IN THE PLANT CLINIC

I’ve been seeing a lot of squash bug and squash vine borer damage. These pests target summer squash, zucchini, pumpkins and winter squash resulting in plant stunting or death.

Squash bugs feed on the sap of squash plants using needle-like mouthparts. During feeding, the bugs inject a toxin into the plant that causes the plants to wilt. If you recognize squash bugs early, they can be controlled. Adult squash bugs are often found on the underside of the leaves or at the base of the plant. The adult bugs are grey brown and about ¾ of an inch long. They lay distinctive clusters of small, oval, orange-brown eggs on the leaves and occasionally stems of the squash plant. Squash bug nymphs emerge from the eggs and begin feeding usually at the base of the plant. Nymphs are small and grey with long legs. Their feeding results in small yellow spots on the leaves. Heavy feeding can result in the plant wilting and dying back. Adults will mate and lay eggs throughout the summer so it is possible to find eggs, nymphs and adults all present on the plant.

Inspect your plants regularly checking the back side of the leaves for eggs and bugs. You can remove adults and nymphs by hand and drop them in a bucket of soapy water to drown. Eggs can be scraped off the leaves before they hatch. Insecticides can be used to control nymphs although they will not provide effective control of adult squash bugs. Insecticides should be used as soon as the eggs are found, making sure to cover the backside of the leaves thoroughly. Insecticides containing the active ingredients esfenvalerate, permethrin or bifenthrin will control nymphs. Rotenone is an organic insecticide that can be used to control squash bug. Always read and follow label directions.

Squash vine borers are another common pest that can devastate a squash planting. Left uncontrolled, squash vine borers will kill almost every plant they infest. The adult borer is an unusual looking moth that is orange and black, resembles a wasp and flies during the daytime. The female lays its eggs on squash plants near the base. The caterpillar that hatches from the
egg bores into the squash stem where it will feed for four to six weeks. This feeding causes squash plants to wilt and die.

Once the borer is inside the squash plant, it is not possible to treat them with insecticides. Scout the base of the squash plants looking for the borer’s telltale entry holes, which are frequently accompanied by small mounds of material that look like wet sawdust. In small plantings, borers can be controlled by carefully slitting the stem lengthwise to find, remove and destroy the white borer. If plants are not already too damaged, they will often recover. Since squash vine borers overwinter in the soil, remove any affected plants that you can’t save from the garden area as soon as possible and destroy them.

Prevention is easier than hand removing borers. Next year, consider treating plants from late May through June to control the borers before they move into your squash plants. Esfenvalerate, permethrin, bifenthrin and carbaryl are effective for squash vine borer control. Neem is an organic option. Liquid formulations are more effective than dusts since they provide better coverage. Apply pesticides late in the day to minimize damage to pollinators like honeybees.

Later plantings of squash made in early July will mature after the adult squash vine borers are done laying their eggs. If you lost your early squash planting to borers, go ahead and replant now for a fall squash crop.

**Powdery Mildew**

I have also been seeing a lot of powdery mildew this month. Powdery mildew is a fungus that attacks foliage particularly during rainy periods in the spring. Powdery mildew usually shows up as a white substance on the surface of plant leaves. Leaves may gradually yellow, die and fall off the plant. Crape myrtles and dogwoods are two examples of frequently affected landscape plants. Some garden vegetables are susceptible as well – especially melons, cucumbers and garden peas.

There are many different species of powdery mildew fungi and each species only attacks specific plants so you may see some species affected while others appear fine.

Powdery mildew usually will not kill a tree or shrub although it may stunt a vegetable plant and reduce yields. The best way to control powdery mildew is to prevent it. Choose resistant varieties when available, plant in full sun, provide good air circulation and avoid applying excess fertilizer.

**Plan Now for Fall Harvest**

July and August are an excellent time to plant vegetables and herbs for fall harvest. Mid-July is a good time to plant bush beans, pole lima beans, tomatoes (especially if you lost plants to TSWV earlier in the season), carrots and rutabagas. In early to mid August, consider planting a second crop of cucumbers. Later in the month, you can plant cauliflower, broccoli, and turnips. Early September is an excellent time to plant radishes, kale, cabbage, kohlrabi, onions, lettuce and spinach. With a little bit of planning, you

**Blueberry season** is in full swing. Stop by the Onslow County Farmer’s Market or visit one of Onslow County’s pick-your-own farms to stock up on these joys of summer before they are gone.

Remember these tips from the North Carolina Blueberry Council:

- When choosing blueberries, select plump, full blueberries with a light gray-blue color. A berry with any hint of red isn't fully ripened. Blueberries do not ripen after they are picked.
- Once picked, don't place the berries, still warm from the sun, in a closed bag or container. Leave the container open so moisture doesn't form in the container. Don't wash berries until just before using to prevent berries from becoming mushy. Chill berries soon after picking to increase shelf life. If refrigerated, fresh-picked blueberries will keep 10 to 14 days.
Freeze berries in freezer containers without washing to keep the skins from toughening. Place berries one layer deep. Freeze, and then pour the frozen berries into freezer containers. Because unwashed blueberries freeze individually, they can be easily poured from containers in desired amounts. Remember both frozen and fresh berries should be rinsed and drained just before serving.

To pick-your-own berries, call ahead for picking hours and ask if you need to bring your own containers. Onslow County has two pick-your-own farms:

Justice Blueberry Farms  
1325 Gould Road  
Jacksonville, NC 28540  
910.346.6783  

Southwest Blueberry Farms  
2053 Pony Farm Road  
Jacksonville, NC 28540  
910.347.0026

Southwest Berry Farm  

This month I’d like to introduce you to Julian Wooten, owner of Southwest Berry Farm. Julian can be found at his farm most days during berry season. I caught up with him last week to learn more about how Southwest Berry Farm came to be.

Julian grew up on a farm in Maple Hill. He met his wife Marie in highschool. After college, Julian was employed by Camp Lejeune to head up their environmental programs. Julian realized that this was farming on a grand scale – managing forests for timber production and wildlife habitat. He worked at Camp Lejeune for almost thirty years before retiring. When he retired fourteen years ago, Julian purchased his berry farm. He started out growing strawberries. The first season he planted way too many acres of berries and made it through on beginner’s luck. Each season taught him something new and he experimented with different crops including cabbage, onions, turnips, squash, watermelons and cucumbers.

After a year or two, he turned his attention to the overgrown blueberry patch on the property. Trees, weeds and vines had taken over the patch and Julian had to bring in assistance and tractors to get the trees and vines out of the patch. After cutting the overgrown bushes back several times, Julian actually bushhogged the plants to rejuvenate them. After several years of hard work, the blueberry patch has become an important part of his berry farm.

Families flock to the farm to pick their own blueberries or purchase them prepicked. Children enjoy seeing the farm animals including chickens and pigs. Julian has a variety of produce available depending on the season as well as local honey from his beehives and fresh eggs from his chickens.

You can find out more about Southwest Berry Farm by checking out their Facebook page (search Southwest Strawberry Farm) or give Julian a call at 910.347.0026

Make Your Landscape “Water-wise”  
Carl Matyac  
County Extension Director, Orange County

Water is an integral part of life. Not just the water we drink and bathe in, but ponds, lakes, streams, rivers and coastal waters all contribute to our quality of life here in North Carolina. To conserve and protect these resources, there are a few steps you can take to make your landscape “water-wise.”

Submit a soil sample to the NC Department of Agriculture and Consumer Services, and the testing service will tell you how much lime and the type of fertilizer to use to correct nutrient deficiencies. Apply full rates of fertilizer to plants you want to grow larger. Mature plants need only occasional fertilization to maintain health.

Amend soils with compost. Compost holds moisture for plants and at the same time improves soil structure to allow excess water to drain. Don’t just add organic amendments to the planting hole. Apply 3 or 4 inches of organic matter to the soil surface and incorporate it into the plant bed. Never work soil when it is wet.
Match your family’s needs to the landscape features, and be realistic. If you use that grass for parties, soccer or chipping practice, then keep the turf. Otherwise, transform a part of that lawn into beds that are either natural areas or just low-maintenance groundcovers, perennials, shrubs or ornamental grasses. If you enjoy large turf areas, consider a drought-tolerant species such as bermudagrass, centipede or zoysiagrass.

Tired of spraying for black spot, leafminers and lacebugs? It hurts only for a short time to throw away plants that are not suited to your environment. There are lots of books and pamphlets that will help you learn about plants that are well-adapted to your local gardening climate. Visit public gardens, your county Cooperative Extension center website and garden centers. Join a garden club or volunteer as a Master Gardener. Here is one website with a complete list of tough plants: www.ncstate-plants.net

Organic mulches on landscape beds conserve moisture and help to moderate soil temperature, allowing for rapid root development. Mulches hold moisture and allow rainfall to penetrate compacted soils.

When rainfall does occur, be mindful of nitrogen and phosphorus fertilizers. If swept into a gutter or storm drain, they will go directly into our streams and rivers. There is no water treatment plant to clean this water before it reaches a stream or river. In addition, never dump oil, paint or solvents into the gutter.

Impervious surfaces such as concrete or asphalt do not allow water infiltration. This causes rapid runoff and greater stormwater management problems. Gravel or paver products allow for water infiltration and thus feed our groundwater supplies.

Vegetables and Summer’s Heat
Shawn Banks, Extension Agent, Johnston County

When temperatures start to rise in summer, there is a common problem you may encounter in your vegetable garden. You may notice that your plants are producing lots of flowers, but little to no fruit is being set, resulting in nothing to harvest. While this problem is most noticeable on tomatoes, it also affects peppers, beans, squash and several other summer crops.

What causes summer vegetables to appear healthy but fail to produce? Shade or too much nitrogen could do this, but in mid-summer blame the heat. Research has shown that as daytime temperatures rise over 90 to 95°F and nighttime temperatures above 70 to 75°F, fruit set in many vegetables declines and in some cases stops. This is partially due to poor pollen or sterile pollen production during high night temperatures. Without viable pollen, plants cannot set fruit and flowers abort or drop off.

Another reason is water stress during the heat of the day. Plants need water to fill the cells of the fruit being produced. When daytime temperatures reach up into the 90s, many plants have trouble moving enough water into their leaves to keep them from drooping, even when there is enough water in the soil. When plants can’t keep their leaves full of water, they also don’t have the water to spare for producing fruits such as tomatoes, peppers or beans.

Fortunately, one day of these extreme temperatures is not enough to cause a stop in production. Instead, it’s the accumulation of five to seven days or more in a row that causes problems when it comes to production. There is little gardeners can do to prevent low production during heat waves except to keep plants healthy during these extreme temperatures so when the temperatures cool down a little, production will start back up.

Preparing for Hurricane Season
Katy Shook, Extension Agent, Chowan County

As hurricane season approaches, homeowners often ask how they can prepare their yards for a storm. Begin by assessing the landscape’s current condition. Take photographs of significant plantings to help with insurance claims or recovery efforts.
This will also help in identifying broken, dead or pest-damaged branches that require immediate removal. Otherwise, these pieces can act as projectiles during heavy wind.

Make a list of additional items in the landscape that need to be removed or secured before a storm, including yard debris, hanging baskets, flowerpots, patio furniture, arbors and trellises. Remember, everything is vulnerable. Trees are especially vulnerable. Weak trees, trees with narrow forks and branches, recently damaged trees and those in poor growing conditions or with disease or insect problems are most susceptible to wind damage. Trees growing singly rather than in a group are more likely to be damaged.

Prevent tree damage by promoting tree health. Damage to trunks and roots increases hazard potential. Protect tree roots and trunks by keeping traffic and equipment well away. Avoid heavy mulch application at the base of trees. Secure young, newly planted trees with stakes to reduce wind damage.

When planting new trees, choose species adapted to your yard that have a good record of storm survival. Trees for the NC coastal plain that have made it through hurricanes with minimal damage include live oak, bald cypress, southern magnolia, river birch, hickory, crape myrtle, yaupon, American holly and sabal palm. Weak-wooded, damage-prone trees commonly found in landscapes include pecan, Bradford pear, Leyland cypress, lacebark elm, red and silver maples, green ash, pines, laurel and water oaks, and tulip poplar. Avoid planting these trees close to structures.

To learn more, visit the University of Florida’s “Trees and Hurricanes” website: http://hort.ifas.ufl.edu/treesandhurricanes/

- Mulch plants to conserve moisture, inhibit weeds and reduce disease.
- Drip irrigation and soaker hoses deliver water to the root zone without wetting leaves. Moisture on leaves can contribute to disease development. If you must use sprinklers, water early in the day so leaves dry quickly.
- Provide appropriate support for fruit and vegetable plants such as tomatoes. Trellises and staking will reduce disease and make maintenance easier.
- Harvest fruits and vegetables as they ripen. Remove overripe, damaged or diseased fruits immediately to help control diseases and insects.
- Watch for insects and diseases. If you find an insect or disease, have it identified by your Extension agent and get recommendations for control.
- Mow lawns regularly and at the correct height to promote dense turf and reduce weeds. Centipede, bermuda and zoysia should be mowed to 1 inch, while St. Augustine should be mowed at 3 inches.
- Deadheading promotes new blossoms for many annuals and perennials.
- Remove weeds before they set seed.

**UPCOMING CLASSES**

**Library Classes**

**Fall Vegetable Gardening, July 20**
Camp Lejeune, Harriotte B. Smith Library, 1-2:30
Call 910-451-1979 to register

**Growing and Preserving Culinary Herbs, August 18**
Jacksonville Public Library, 10 am
Call 910.455.7350 to register

Richlands Public Library, 1 pm
Call 910.324.5321 to register

**TIPS AND TASKS**

- Remember to water according to plant needs. Vegetables and newly established plants require more frequent watering than established lawns and plants. Sandy soil requires more frequent watering than heavier soils.
Recommendations for the use of chemicals are included in this publication as a convenience to the reader. The use of brand names and any mention or listing of commercial products or services in this publication does not imply endorsement by the North Carolina Cooperative Extension nor discrimination against similar products or services not mentioned. Individuals who use chemicals are responsible for ensuring that the intended use complies with current regulations and conforms to the product label. Be sure to obtain current information about usage and examine a current product label before applying any chemical. For assistance, contact an agent of the North Carolina Cooperative Extension in your county.

The use of brand names in this publication does not imply endorsement of the products or services named or criticism of similar ones not mentioned.

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

A Little Something About Soils…

What is soil? What makes it a “good” soil or a “bad” soil? What can homeowners do to help their soil? Questions…questions…questions! Here is a brief intro to try to provide some answers.

First, what is soil? The Soil Science Society of America’s definition of soil is “the unconsolidated (loose) mineral or organic material on the immediate surface of the Earth that serves as a natural medium for the growth of land plants.” Over the years, soil scientists have worked to define and categorize soil characteristics. One important characteristic is texture. Quite simply, soil texture is the relative proportion of sand, silt, and clay in the soil. As shown in the figure, there are 12 textural classes:

Sand, silt, and clay are defined by particle size. Sand is the largest (.05-2.0 mm), next is silt (.05-.002 mm), and clay is the smallest (less than .002 mm). Loam is the combination of sand, silt, and clay such that they feel to be of equal proportion. The ideal proportion is typically 40% sand, 40% silt, and 20% clay. The addition of organic matter (such as compost) to loam makes for a productive, well-draining soil.

Soil scientists tend not to think of “good” or “bad” soils; instead, they look to see if the soil is suitable for a particular use. For example, the desired soil characteristics of a site for a pond would be quite different than for a septic system drainfield. In a garden or lawn situation, homeowners may find that their soil has either too much clay or too much sand. To improve a clayey soil, both sand and organic matter would be added. There are many clayey and sandy soils in the North Carolina Coastal Plains.

Submitting soil samples to the NC Department of Agriculture (NCDA&CS) is a great way to learn about your soils and what they may need. Different plants have different requirements; it is not “one size fits all.” For example, many of our soils are acidic (low pH) and require lime to be added to grow lawns and vegetables; however, some plants like a lower pH. Nutrient requirements, such as nitrogen and phosphorus, also vary.

Samples may be brought to your local NC Cooperative Extension office in a one-quart baggie, for transfer into the soil sample boxes. There is also a form that needs to be completed. We will then ship your samples to NCDA&CS for you. After
you get your soil results, agents and Master
Gardeners at your local Cooperative Extension
office will be happy to decipher them for you.

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Area Specialized Agent – Natural Resources
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Soil Word Find:

loam     organic     compost     analysis
sand     nitrogen     texture     suitable
silt     phosphorus     nutrients     pH
clay     mulch     moisture     roots
coastal     plain     plants     sun

m c e r u t x e t m r
s i s y l a n a c u t
b n s d g a f p l l s
l a t n o n t g a c o
o g n s i l i s y h p
a r e d i t o a a t m
m o i s t u r e l o o
s u r o h p s o h p c
a s t n a l p m g n a
n s u i t a b l e e r
d f n a r o o t s u n