NC STATE EXTENSION

Master Gardener | Johnston County

The Gardener's Dirt Newsletter

February 2019

Feature Article:

Pond Management

By: Brandon Parker

Johnston County Commercial Horticulture Agent

Every spring and summer I receive numerous calls to the Cooperative Extension office from Johnston County land owners concerning pond management and aquatic weed control issues. Many of these ponds have very similar issues that can be easily corrected.

The biggest issue I run into concerning pond management year in and year out is low pH (acidic water), this is typically due to many people not knowing the importance of pH in a pond ecosystem and how to correct this issue. Many ponds in eastern NC have a pH at or below 6.0, which in turn typically means they have soft (Less than 20 parts per million total alkalinity) and acidic water. Water of this quality is not very productive for

fish growth and health, leading to undersized and unhealthy fish.

To address low pH issues in a pond you will first need to take a soil sample from the bottom of the pond (mud sample). This would be done in a similar way that you would collect a yard or garden soil sample in having 6 to 10 areas around the pond that you collect soil from and mix together. If possible using a boat to get away from the pond bank is ideal to get the best representative sample. Once mixed together, spread the soil out and let dry before sending in to NCDA Soil Lab. With this soil sample it would also be helpful to take a water sample (16oz plastic bottle) from the pond to send to the NCDA Water Testing Lab. This will give you an idea of what your pond water pH currently is, once you have collected both samples you can bring your soil and water samples to your Cooperative Extension office for assistance with soil boxes and correct form labeling to be sent to the NCDA Lab in Raleigh.

The results from your soil sample will give you lime recommendations, typically in tons per acre, which will tell you the amount of agriculture lime needed to raise the pH in your pond to the desired level NCDA recommends. Liming a pond can be challenging when trying to disperse the lime as even as possible across the entire pond. Typically using a boat to get the areas that cannot be reached from land is the best method. This can take time and some considerable effort but for long term maintenance and health of your pond it is necessary. Lime not only raises the pH but in return you also increase the alkalinity and hardness in the water. Water with at least 20 ppm total alkalinity and similar hardness with a neutral or slightly basic pH does not fluctuate widely. The elements and minerals in water that are balanced like this create a much healthier environment for fish and all aquatic organisms living in your pond. Typically in eastern NC lime may need to be applied every 3 to 4 years once you get the pond pH correct.

For more information on this topic please visit
https://appliedecology.cals.ncsu.edu/extension/fisheries/pond-management-guide/chapter-3/

One other issue I get many calls concerning every year is aquatic weeds or vegetation in and around ponds. Typically some degree of vegetation in a pond is a positive, as they provide food, cover, and help create oxygen in the water. That being said aquatic weeds can quickly become a major issue if not managed correctly. Issues can include, inability to fish or drive a boat, clogged irrigation equipment, low oxygen levels which can lead to fish kills in extreme situations and more. Some examples of common weeds found in eastern NC ponds include, duckweed, water meal, creeping water primrose, parrot feather, several species of lily and several algae species. Some aquatic vegetation can be managed with the use of grass carp while others may require the use of aquatic approved herbicides. Please consult with your local Extension agent to get proper ID on pond weeds and for approved herbicide options if needed.

You can learn more about aquatic weed management at
https://appliedecology.cals.ncsu.edu/extension/fisheries/aquatic-weed-management/

For a list of approved aquatic herbicides please refer the NC Agriculture Chemicals Manual. https://appliedecology.cals.ncsu.edu/wp-content/uploads/2018-NC-Ag-Chem-Manual-Aquatics.pdf

Feature Plant:

Illicium x 'Woodland Ruby'

(Grown and recommended by Johnston County Nurserymen)

Illicium x *'Woodland Ruby'*, also known as the Florida Anise Tree, as in anise the spice. It gets its common name from the scent it produces when its foliage is crushed as well as the fragrance from its flowers. The spicy, aromatic leaves appeal to us but are repugnant to deer. Both the foliage and fruit are poisonous to livestock. The anise that is used as a spice is derived from a different species, *Illicium verum*, an evergreen tree native to southern China and Vietnam. The shiny, leathery leaves are olive green in color and the the pinwheel-shaped, jewel-toned flowers are more brightly colored than those of Florida Anise. While regular Florida Anise blooms only in spring, 'Woodland Ruby' flowers profusely in spring and sporadically throughout the summer and fall.

Illicium 'Woodland Ruby' is an interspecific hybrid between *I. floridanum* 'Alba' and *I. mexicanum* and matures at 8 to 10 feet tall and 6 to 8 feet wide. 'Woodland Ruby' has a multi-stemmed, upright, compact growth habit and is native to natural habitats are the wet, swampy areas or wooded streams with acidic rich soil. It grows in partial shade to full shade, but reportedly can be acclimated to full sun if well-watered. It prefers moist soil and definitely should be mulched and watered during prolonged dry spells, as it has a tendency to wilt. Would be ideal in a rain garden or allowed to naturalize. The recommended USDA zones range from 7 to 10.

Good or Bad:

Freeze / Frost Protection

By: Brandon Parker

Johnston County Commercial Horticulture Agent

For many fruit and vegetable farmers in Johnston County the fine line between planting early and being overly cautious and waiting a few extra days can make the difference in a considerable amount of money. Being the first to have certain crops such as strawberries, sweet corn, watermelons and field grown tomatoes can be a big help when it comes to paying bills and making spring farm profits. Knowing when to take that chance on planting early can be key, but is often a big gamble these farmers take.

For some crops such as strawberries and blueberries we manage frost and freeze protection in early spring with large row covers and overhead irrigation during hours of frost and freeze potential. For other crops such as watermelon, tomatoes, squash and others, starting transplants in a greenhouse then transplanting into the field in early April is the best bet, as this allows you to already have an established plant growing in the field when many may still be waiting for warmer field soil temperatures to plant seed putting them weeks behind the transplants. On a small scale I have seen growers protect such vegetable crops and sweet corn with row covers but this is typically not feasible unless you already have access to such materials and they are not in use. This however is very practical for homeowner and small garden situations where placing buckets or cloth sheets over a small number of plants can protect them from late season frost events.

Some farmers use historical data to help them decide when to plant and take that gamble. Historically for Smithfield NC, April 7th is our average last spring frost with a standard deviation of 12 days. The standard deviation is an important statistic to consider along with the average date. The standard deviation tells the amount of dispersion around the average. The average date minus one standard deviation gives the date which there is only a 16% chance of frost. A frost will occur after this date about twice in every 10 year period. So for Smithfield NC, April 7th plus on standard deviation (12 days) put us at a 16% chance of having a frost by April 19th. Knowing this information can be critical for farmers growing for farmers markets and even wholesalers and retailers looking to pick up early NC produce once states like Georgia and Florida begin tapering off on spring supply.

For more information on this topic refer to:
https://gardening.ces.ncsu.edu/weather-2/managing-frost-in-the-garden/
https://content.ces.ncsu.edu/average-last-spring-frost-dates-for-selected-north-carolina-locations

February Quick Tip:

Sharpen Pruners and Loppers with Carbide Sharpener

By:Barb Barakat-Extension Master Gardener Volunteer

Image courtesy of https://gardeningproductsreview.com/

Sharp, rust-free pruners are a delight to use; you can sharpen yours in about 10 minutes. If your pruners are rusty and tight, this will make a huge difference. And sharp pruners make cleaner cuts that heal more efficiently, resulting in healthier plants - a win-win for you and the plants.

- Use a carbide sharpener, sharpen only the beveled edge
- Hold the sharpener at the same angle as the machined bevel
- Run the carbide over the cutting blade from the base to the tip
- Repeat 4-5 times
- Turn the tool over and with one straight swipe remove any burrs
- Spray the blade with vegetable oil (Pam) and wipe with clean cloth
- Lubricate the joint with a lubricant spray (3 in 1, WD40, Felco)
- Pruners are small and can be hand-held; get a partner or use a vice to hold the loppers

Tool care video: https://www.groworganic.com/organic-gardening/videos/sharpening-tools-pruners-loppers-shovels-more

Just a thought . . .

The natural world is one of abundance. We cannot even conceive of ways to give back equally to plants for all that they freely give us . . . . food, fiber, shelter, medicine, fuel. In a world of reciprocity, it is only right that we take the gifts of plants with a grateful heart, a word of thanksgiving and leave as gifts a bit of water and some compost.

Home Landscaping:

Drip Irrigation for Home Vegetable Gardens

By: Marshall Warren, Horticulture Extension Agent

You have received your soil test report, incorporated compost and prepared your soil, ordered

your list of seeds from those colorful vegetable catalogues and now you are gung-ho with anticipation of your best yet harvest for the 2019 season. However, you are wondering if there is something else that you can do to make your vegetable garden even better. Have you considered a more efficient watering system such as drip irrigation?

Many years ago, long before I was an extension agent, I installed my first vegetable garden and I knew water was one of the most critical elements needed to have a successful garden. Since I didn't want to drag around hose pipes to water on a regular basis, I installed an irrigation system with raised irrigation nozzles that sprayed water evenly over the whole garden bed. My plants were well watered, however my first attempt at irrigation caused other problems in the garden. My plants were well-watered, but so were the weeds, and I had excessive problems with foliar diseases on my vegetables because the leaves were overly wet. I tolerated the problems with this system for too many years until I learned, (after becoming an extension agent), that drip irrigation was the best solution and would alleviate most of my problems. I already had the main structure of the irrigation system in place, I just needed to retrofit what I had with drip lines. To my delight, my vegetable garden improved!

Drip irrigation is an irrigation method that allows precisely controlled application of water and fertilizer by allowing water to drip slowly near the plant roots through a network of valves, pipes, tubing, and emitters.

Advantages of drip irrigation:

- Low water pressures, 8-10 psi, and reduced water usage.
- Weed and disease problems may be reduced because drip irrigation does not wet the row middles or the foliage of the crops as does overhead irrigation.
- With control valves, Individual rows can be shut-off when the vegetables no longer need water (some vegetables have a shorter growing season).
- Can apply precise applications of fertilizer with an injector. (Note: A backflow-prevention device will ensure the water always moves from the water source to the field, preventing chemicals in the water from polluting the water source.)
- Automatic drip irrigation application may be managed and programmed with an AC- or battery-powered controller. (Note: automation doesn't mean that you forget about everything, you still need to monitor the progress of your garden)

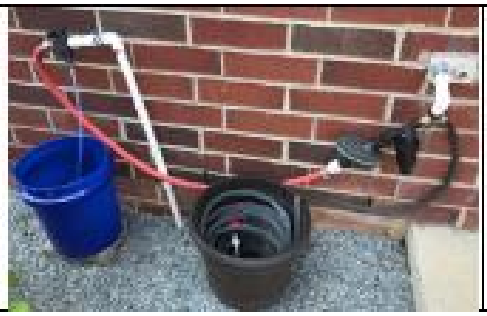
- Drip irrigation equipment is readily available and can easily be installed by do-it-yourselfers.

Components of a Drip Irrigation System
The point of connection to a water supply can be a pump from a well or pond, a faucet (hose bib). A simple filter, with a removable strainer, is first connected to the water bib followed by a pressure regulator. A main header water line is laid along the top of each row or bed and individual drip lines or drip tape are connected to the header and deliver water from emitters in the flat tubing. Fittings and adapters specific to the diameter of drip line are required to connect drip lines and main lines. Irrigation emitter tubing or drip tape with drippers spaced at 12 inch intervals are good for most vegetable gardens. A single drip line will irrigate a row of plants. For more control, you can use valve fittings to connect drip lines to the main line, to rotate watering beds, or if certain beds demand more water.
For wide beds, drip lines are usually spaced 18-24 inches apart; 9-12 inches apart on coarse soils high in sand (these soils will drain more freely and are more difficult to wet thoroughly). The drip tape can be left on top of the soil or buried. For low-hassle watering, install an automatic timer to regulate how long the system runs and the number of times it turns on in a day or week. The automatic watering schedule will need to be adjusted throughout the growing season.

How Much and When to Water?
On average, vegetable gardens require 1" of rain per week for optimum growth. That's about 623 gallons of water per 1000 square feet. Most drip irrigation lines will indicate how many gallons per hour are delivered from each emitter, and using these numbers you can calculate how long you need to run your drip irrigation to provide the appropriate amount of water. Monitor how much rain you receive by placing a rain gauge in the garden. Then, estimate what additional irrigation you will need beyond the weekly total. Watering in the morning is generally best to prevent foliar disease and minimize evaporation.

Consider the plant's life cycle when you water. For example, recent transplants need frequent, light watering to accommodate their shallow, young roots. Once plants are established, keep soil moist to a depth of 6-8 inches. Steady watering is critical at the time of flowering and fruit formation to improve fruit set, flavor and quality. Consistent soil moisture can also prevent some vegetable disorders such as blossom end rot on tomatoes.

One last tidbit: Let's make watering simple and never underestimate the power of your index finger when it comes to deciding when to water. Inserting your finger into the soil at a 1- to 2-inch depth will quickly tell you whether or not the soil is moist or dry. When you can feel moisture just under the surface, you know irrigation is probably not needed.


February Gardening Tasks:

Lawn Care

● Cool season grasses should be fertilized mid-month. If a soil sample has not been taken, use a fertilizer of at least 30% slow release nitrogen at the rate of 1 pound of nitrogen per 1000 square feet.

● Crabgrass usually will start to germinate about the same time the Forsythia blooms. If you have had problems with crabgrass in the past, then you may want to apply crabgrass preventer (pre-emergence herbicide) when the Forsythia blooms.

● Digging up wild onion/wild garlic is the best way to get rid of these pesky bulbs, but make sure you get the bulb. If there are too many to dig up, a product with 2,4-D works well for control. Be sure to follow the manufacturer's directions found on the label. Complete control may take two or more years. Apply 2,4-D at half the recommended rate on centipede lawns otherwise it will damage the grass.

Trees, Shrubs, and Ornamentals

● Cut back dormant ornamental grasses to about 10 to 14 inches above the soil before new growth starts. Evergreen ornamental grasses (or grass-like ornamentals) such as Liriope and Mondo Grass should be cut short or mowed to remove last year's unsightly foliage. If the clumps have become too big for the area they can be divided and shared with friends or planted in other areas of the yard.

● Summer blooming shrubs bloom on new growth so they can be pruned hard in February to encourage new growth and more flowers. Examples include Abelia, Hibiscus, Hydrangea, Beautyberry, Butterfly bush, Althea, Rose of Sharon, and bush or Tea Roses.

● Spring blooming shrubs such as Azaleas, Rhododendrons, Forsythia, Spirea, Quince, Weigela, and Climbing Roses bloom on last year's growth and should not be pruned until after they have flowered.

● Deciduous trees, especially those that bloom in the spring, should not be pruned this time of the year. Examples being Dogwoods, Red Buds, Maples and several others.

● Wait to prune the dead stems of hardy Lantana until you begin to see new growth emerge in the spring. The dead stems help keep it winter hardy.

● For many evergreens this is the best time of the year to prune if they haven't been pruned already.

● Summer blooming roses can be pruned this time of the year. Remember not to remove more than 1/3 of the growth. Remove old mulch and leaves from around plants as this removes many overwintering fungal spores. Put down fresh mulch.

● Bare root roses and trees can be planted this time of the year. Soak the roots overnight to rehydrate them before planting.

● Spring flowers such as Sweet Williams, Pansy, Viola, Calendula, Forget-Me-Nots, English Daisies, Poppy, Alyssum and Dianthus can be planted now. Don't forget to deadhead pansies and fertilize toward the end of the month.

Edibles

● Asparagus crowns can be planted now through March.

● Transplant cabbage, broccoli, and cauliflower out into the garden.

● Strawberry plants can be planted now for spring fruits.

● Beets, carrots, peas, lettuce, mustard, radish, spinach, Irish potatoes, and turnips can be sown outside.

● Starting seeds indoors is easy and economical. Sometimes it is the only way to get the color or variety of the plants you want to grow. It is not necessary to use "grow lights", ordinary fluorescent tubes will usually be enough. For more information you can read the pamphlet "Starting Plants from Seeds", it is on the

web at http://www.ces.ncsu.edu/depts/hort/hil/hil-8703.html
- February and March are good months to prune fruit trees.
- It is time to start a spray program for peach trees to control the many diseases and insects that attack peaches.

Insects

- Control overwintering insects such as scale and their eggs by hand picking or using a dormant oil spray (also known as horticultural oil). Be sure to check for scales before spraying. Follow the manufacturer's directions when applying any pesticide. Do not apply dormant oils to broadleaf evergreens when freezing temperatures are expected.
- Cool-weather mites are not visible to the naked eye. Junipers and other needled evergreens are a favorite hangout of these mites. If you had some of these plants that were an unsightly brown last year, check them with a hand held magnifying glass to see if cool season mites are to blame. Horticultural oil or other registered insecticides can improve their situation and appearance.

Cool Connections:

Helpful Links from N.C. Cooperative Extension Johnston County

Additional Informative Links

Basic Steps for Home Landscaping

Carolina Lawns

NC Extension Gardener Handbook - Landscape Design

Growing a Fall Vegetable Garden

Upcoming Events:

Fruit and Nut Tree Pruning Workshop Demonstration

February 9, 2019
10:00 am to 12:00 pm

Blueberry & Grape Production & Pruning Workshop

February 21, 2019
1:00 pm to 4:00 pm

Future Events:

Birds, Bees, Butterflies and Growing Pollinator Gardens Symposium

September 14, 2019

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N.C. Cooperative Extension of Johnston County Page

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