane, and crabgrass. Sunflowers have also been linked to suppression of morninglories.

An understanding of allelopathy may directly affect the types of plant materials we use within our gardens, from the cover crops we select to the planting plan and vegetable rotations we use each gardening season.

— Jan McGuinn

Food Production — *Garden heirlooms*

Are you older than 50? In the gardening realm, plant varieties more than 50 years old are termed "heirlooms." Many of these are finding their way back into our home gardens. As you begin reviewing seed catalogs and planning for spring, you may want to consider heirloom selections for your garden.

Heirloom vegetables allow us to taste the past. These varieties were developed by gardeners who repeatedly selected the plants that tasted the best and yielded well. Many years of selection resulted in varieties that were adapted to the soil conditions, pests, and climate of the region. Keeping these genetic traits alive increases diversity within the garden, which in turn can limit levels of insects and diseases.

Most heirloom varieties are open-pollinated, allowing gardeners to save their own seed for future crops. Some vegetables are self-pollinating and will produce plants from seed similar to the parent plant even when other varieties are grown close by. Beans, peas, lettuce, tomato, eggplant, and peppers are usually self-pollinating.

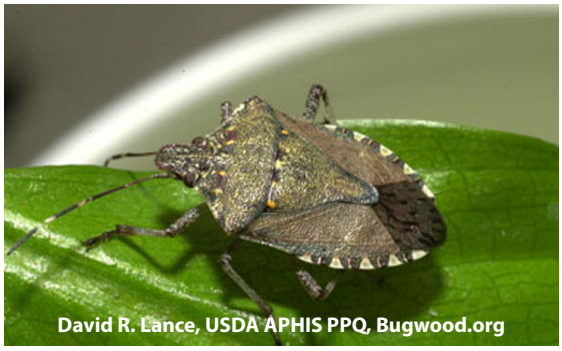
Vegetables that are cross-pollinated by wind or insects may need to be isolated from similar varieties to produce seed that come true to type. These include cucumbers, pumpkins, melons, squash, broccoli, beets, spinach, cabbage, turnips, corn, and onions. Isolating by time is a way to limit cross-pollination. This means planting vegetables so that the different varieties do not flower at the same time, preventing them from pollinating one another.

As a starter this spring, try a few different heirloom varieties. Some options are 'Cherokee Trail of Tears' green bean, also known as 'Cherokee Black,' which can be used as a snap bean or dry bean. Another interesting selection is 'Christmas Pole' lima bean, with seeds that turn a pink-brown color when cooked. For small garden spaces or containers, try 'Oakleaf' lettuce, which dates back to 1771 and is a wonderful salad addition.

— Jan McGuinn

Pest Alert — *Brown marmorated stink bug*

There is a new critter seeking to come into your home to spend the winter. Known as the brown marmorated stink bug (BMSB), this pest is originally from Asia and was first found in North Carolina in 2010. Related to the common green stink bug, adult marmorated stink bugs are brown, shield-shaped insects, approximately 17 mm long, with alternating light and dark bands on their antennae and on the lower edge of the "shield."


David R. Lance, USDA APHIS PPQ, Bugwood.org

BMSBs overwinter in the adult stage in homes and woodland. Adults emerge in the spring and migrate to nearby host plants, where they mate and then lay eggs in clusters on the underside of leaves. This pest is active throughout the summer and fall, feeding on a wide host range that includes many fruits, vegetables, field crops, and ornamental plants. Feeding results in external distortion and discoloration of fruit, which can extend several centimeters into the fruit. Both adult and immature insects can inflict damage.

To prevent BMSBs from coming into your house start by sealing all cracks, especially those around doors, windows, and eaves. Indoor/outdoor insecticides can be sprayed in these same areas but are likely to have little effect. A more effective way to deal with these pests once they have entered your home is to simply vacuum them up. Dispose of the vacuum bag afterwards to prevent odor. A fact sheet about managing this pest in the landscape and indoors is available online from North Carolina Cooperative Extension at www.ces.ncsu.edu/depts/ent/notes/O&T/trees/note148/note148.html.

— Elizabeth Ayers

Environmental Stewardship — *Focus on pollinators*

Many people are aware of the issues facing honeybee populations worldwide, but did you know that honeybees are just one example of a pollinator species in peril? There are more than 4,400 species of native bees in North America, many of which are also experiencing declining populations.

As gardeners, we are partners in nature with native bees and other pollinators, including birds, bats, butterflies, beetles, flies, and even small mammals. The flowers we select and plant in our yards provide essential nectar and pollen for these creatures. Thanks to pollinators, many of the plants we grow in our vegetable gardens provide us with edible fruits. In fact, about a third of the food we eat is the result of insect pollination. The ecological service of pollination also enables other plants, including many threatened native plant species, to produce viable seeds, perpetuating their species for future generations.

Just as we learn about gardening by observing and identifying plants, pollinator conservation depends on learning about pollinator species and identifying them in the field. The Xerces Society (www.xerces.org) and the North American Pollinator Partnership Campaign (www.pollinator.org) provide excellent resources for expanding your pollinator knowledge, including plant lists, field identification guides, and educational materials on increasing pollinator awareness.

Gardeners are inherently curious about nature. By learning how to differentiate a yellowbanded bumblebee from a carpenter bee or a blue orchard mason bee, plant enthusiasts can help others learn to recognize and appreciate pollinators and the essential role they play in the larger ecosystem. As stewards of the garden, we share the responsibility of reducing pesticide usage, conserving natural habitats, and nurturing a public interest in the thousands of pollinators that have yet to hit the spotlight.

— Meghan Baker

Tips & Tasks

Lawns

- Remove debris from lawns (rocks, sticks, leaves, etc.) throughout the winter season.
- If it does not rain, water 1 inch per week to avoid excessive drying.
- Apply a broadleaf herbicide such as 2, 4D as necessary to control henbit, chickweed, and other winter annuals on a warm calm day with temperatures above 55°F.
- Fertilize fescue lawns with 1 pound of nitrogen per 1000 square feet in February.

Ornamentals

- Plant and transplant woody ornamental trees and shrubs.
- Prune dormant trees and shrubs beginning in mid January. Do not remove more than one-third of the branches at any one time. Do not prune spring flowering shrubs at this time.
- Monitor soil moisture, and water evergreens to avoid excessive drying.
- Protect sensitive shrubs and marginally hardy plants in exposed, windy sites with burlap or other protective cloth.
- Check perennials for signs of frost heaving. Push soil down firmly around any plants that have lifted.

Edibles

- Begin planning your vegetable garden for the spring and summer, ensuring crop rotation.
- Inventory garden tools and complete necessary repairs for the coming season.
- Mulch strawberries for protection with pine needles or wheat straw in December

— Kerrie Roach

Extension Gardener

Around the State

Showstopper — *'Oakleaf' holly*

The 'Oakleaf' holly is one of the most exciting recent introductions into the world of hollies. One of five different varieties introduced as the "red hollies" in the mid-1990s, 'Oakleaf' holly gets its name from the shape of the plant's leaf, which resembles that of our native scarlet oak. This evergreen beauty was a chance seedling from the well-known holly variety 'Mary Nell'.

The leaves of 'Oakleaf' maintain an attractive medium green color with a lighter-colored leaf edge throughout the year. Plants exhibit a pyramidal growth habit, reaching heights of 14 feet or more, and spread up to 8 feet across. Hardy in zones 6 to 9, the 'Oakleaf' holly is an ideal choice for evergreen hedges or planting en masse for screening purposes. This showstopper is attractive enough to place in your garden as a specimen plant. Grow in full sun or in very light shade and well-drained soil. — *John Vining*

Helping You Grow

Become an Extension Master Gardener

Extension's Master Gardener Program is designed to enhance public education in horticulture. Under the guidance of Extension agents, participants complete a 40-hour training course in horticulture. In exchange for their training, Master Gardeners work through their Extension office to complete a 40-hour volunteer internship. Volunteer opportunities include answering gardening questions, developing exhibits, working with community and demonstration gardens, and assisting with school gardening projects. To find out more about the Extension Master Gardener program in your area, contact your local Extension center or visit www.ncstategardening.org.

— *Katy Shook*

Edibles — *Mushrooms*

Mushroom-growing kits are a popular way for beginners to get started growing mushrooms. Kits are readily available and tend to have moderate to good success rates. In North Carolina, shiitake seems to be the most popular mushroom. However, growers are also having success with oyster, maitake, and lion's mane mushrooms, to name a few.

Mushroom kits start at around $13, though more elaborate kits can cost in excess of $100. A word of caution for beginners: It is important to start with smaller kits. These come with the essentials — spawn plugs, plug wax, and basic instructions. As the grower, you have to supply the wood (oak is preferred) and manual labor to inoculate the logs. When instructions are properly followed, you can expect mushrooms in six to 12 months, and the logs can last up to 10 years. — *Danelle Cutting*

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Sustainability — *LED lights: Growing into the future*

Since its debut in the 1970s, the light-emitting diode (LED) has morphed from a futuristic device to a fixture of everyday life. Described as solid-state lighting, today's LED more closely resembles a computer chip than a light bulb.

The impact of LED lighting on horticulture began in 1991, when researchers at the University of Wisconsin suggested that LEDs could be used to grow plants. These findings inspired NASA to develop LED-lit growth chambers as prototypes for crop production on Mars.

When used to provide artificial lighting for plants grown indoors, LED lights have many benefits. In addition to more closely matching the wavelengths most utilized by plants, LED lights also radiate very little heat. This allows them to be placed very close to plant leaves.

The environmental benefits of LED lights are impressive. According to Energy Star, LEDs are 20 times more efficient than incandescent bulbs, five times more efficient than fluorescents, and have brightness equal to or greater than other lighting technologies. In addition, they provide constant output for more than 25,000 hours, supply excellent color quality, light immediately upon start-up, do not flicker, and do not draw power when off. Finally, the LED device does not contain mercury or other hazardous materials that require special disposal. — *Bob Filbrun*