To fertilize or not to fertilize …

Spring has sprung once again. With the warmer weather, people are venturing out into their yards and assessing what they see. The use of fertilizers and other chemicals is an important consideration for property owners. Television and print ads entice you to buy a variety of products. A trip to a store’s garden section reveals shelves of different products. Liquids. Granules. Powders. How do you choose?

Both the North Carolina Cooperative Extension and the North Carolina Department of Agriculture & Consumer Services (NCDA&CS) are available to help. First, get a soil test. Soil testing is a free service from NCDA&CS. You can contact your local NC Cooperative Extension office for details. Soil samples for lawn, shrubbery, and garden areas can be sent to NCDA&CS for analysis. Test results include soil pH, liming recommendations, and fertilizer recommendations.

Different grasses have different pH and fertilizer requirements. For example, centipede likes a lower pH and less fertilizer than the other southern grasses. Liming and fertilizer can cause it to do worse, instead of better.

The proper use of herbicides is also important. Know your weed! If in doubt about what it is, bring some to your Cooperative Extension office. Many of the weeds doing well right now are winter annuals that will be dying as the weather continues to warm. Extension Horticulture agents and Master Gardeners can tell you the best time of year to control the various weeds. North Carolina has a LOT of weed types!


<table>
<thead>
<tr>
<th>Signal Word</th>
<th>Toxicity</th>
<th>Lethal Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANGER</td>
<td>Highly toxic</td>
<td>Less than a teaspoon</td>
</tr>
<tr>
<td>WARNING</td>
<td>Moderately toxic</td>
<td>1 teaspoon to 1 tablespoon</td>
</tr>
<tr>
<td>CAUTION</td>
<td>Low toxicity</td>
<td>1 ounce to more than 16 ounces</td>
</tr>
</tbody>
</table>

Source: Using Pesticides Safely, NCCES 1995
Don’t forget to test the water! ...

Pond and well water samples can also be analyzed by NCDA&CS. The water test is called a “Solution Analysis” and has a $5.00 fee. The sample can be collected in a well-rinsed 16-20 ounce water or soda bottle. Do not use any soap or detergent to clean the bottle.

Bring the sample to your local NC Cooperative Extension office, complete the Solution Analysis form, and pay the fee. The sample is sent to NCDA&CS for analysis, and the results are sent to you. If you have questions about what the results mean, call your Extension office for assistance.

The analysis includes nitrogen (nitrate, ammonia, and urea), phosphorus, potassium, pH, hardness, alkalinity, sodium, iron, calcium, magnesium, manganese, and several other analytes. Well water testing can be very helpful, especially if you live near the coast. Elevated salinity levels (too much salt) or low pH can harm plants irrigated with this water. Minerals in the water can clog irrigation equipment or leave a film on vegetation.

NCDA&CS does NOT test for bacteria. The presence of urea or elevated amounts of ammonia indicates that waste material (human or animal) may be getting into the well. If the well is also used for drinking water, it is recommended that the water be tested by a state certified laboratory for fecal coliform bacteria.

Pond water testing is helpful if you are having problems with algae or other aquatic plants. All too often, someone with an algal bloom adds copper sulfate to their pond to kill the algae. Unfortunately, they also kill their fish. When a pond has low alkalinity and low pH, the copper is much more toxic to any fish in the pond. Test first!

Do try to identify the algae and other pond weeds that you are trying to kill. All pond weeds do not respond the same way to the same chemicals, and some of these chemicals are very expensive. Once the plant is identified, NC Cooperative Extension has a very useful publication to help pond owners select aquatic plant control measures:

*Weed Management in Small Ponds*

NC State University has an aquatic weed website with lots of additional information:
http://www.weedscience.ncsu.edu/aquaticweeds

**Excessive aquatic plant growth? ...**

There are a variety of steps that can be taken to reduce the amount of nutrients entering surface waters:

- If the nutrient or fertilizer isn’t needed on the nearby land, DON’T USE IT!
- If the plants are large, it is possible to harvest them. Once removed, they can be composted and used as a soil amendment. Their removal from the pond will also remove the nutrients that went into their growth. Killing the plants in-place with an aquatic herbicide releases the nutrients to grow something else.
- Prevent or reduce the amount of erosion into the pond or the streams that feed the pond. Steeply sloped banks are more prone to erosion, especially in sandy soils. Use a more gradual slope, and plant the area with vegetation such as low-maintenance groundcovers. The vegetation reduces the force of raindrops, and the roots help hold the soil in place.

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pond at a time, so as to reduce the likelihood of a fish kill.

As the algae and other aquatic plants die and decompose, oxygen is used. The fish may be severely stressed or die, if the oxygen content gets too low. Pieces of decaying algae can also clog fish gills and smother areas where eggs have been laid.

- Numerous beneficial plants can be placed around the edge of a pond to help stabilize the edge, reduce wave erosion, and utilize nutrients. They can also make the site much more attractive! Proper plant selection is needed to make sure they can tolerate the wet conditions. Here are several lists and publications put together by NC State University and Cooperative Extension:

**Qualifiers for Quagmires: Landscape Plants for Wet Sites**

http://www.ces.ncsu.edu/depts/hort/hil/hil-646.html

**Plants for Wet Soils and High Water Table Soils in Carteret**

http://carteret.ces.ncsu.edu/files/library/16/2-Wet&HighWaterTableSoilPlants.pdf

**Plants for Rain Gardens**

http://www.bae.ncsu.edu/topic/raingarden/CoastalPlains_list.doc

**Native Plants for Coastal NC Wetlands and Retention Ponds**

http://pender.ces.ncsu.edu/files/library/71/Plants%20for%20Backyard%20Wetlands.pdf

**Rain barrels & cisterns ...**

Take advantage of the water nature gives us. Using a rain barrel or cistern to collect rainwater can lower your water bill, be good for your plants, and also protect the environment by reducing runoff from your property.

What is the difference between a rain barrel and a cistern? Size. Rain barrels are generally smaller and are installed above-grade, whereas cisterns are larger and may be installed above- or below-grade. Pre-made rain barrels and cisterns can be purchased from numerous sources; however, you can also make your own. A quick web search will pull up a long list of sites with instructions and videos. Here are some brief instructions:

(Adapted from: http://www.cityofbremerton.com/content/sw_makeyourownrainbarrel.html)

- For a rain barrel, be sure to use a food-grade quality recycled barrel (55-gallons is a common size). Most recycled barrels need to be cleaned before first use.

- Install an overflow pipe at the top. This is an important feature. A full barrel has the potential to overflow and may cause erosion. Direct the overflow pipe to an area where the water will be beneficial. Although the diagram shows a 3/4-inch overflow pipe, a 1.5-inch overflow pipe will work better during intense rain events.

- Install a faucet near the bottom of your barrel. This is a convenient way to make use of the collected water.

- Elevate the rain barrel slightly to make access to the spigot easier and improve water flow. Make sure the base is level and stable. A full barrel is very heavy. In fact, you may want to tether the barrel in place, so it can’t tip over.

- Direct your gutter downspout to the inlet hole in the top of the barrel. The screened top vent will help prevent mosquitoes from breeding.

- Keep the lid secure so children or animals cannot get into the barrel.
• Planters and foliage placed around the rain barrel will help it blend in with the rest of the landscape.

• Several barrels can be linked together if you want to collect larger volumes of water, or you can get bigger tanks.

Sizing your system is important. Fortunately, it is not hard to do. A quick approximation is that for every 100 square feet of roof area, a 1” rainfall will yield 62 gallons of water. As you can see, a single 55-gallon barrel can be filled quite rapidly.

If you decide on a cistern, it can be placed totally or partially in the ground; however, a pump (hand, solar, or electric powered) would be needed to access the water. In areas with a high water table, ground water may cause the tank to pop out of the ground when empty. When purchasing a tank to go in the ground, make sure that it is built for that purpose. In-ground tanks are stronger and have extra ribbing support to keep them from being crushed. New, un-used 1,000-gallon concrete septic tanks work well as cisterns.

If you don’t have gutters but still want to collect rainwater from your roof, don’t despair! It is still possible. A French drain can be placed in the ground along your roof’s drip line. The pipe from the drain would lead to an in-ground cistern. This has the benefit of no gutters (or gutter cleaning) needed, plus the water is filtered by the soil prior to entering the cistern. Do check with your termite control company for any requirements about cistern or trench placement, so that your contract is not voided.

The 4-H motto is “To Make the Best Better”, so make the best better by enrolling now to learn something new and meet new people. The 4-H office along with those giving leadership to the activities hope you have an enjoyable summer and invite youth age 5 - 19 to take advantage of the many opportunities offered in the Avenues of Interest Summer Program.

We invite you to join us for an exciting summer!!! Any youth in Onslow County may enroll in one or more workshops, you do not have to be a 4-H'er to register, just come by the 4-H office at 4024 Richlands Highway, Jacksonville. Call us at 455-5873 or you can also check our web site to see what classes we offer and if they are full. (http://onslow.ces.ncsu.edu/) All programs have a registration fee, which must be paid when you register. Registration will not be held at the workshop or activity.

All monies collected are used for supplies and or instructor fees. If you live outside of Onslow County, contact your local Cooperative Extension 4-H agent to learn what programs are available in your county. Do not miss out on an exciting summer of 4-H activities!