Many of the calls I am getting now are in regards to the drought. Despite the little bit of rain we got this weekend, we are experiencing a severe drought in Onslow County. There are some steps you can take to help keep your garden and yard going through the drought while conserving water.

First, think “survive” rather than “thrive” for your lawn. The general recommendation is that most plants need about 1 inch of water per week in the form of rain or irrigation to thrive. This recommendation is not practical for most homeowners in the face of a severe drought. However, watering thoroughly once a month will keep your lawn alive (not lush and green but alive) so it can recover quickly when the rains return. Bermudagrass and zoysiagrass have underground stems (rhizomes) that make them more drought tolerant than St. Augustine and centipede.

Don’t make things worse. Now is not the time to apply fertilizers or herbicides to your lawn. Fertilizers act as salts in the soil exacerbating drought stress. Herbicides won’t have the desired effect on target weeds if the weeds are wilted or not growing actively but high temperatures will make your grass more sensitive to herbicide injury. You can fertilize gardens or container plantings that are being irrigated regularly but you may want to cut back to fertilizing at half strength.

Irrigate efficiently. Most vegetable gardens will require irrigation for optimum production during a drought. Use soaker hoses to target water directly to the root zone of garden plants. Sprinklers are not as efficient because water is lost to evaporation. Sprinklers also wet the leaves of the plants, making them more susceptible to fungal diseases. Water in the late evening or early morning to prevent evaporative water loss. If you have to use a sprinkler, opt for early morning so plant leaves dry out quickly afterwards.

Mulch. Mulch will help prevent moisture loss from the soil. If you haven’t mulched already, water thoroughly and then apply 2-3 inches of mulch around trees, shrubs, flower beds and even vegetable gardens.
Prioritize, prioritize, prioritize. Newly planted lawns, trees and perennials require more regular watering in their first year than they do once established. Water new plantings regularly and established plants less frequently. Flowering annuals have a short life span anyway, focus your watering efforts on saving perennials that will give you pleasure for years.

Think long term. If you lose plants due to drought, consider replacing them with more drought tolerant plants in the future. Think about reducing the amount of fine turf in your yard and converting some of that space into drought resistant perennial borders or other lower-water use areas. Consider installing rain barrels to capture run off for use in the garden.

Tomato Update

We are fielding lots of tomato questions in the clinic lately. The top four questions and their answers follow:

My tomato plants were doing great but then the entire plant suddenly wilted. What’s happened?

Southern bacterial wilt and to a lesser extent southern stem rot are the most common culprits. If you cut the bark off of the stem and see brown discoloration in the vascular tissue, southern bacterial wilt is the culprit. If white fungal growth is visible at the base of the plant, it is likely to be southern stem rot. There is no cure for either of these diseases because both are caused by organisms that live in the soil for years. Pull up and destroy any affected plants. Rotate your tomatoes to another spot in the garden or relocate your garden altogether. If this is not possible, consider growing tomatoes in containers starting with clean, bagged soil or potting mix.

My tomatoes seem to have stopped growing and are starting to look stunted. The young leaves are purplish-brown and appear to be dying. What’s going on?

This could be a viral disease called tomato spotted wilt virus (TSWV). The disease is transmitted to the tomato plants by tiny insects called thrips. The symptoms usually appear first at the top of the plant but eventually spread. There is no cure for this disease either. Remove infected plants from the garden. Eliminate weeds in and around the garden that may harbor thrips. We only have one flush of thrips annually here so you can go ahead and replant tomatoes in your fall garden without fear of the disease returning. There are several TSWV resistant varieties of tomatoes available including Amelia, Crista and Talledega.

Why are my tomatoes flowering but not setting fruit?

Tomato pollination and fruit set occurs best when night temperatures are between 60 and 70 F. When night temperatures consistently stay in the mid-seventies or higher, fruit set will diminish dramatically.

What causes rot on the blossom end of my tomatoes?

“Blossom end rot” is a disease that occurs when tomato plants cannot move enough calcium out of the soil. If blossom end rot is a problem in your garden, make sure you sample your soil and lime according to the sample recommendation. Blossom end rot can occur even with adequate soil calcium levels if the plant is not able to take up the calcium efficiently. This can occur during a drought if plants aren’t watered regularly.

I have also seen several tomato plants (and other crops) that have been damaged by herbicides. Tomatoes are very sensitive to certain chemicals including glyphosate. Take special care when using herbicides around the garden and remember that herbicides can drift if the wind is blowing or volatilize if temperatures are high. Herbicide injury frequently results in abnormal “strappy” growth, marginal burn on the leaves or discoloration of the veins of the leaf.

We are seeing a fair number of aphids on tomatoes. This is probably because of the stress the plants are under due to the drought. Aphids can be easily controlled with insecticidal soap, just make sure that you treat the underside of the leaf and the new growth where most of the aphids are found.

IN THE GARDEN NOW

Ground Pearls Are Not Buried Treasure!

Charlotte Glen

The most lethal pest of lawn grasses in our area is also one of the least well known. Called ground pearls or pearl bugs, these insects can be found damaging lawns throughout southeastern North Carolina. In yards infested with ground pearls, it is often impossible to maintain a healthy lawn since there are no effective treatments for this pest. Managing lawns infested with ground pearls instead relies on redesigning landscape beds to minimize turf areas, choosing turf grasses that
better tolerate ground pearls, and encouraging vigorous turf growth.

**Identifying Ground Pearls and Their Damage**

Lawn infested with ground pearls often exhibit dead areas where little grows except a few weeds. These areas may be only a few inches across or up to several feet in size depending on how widespread the ground pearls are, and are often roughly circular in shape. The dead areas expand slowly, by up to a foot each year. If grass is replanted in these spots it usually dies within a year. Ground pearl infestations can be confirmed by digging in the soil where the insects live.

As their name implies, ground pearls are small, round insects that are pearly white to tan in color. They look similar to the pellets of slow release fertilizer found in container grown plants. Ground pearls attach themselves to grass roots and feed on plant sap using their needle like mouthparts. This feeding activity is very damaging to all warm season turf grasses, especially during drought. If you suspect ground pearls are in your lawn, dig into the soil 3” to 4” deep around the edges of dead areas and carefully sift through the soil in your hand to find the pearl like insects.

**Managing Infested Lawns**

There are no pesticides that kill ground pearls, which are a type of scale insect. Since only turf grasses are effected by ground pearls one method of dealing with them is to redesign your yard so that trees, shrubs, and flowers are planted in the areas where ground pearls exist. Ground pearls are only able to move a few inches on their own each year. Be very careful though not to spread them around when moving soil or using tools or equipment in infested areas. The movement of soil and contaminated equipment is the main way ground pearls are spread over large areas.

While all of the turf grasses grown in our area are susceptible to ground pearl, centipede is the most sensitive since it does not recover quickly from damage and shows little response to additional fertilization and watering. Centipede lawns infested with ground pearls should be redesigned or converted to a more tolerant lawn grass. In a recent trial conducted by NC State University, ‘El Toro’ zoysia tolerated ground pearl damage better than other species in the study. Though often considered a weed, bahiagrass has also been found to be relatively resistant to ground pearl damage. Very vigorous turf grasses like ‘Celebration’ bermuda can be grown in ground pearl infested areas if they receive supplemental irrigation and fertilization. This is more effective in dark or clay soils. In deep sandy soils it is much more difficult to maintain a dense lawn if ground pearls are present, even when vigorous species are planted.

Ground pearls can be found as deep as 10” or more in the soil and can live for 15 years or longer even when no grass is present. Excavating large areas of soil in the hope of removing ground pearl is a very expensive and minimally effective control strategy. Any insects left behind will repopulate new soil relatively quickly since each female is able to produce one hundred or more offspring each year without mating. Excavating soil also increases the risk of spreading these pests to new areas.

**DOWN ON THE FARM**

**Onslow County Farmers’ Market**

Instead of focusing on an individual farm this month, I want to highlight the Onslow County Farmers’ Market. The Onslow County Farmers’ Market provides local farmers with an opportunity to market their produce directly to the public while providing the public with a fun, family friendly venue to buy local products.

This market began as a collaborative effort between local farmers, the Onslow County Cooperative Extension and local government. Originally opened in 1997, the market has expanded to include two locations and more than thirty vendors depending on the time of year. Currently, the market is open Saturdays and Tuesdays from 8:30 am to 1:30 pm at 4024 Richlands Highway (Richlands Highway is also Highway 258) and Thursdays from 12:00 noon to 6:00 pm at 1108 Western Boulevard (behind Dick’s Sporting Goods). The largest selection of product is available at the Saturday market location. The season for the Onslow County Farmers’ Market runs from the second Saturday in April through the first Saturday in November.

The market offers a wide selection of fresh local produce starting with strawberries and greens in the spring and wrapping up with sweet potatoes and pumpkins in the
As this newsletter goes to press, seasonal produce include blueberries, blackberries, cantaloupes, summer squash, cucumbers, tomatoes, peaches, new potatoes and more.

Market offerings are not limited to fruits and veggies though. The market includes vendors of fresh baked goods, locally raised meats and fish, cheeses, and eggs as well as a variety of handcrafted items. Each member of the market is required to produce at least 50% of their product on their own farm. They also label products as homegrown, local or NC grown.

The market provides a family friendly environment with different happenings throughout the season. Guest chefs frequently prepare in-season produce, providing recipes and tasty samples to market visitors. Throughout the year the emphasis is on what’s fresh and in season. Each weekend the market has live music for shoppers to tap their toes to while choosing their selections. In the fall, Farmers’ Market Idol showcases local talent. The season wraps up with a Fall Festival featuring hayrides and a petting zoo along with music, entertainment and the Onslow County Master Gardeners Annual Camellia Show.

Special events for the 2011 season include:

**July 9th** – Sweet Corn Day

**July 23rd** – Blackberry and Melon Day

**August 13th** – Honey Day

**September 10th** – 6th Annual Talent Contest

**November 5th** – 6th Annual Fall Festival & Master Gardeners Camellia show

So head on out to the Onslow County Farmers’ Market, support your local farmers, enjoy fresh local products and have a great time. You can follow the Onslow County Farmers’ Market on Facebook; just search Onslow County Farmers’ Market.

**EVENTS AND REMINDERS**

**Rain Barrels**
Rain barrels will be available for sale from the Onslow County Extension Office in mid-July. Please call 910.455.5873 to reserve yours now. The 50 gallon rain barrels will sell for $45 (complete and ready for installation).

**Community Gardening Classes**
I will be teaching a series of community gardening classes this summer and fall at the Onslow County Public Libraries.

**RECIPE CORNER**

Blueberry season is in full swing. These tasty, sweet-tart berries are nutritional powerhouses – full of antioxidants as well as Vitamins A, C, and E. They are also high in fiber and rich in beta-carotene, potassium, manganese and magnesium.

Pick your own or buy them at your farmers’ market to eat fresh and to freeze for use throughout the year. Blueberries freeze easily. Simply spread unwashed berries in a single layer in a shallow pan and freeze. Once the berries are frozen, pour them into freezer containers. The individually frozen fruit will be easy to portion out as needed.

**Blueberry Chicken Salad**
This savory recipe won the NC Blueberry Festival Recipe contest several years ago.

- 2 cups fresh blueberries
- 2 cups cubed cooked chicken breast
- 3/4 cup chopped celery
- 1/2 cup diced sweet red pepper
- 1/2 cup thinly sliced green onions
- 6 ounce lemon yogurt
- 3 tablespoons mayonnaise
- 1/2 teaspoon salt
- Bibb lettuce leaves

Set a few blueberries aside for garnish. In a large bowl,
combine the chicken, celery, red pepper, onions and remaining blueberries. Combine the yogurt, mayonnaise and salt; drizzle over chicken mixture and gently toss to coat. Cover and refrigerate for at least 30 minutes. Serve on lettuce-lined plates if desired. Top with reserved blueberries.

**Fresh Blueberry Streusel Muffins**

Fresh blueberries mean muffins of course. Try this recipe for a morning treat.

- 1 3/4 cups all-purpose flour
- 1/2 cup sugar
- 2 3/4 tsp. baking powder
- 2 tsp. grated lemon rind
- 1 egg, beaten
- 3/4 cup milk

In a large bowl combine the first five ingredients. Combine the egg, milk, and oil; stirring well. Add to the dry ingredients, stirring until moistened. Combine blueberries, 1 Tbs. flour, and 1 Tbs. sugar. Toss gently to coat. Fold this mixture into the batter. Grease regular size muffin tins and spoon the batter into it, filling each cup 2/3 full. In a separate bowl make Streusel Topping by combining 1/2 cup (1 stick) unsalted butter (at room temperature), 2 1/2 Tbs. flour, and the cinnamon. Cut in 1 1/2 Tbs. butter with a pastry blender until mixture resembles coarse meal. Sprinkle over the batter. Bake at 400 degrees F. for 20 minutes or until they are golden brown.

**Spice Up Your Sweet Corn**

Whether you grow it yourself or pick some up at the farmers’ market, sweet corn is a sure sign of summer. Enjoy it plain, with melted butter and salt or kick it up a bit with one of the seasoning ideas below:

**Roasted garlic butter**

Preheat an oven to 450°F. Remove the papery outer layers from a large garlic head. Cut off about 1/2 inch from the top of the head and discard. Place the head in the center of a 10-inch square of aluminum foil. Drizzle with olive oil. Wrap the garlic in the foil and twist the top to seal. Bake until the pulp is soft, about 20 minutes. Remove from the oven, let cool, and squeeze the pulp from the garlic cloves into a small bowl. Add 1/2 cup (1 stick) unsalted butter (at room temperature), 1 teaspoon fresh lemon juice, and 1/2 teaspoon salt and mix well using a fork.

**Chile lime butter**

Remove the seeds from a small ancho Chile. (Ancho chiles can be found in Latin American markets and well-stocked supermarkets.) Wear rubber gloves when handling any chiles because the volatile oils can cause a burning sensation on your skin. Place the chiles in warm water to cover for 5 minutes to soften. Drain, and mince almost to a paste. (This can leave a stubborn stain on your cutting board, so wash the board immediately.) Reserve 1/2 teaspoon paste for the butter. Discard the rest, or wrap tightly and freeze for another recipe.

In a small bowl, using a handheld blender or fork, combine 1/2 cup (1 stick) unsalted butter (at room temperature), the grated zest of 1 lime, and the reserved minced Chile until blended. (For more spice, add a dash of cayenne pepper.) Proceed as directed in the roasted garlic butter recipe. This is delicious on corn, grilled fish, and chicken. Makes 1/2 cup.

Try these heart-healthy ideas from the latest issue of “Martha Stewart Living” magazine, July 2011.

**Basis-Mint Pesto**

Puree 2 garlic cloves and ¾ cup olive oil in a blender. With machine running, add 1 cup packed fresh mint and ¼ cup packed fresh basil; puree for 1 minute. Brush corn with pesto; season with coarse salt.

**Southwest Spice**

Combine 2 teaspoons chili powder, 1 teaspoon each ground toasted cumin and coriander seeds, and ½ teaspoon coarse salt. Brush corn with olive oil; sprinkle with spices.

**Black Pepper and Thyme**

Brush corn with olive oil. Sprinkle with 1 tablespoon fresh thyme; season with coarse salt and freshly ground pepper.

**Lime Zest**

Combine 1 tablespoon finely grated lime zest (from 2 limes) and 2 teaspoons coarse salt. Brush corn with olive oil; sprinkle with zest mixture.
CONTACT US

If you have questions about lawn, landscape, or garden problems, contact your local Cooperative Extension office. In Onslow County call 455.5873, Mon – Fri, 8 am and 5 pm, or visit us online anytime at http://onslow.ces.ncsu.edu. While you are there, you can post your questions to be answered by email using the ‘Ask an Expert’ widget (in the upper left hand corner).

SPOTLIGHT

SSDRIP has been extended! …

Attention all Onslow residents with a septic system! Funding for the Onslow Septic System, Database, Repair, and Information Program (SSDRIP) has been extended through December 2012. Onslow County receives funding from North Carolina’s Clean Water Management Trust Fund for this program. One program component is a $50 rebate to residential septic system owners for maintaining their septic system by having the septic tank pumped.

After the tank is pumped, the resident and pumper complete the rebate form. The resident then mails the form to Onslow County Health Department Administration. Rebate forms and a brochure about SSDRIP are available from NC Cooperative Extension, Onslow County Health Department, Onslow County Planning Department, and various septic tank pumpers. So far, more than 3,731 homeowners have participated in the rebate program, for a savings of $186,550 to county residents.

Another component of SSDRIP provides either grants or low-interest loans to qualifying residents in need of septic system repairs. These funds cannot be used to expand the size of a system (for example, going from 3 bedrooms to 4 bedrooms).

Septic systems do require maintenance. One of the simplest practices is to not add anything to the system that may harm it. This includes harsh chemicals, large amounts of disinfectants, grease, and solids (bones, eggshells, cigarette filters, etc.). The tank should be pumped periodically to remove accumulated solids and grease. This can be done roughly every 3-5 years, depending upon homeowner practices. The use of “additives” is NOT an alternative to having the tank pumped.

It is recommended that you limit your water use. One common cause of failure is hydraulic overloading… using too much water. Systems are designed for 60 gallons per person per day (assuming two people per bedroom). So a 3-bedroom home would be sized for 360 gallons per day. That is not an “every day” number; instead, think of it as the “red line” on an engine. You can go above it occasionally without damage. For an “every day” water use number, it is recommended to only use 80% of the design flow. That would be roughly 50 gallons per person per day.

The NC Cooperative Extension Service has several publications to help homeowners learn about their system: Septic Systems & Their Maintenance, Septic System Owners Guide, and Why Do Septic Systems Fail? Homeowners should also obtain a copy of their septic system permit from the county health department. The permit can tell homeowners a lot about their system; such as system location, designated repair area location, and if the system has been repaired in the past.