

North Carolina Pest News

Departments of Entomology and Plant Pathology



Stephen J. Toth, Jr., editor
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CAUTION !

The information and recommendations in this newsletter are applicable to North Carolina and may not apply in other areas.

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See current and archived issues of the *North Carolina Pest News* on the World Wide Web at:
http://ipm.ncsu.edu/current_ipm/pest_news.html

FIELD AND FORAGE CROPS

From: Jack Bacheler, Extension Entomologist

Cotton Maturity

Friday, July 11, seems to be about the point at which just over half of our cotton is now blooming, so it's fair to say we are probably getting closer to our long term maturity average. Generally, our moisture situation is much better than a week ago, but some of our cotton acreage has still managed to escape the prevalent thunderstorms.

Spider Mites in Cotton

Spider mites continue to be a localized concern, although some populations have declined during the past week probably due to a parasitic fungus. Significant rainfall in some areas of the state has helped this fungus along and also greatly lessened plant stress. Relatively few cotton fields have been treated so far this year for spider mites, although low level populations seem to be present in many areas. So some potential for mite buildups exists. Scouts should definitely be on the alert for mites in the coming days and weeks. In some parts of the cotton belt, when mites reach a certain level, sometimes scored by counting mites on a defined set of leaves, spraying is advised due to the high probability of economic damage in the coming days. In North Carolina, with our generally high humidity and associated fungal pathogen, assessing levels in this manner would likely result in unneeded spraying. However, when mite populations are present on at least 25 percent of the plants in a large area of the field and some lower leaves have turned yellow and dropped, treatment probably pays unless rain is expected. As we mentioned last week, significant rainfall can be a real blessing in reducing mite levels, so delay the application and reevaluate 3 to 4 days after the rain.

Plant Bugs in Cotton

Plant bugs still seem to be present at higher levels across the state than in recent years, and we still are receiving scattered reports of fields being treated for these pests, similar to last week. Our observations in a spider mite and plant bug test in Wayne County on Tuesday, July 8, sounds similar to the experience several others who have called in this week. On the mite end of things, the yellowish leaf stippling was obvious throughout much of the field in our test with some leaf reddening present, but mite levels were only low to moderate and no or only limited lower leaf drop was evident. With plant bugs, the adults were certainly in evidence, but sweeping revealed an average of approximately 3 to 6 per 100 sweeps and upper square retention was in the range of 90 percent, when we inspected one terminal square and one lateral square two nodes

down from the terminal. Most square loss was occurring 2 to 3 nodes down from the terminal, so don't overlook this common plant bug target area.

Cotton Aphids

Although things could change (particularly in areas which have received adequate moisture levels), consultants have reported low cotton aphid levels so far this season. However, the next 3 to 4 weeks are often our most likely time period for treatable levels of cotton aphids, so scouts should report any cotton aphid observations that show the characteristic upper terminal wilting from aphids, especially if these symptoms are widespread. Scouts should also recognize and report items such as aphid mummies, the parasitic fungus, and the moisture status of cotton plants. Aphid infestations only rarely cause an economic loss to Southeast cotton that is not under moisture stress.

Cotton Scouting Schools

We will provide three additional cotton scouting schools in Halifax County and Northampton County at 9:30 a.m. and 1:30 p.m., respectively in the county office buildings. The Wilson, Edgecombe, and Nash county-area cotton and soybean school will begin at 10:00 a.m. in Elm City at the American Legion Post on Main Street. More details will follow in next week's *North Carolina Pest News*.

FRUIT AND VEGETABLES

From: Gerald J. Holmes, Extension Plant Pathologist

First Report of Cucumber Downy Mildew for North Carolina in 2008

On Thursday July 10, downy mildew was detected in a commercial cucumber field near Wilson (Wilson County) and in sentinel research plots near Kinston (Lenoir County). These two reports are the first detected downy mildew in North Carolina for 2008. Earlier this week the disease was detected in Delaware and last week it was reported from South Carolina. Given these recent reports and recent rainfall, it's not surprising that downy mildew is now present in North Carolina. Sentinel plots in Castle Hayne, Clayton, Clinton and Fletcher have not shown any downy mildew to date. The first report of downy mildew in 2007 was June 25, just over two weeks earlier than 2008.

Fortunately we are finishing the spring crop and most cucumber fields are at or near harvest. For fields that are more than 10 days from harvest, growers should consider applying fungicides to control the disease. For growers considering a fall cucumber crop, fungicide applications are a must. Control recommendations for cucumber downy mildew are available online at http://www.ces.ncsu.edu/depts/pp/cucurbit/control_2008.php. A new fungicide, Presidio, is available this year for downy mildew control. Presidio performed very well in North Carolina field studies conducted in 2007. Fungicide trial results are posted at the above website.

For current disease forecasts, tracking maps and a host of other helpful information on cucurbit downy mildew, go to <http://www.ces.ncsu.edu/depts/pp/cucurbit/>.

ORNAMENTALS AND TURF

From: Steve Bambara, Extension Entomologist

Eye Catching Stink Bug, *Euthyrhynchus floridanus*

Euthyrhynchus floridanus is a stink bug that feeds on other insects. Adults are one of the more attractive stink bugs with three orange spots on a dark, metallic blue background. These insects overwinter as adults probably in some dry, sheltered location. Eggs are laid the following spring. The eggs hatch 19 to 33 days later. Nymphs of *Euthyrhynchus floridanus* take a long time to develop through five stages (40 to 67 days). New adult females wait 5 or 6 days before mating and the eggs are laid 23 to 67 days later. Total developmental time for this species is much longer than for plant-feeding stink bugs.

The also colorful immature *Euthyrhynchus floridanus* (Fig. 1) are often found in aggregations and may attack larger prey in concert (like teens at a Hanna Montana show?). Apparently, aggregation behavior allows them to successfully attack prey too large to be subdued by a single nymph. Sometimes the adults aggregate with nymphs, although when times get hard these bugs may feed on smaller individuals. When the bugs jab their proboscis into prey, they inject a toxin that slowly immobilizes the prey (Fig. 2). *Euthyrhynchus floridanus* bugs have an unusual wagging behavior in which the bug rocks its body from side to side while it grips the substrate firmly with its feet. This is thought to be a defensive behavior. Many of these predaceous stink bugs feed on plant tissue when insect prey is not available. Plant feeding is not reported for *Euthyrhynchus floridanus*.



Fig. 1. *E. floridanus* nymph. Image by Allison Brown.



Photo by Stephen B. Bambara
Fig. 2. *E. floridanus* adult. Image by S. Bambara.

Twolined Spittlebugs

Twolined spittlebugs have been observed recently. This insect is a turf pest (Fig. 3) in other areas of the country. Though there can be fair numbers in turf in North Carolina, I rarely see treatable levels. As turf begins to dry, adult spittlebugs sometime move to the succulent undersides of holly leaves. They may easily go unnoticed. As the summer progresses, damage will become more evident; however, it may be too late to treat with insecticide at that time. Twolined spittlebugs are small (1/4 inch), dark insects (Fig. 4) that resemble overgrown leafhoppers. They have two orange lines across the wings. As these small insects fly (usually low across the turf)

their dark red abdomens are conspicuous. In late summer and early fall, the adult twolined spittlebugs fly to hollies (and other plants) to feed. They cause hollies to become splotchy and yellow (Fig. 5) and the leaves to drop prematurely.



Fig. 3. Twolined spittlebug on turf.
Image by James R. Baker



Fig. 4. Twolined spittlebug. Image by James R. Baker.



Fig. 5. Damage by twolined spittlebugs.
Image by James R. Baker.

Female twolined spittlebugs lay their eggs in turfgrass. The eggs are inserted into the plant stem or between the stem and leaf sheath. When the nymphs hatch from their eggs, they begin to feed. Spittlebugs suck sap from the plants with their needle-like mouthparts. As the nymphs feed, they excrete the spittle which protects them from predaceous mites and insects. Because spittlebugs feed on turfgrass near the soil, their numbers may be high without being noticed. Only after the adults emerge is the seriousness of an infestation realized. If you have seen spittlebug damage before, especially on holly, keep a close look at adjacent turf in the coming weeks.

Green June Beetles

Green June beetle adults often emerge in large numbers following a period of rainy weather that softens the soil. Buncombe County is already reporting them. They buzz around the yard and may seem menacing, but they are completely harmless to humans. Green June beetles are most common in older lawns and pastures with high organic content soils or which have been fertilized with manure. The adult June beetle is an attractive green and gold-colored beetle (Fig. 6), which feeds as a minor chafer on the foliage and fruit of trees in mid summer.



Fig. 6. The green June beetle. Image by James R. Baker.

Sevin insecticide can be used to protect foliage and fruit, also, if needed. *Ornamentals and Turf Insect Note No. 67* provides information on controlling green June beetle grubs, which is rarely necessary for the homeowner (<http://www.ces.ncsu.edu/depts/ent/notes/O&T/lawn/note67/note67.html>).

The amazing behavior of grubs crawling above ground on their backs is also characteristic of this insect. For a link to a movie clip of this behavior, visit the University of Arkansas website at <http://turf.uark.edu/turfhelp/archives/101507.html>.

RESIDENCES, STRUCTURES AND COMMUNITIES

From: Mike Waldvogel and Charles Apperson, Extension Entomologists

Wilkes County Resident Dies from Rocky Mountain Spotter Fever

A July 9, 2008 press release from the North Carolina Department of Health and Human Services mentions the death of a Wilkes County resident likely due to Rocky Mountain Spotted Fever (RMSF). As noted by Dr. Leah Devlin, the state Health Director, North Carolina had 665 cases of RMSF reported in 2007.

Extension personnel are likely to see an upsurge of media queries about ticks and tick-borne diseases.

There are no magic fixes to tick problems, but there are measures (both chemical and non-chemical) that people can use to reduce tick infestations around their property and to protect themselves and their family.

PETS

Pets that spend all or part of their time outdoors need to be protected for their own safety and also so that they don't serve as a local reservoir for ticks. There are already enough "potential" sources out there with deer, rodents, and other wild mammals including feral cats and dogs, plus ground-nesting birds. You can treat kennels/pens and other yard areas but please exercise extreme caution about allowing the animals (or your kids) into treated areas before the surfaces dry (or before any time interval specified on the pesticide label). Particularly with our usual hot dry conditions in the summer, insecticide coverage becomes even more of a critical issue. In

these situations, outdoor treatments are best done professionally with a truck or trailer mounted spray rig, or by the consumer using a garden hose sprayer in order to get thorough coverage of tick habitats. Use enough spray volume (don't over apply the actual active ingredient) to ensure that the ground cover is saturated from the surface down to the soil. Consult the *North Carolina Agricultural Chemicals Manual* (<http://ipm.ncsu.edu/agchem/5-24.pdf>) **AND** your veterinarian for information about products suitable for area and specific pet treatments.

HABITAT MODIFICATION

Ticks will be more abundant in areas frequented by wild animals. These areas are typically overgrown and weedy or covered with leaf litter and particularly during those hot summer months - they're often well-shaded places where the animal rests. Try to keep the ground cover in these areas trimmed back as much as possible. Keep leaf litter and other debris out from under and around picnic tables.

PERSONAL PROTECTION

- Whenever possible, avoid likely tick-inhabited areas (i.e., those tall weedy areas we mentioned previously).
- Apply repellents to your clothing, particularly shoes, socks and pants. Permanone is a good choice for treating clothing. If you're wearing shorts you can also spray your ankles and calves. Be careful about using (or overusing) repellents on small children. We have information about repellents at: <http://insects.ncsu.edu/Urban/repellents.htm>.
- Light-colored clothing has the advantage of making it easier for you to spot ticks that have decided to hitch a ride with you.
- If you wear long pants while working or hiking outdoors (not many people hike indoors), tuck the pants' legs into your socks. If you're the type of person who worries about looking like a "dork," stop worrying you probably do look like one regardless of whether you tuck in your pants legs. Besides, you may start a new fashion trend.
- Inspection - when your kids come inside from playing outdoors check them over carefully for ticks (it works for chimpanzees!). Likewise, if you've spent time working in your garden or taking a hike, spend some additional valuable time checking yourself thoroughly for any hitchhiking ticks.

TICK REMOVAL AND REMINDERS

If you find a tick on yourself, your children or your pets:

- Remove the tick carefully by grasping it firmly with tweezers or with a tissue (not with your bare fingers). Pull until it dislodges. This is generally considered to be the best method of tick removal as opposed to using lit matches, oil (motor or mineral), detergent or some other chemical to try to dislodge the tick. If possible, save the tick for identification if necessary. You can keep it wrapped in a tissue or store it in ethanol (preferably 75 percent or higher).

- Wash the bite area with soap and water and then apply an antiseptic such as alcohol.
- Record the date of the tick bite on a calendar. Then, watch for any symptoms within the next 10 to 14 days and contact your doctor if necessary.

Tick-borne disease symptoms are described in our online publication *Ticks and Tick-Borne Diseases in North Carolina* at <http://insects.ncsu.edu/Urban/ticks.htm>.

TICK TESTING

One of the questions frequently asked is whether there are labs that can test ticks for the pathogens that cause Lyme Disease, Rocky Mountain Spotted Fever, Ehrlichiosis, etc.

The following webpage at the Rhode Island Department of Health lists private labs that will perform fee-based tests for the Lyme Disease pathogen only:

<http://www.health.ri.gov/disease/communicable/lyme/ticktesting.php>

There is at least one lab that will perform tests for several tick-borne disease pathogens:

<http://www.igenex.com/ticktest.pdf>

We are not saying these are the only labs performing these tests. These are simply labs that we've found information about. Also, we are not endorsing the services provided by any of these companies or others that may provide tick testing services.

Anyone interested in this information must read the specific instructions given by the labs about the testing procedures. Some of the labs may perform tests only on particular tick species which goes back to the basic point of why identifying the tick is important (and that's where you can help provide valuable assistance to your clients).

Now . . . all of that said, there are some important facts to pass along to your clients before they rush to spend \$60 to \$100 for these tick tests.

Note the disclaimer posted at the bottom of Rhode Island website. "The testing of ticks for the presence of the bacteria that causes Lyme disease has no role in the clinical diagnosis of Lyme disease."

In other words, just because the tick tests positive for a pathogen or even multiple organisms, it does not mean that they transmitted the organisms while feeding (assuming that the tick had indeed fed before it was discovered). Typically, pathogen transmission requires 6 to 36 hours of feeding by the tick (depending on tick species and the particular pathogen). The results of such tests may alert the person's doctor to specific tick-borne diseases, the symptoms to watch for and the potential health risks to that patient. In some cases, this may be helpful by reducing unnecessary prescription of preventive antibiotic treatments. **BUT**, we need to emphasize to people that common sense and the tick-prevention steps outlined above are far more important of as priorities than relying on some analytical test to determine if a tick might be carrying disease organisms.

You can find additional information about ticks and tick-borne diseases at the following sites (which also have additional links):

- <http://insects.ncsu.edu/Urban/ticks.htm>
- <http://www.deh.enr.state.nc.us/phpm/index.htm>

INSECT TRAP DATA

From: Curtis D. Fountain, Agricultural Extension Agent, Duplin County

Light Trap Data from Duplin County

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*****
                        Number of Adult Insects
                        *****
Date                   BW           GSB           BSB
*****
July 2                 0             0             0
July 4                 1             4             0
July 7                 1             8             0
July 9                 0             6             0
July 11                0            12             1
*****

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BW = cotton bollworms; GSB = green
stink bugs; BSB = brown stink bugs

Trap location: approximately two miles east of Albertson
Cooperator: Justin Murphy

From: Alan A. Harper, Lenoir County

Light Trap Data from Lenoir County

June

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*****
                        Number of Adult Insects
                        *****
Date                   HW           CEW           ECB           AW           AWC           GSB           BSB           TBW
*****
June 1                 0             2             0             0             0             0             0             0
June 2                 0             3             0             0             0             1             0             0
June 3                 0             1             0             1             0             3             0             0
June 4                 0             1             0             0             0             3             0             0
June 5                 0             2             0             0             0             2             0             0
June 6                 0             3             0             0             0             0             0             0
June 7                 1             1             0             0             0             2             4             0
June 8                 1             2             1             1             0             1             1             0
June 9                 0             2             0             1             1             4             2             0
June 10                1             2             0             1             1             2             1             0
June 11                1             2             0             1             1             1             1             0
*****

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June 12	0	1	0	1	1	0	0	0
June 13	0	2	0	1	1	0	0	0
June 14	0	1	1	0	2	0	0	0
June 15	0	2	2	0	0	2	2	0
June 16	0	3	1	0	0	1	0	1
June 17	0	0	0	0	2	1	0	0
June 18	1	2	0	0	2	1	0	1
June 19	0	0	0	0	1	0	0	0
June 20	0	2	2	0	1	0	0	0
June 21	0	3	0	0	3	0	0	0
June 22	0	6	1	0	0	2	0	0
June 23	1	3	1	0	2	3	0	0
June 24	0	2	0	0	3	0	0	0
June 25	0	4	2	0	3	0	1	0
June 26	1	1	0	0	4	1	0	0
June 27	0	1	1	0	0	0	0	0
June 28	0	2	0	0	0	1	0	0
June 29	0	2	0	1	3	2	0	0
June 30	1	0	0	0	2	0	0	0

July

Number of Adult Insects

Date	HW	CEW	ECB	AW	AWC	GSB	BSB	TBW
July 1	0	4	0	2	5	0	0	1
July 2	1	1	1	0	3	0	0	0
July 3	0	1	2	0	7	0	0	0
July 4	3	1	3	0	4	2	0	0
July 5	1	0	0	0	2	0	0	0
July 6	2	6	4	0	4	1	0	0
July 7	1	4	0	0	3	0	0	0
July 8	3	2	2	0	0	2	0	0
July 9	2	2	3	0	2	0	0	0
July 10	3	2	1	0	0	0	0	0
July 11	3	2	3	2	1	0	0	0

Abbreviations: HW = hornworms; CEW = corn earworms; ECB = European corn borers; AW = true armyworms; AWC = armyworm complex; GSB = green stink bugs; BSB = brown stink bugs; TBW = tobacco budworms

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 North Carolina State University, North Carolina A&T State University or 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 regulations and examine a current product label before applying any chemical. For assistance, contact an agent of North Carolina Cooperative Extension.

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