

# 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.

### *In This Week's Issue . . .*

#### **FIELD AND FORAGE CROPS**

- General Situation for Cotton
- Spider Mites on Cotton
- Plant Bugs and Cotton Aphids
- Are Stink Bugs Coming?
- Corn Earworm Moth Flights
- Additional Cotton Scouting Schools

#### **FRUIT AND VEGETABLES**

- Agrian.com: A Free, Comprehensive, Searchable Pesticide Label Database, and More

#### **ORNAMENTALS AND TURF**

- Tiger Beetles
- Cicada Killer Wasps
- The First Fall Webworm Race is On
- Pompilid Spider Wasps
- Note about Cicadas and Advertising

#### **INSECT TRAP DATA**

- Light Trap Data from Lenoir County

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[http://ipm.ncsu.edu/current\\_ipm/pest\\_news.html](http://ipm.ncsu.edu/current_ipm/pest_news.html)

## **FIELD AND FORAGE CROPS**

From: Jack Bacheler, Extension Entomologist

### **General Situation for Cotton**

Although most of our cotton is still on the late side, a few scattered cotton fields across the state have begun to flower earlier this week. However, most of our cotton will probably initiate blooming between July 6 and 15, or so. With our high degree days and sunny weather, cotton is catching up fast, although continued water shortages will begin to leave their mark as blooming gets underway.

### **Spider Mites on Cotton**

As one might expect with the continued dry weather, more reports of spider mites have been received this past week. So far, most mite outbreaks have been sub-economic, with primarily the early yellowish speckling reported in just parts of cotton fields. Our very dry corn in many areas of the state could provide a significant source of adult mites into cotton fields because of their odd dispersal habit of crawling to upper leaves in large numbers, putting out silken threads from the ends of their abdomens, and drifting out across the landscape on these webs. This phenomenon is referred to as “ballooning” and can at times be a source of significant mite dispersion. Mowing ditch banks and road rights of way can also trigger mite movement into cotton fields. In most of these situations, mites are more abundant around field edges, though often less so in reduced tillage cotton fields. If field conditions are favorable for establishment, mites often appear to show up “out of nowhere,” perhaps owing to low, widely scattered undetected mite populations that then increase - sometimes just a few days, but under other conditions it may take weeks. We sprayed a cotton field with a pound (of active ingredient) of Orthene last week in Wayne County to encourage cotton aphid development for a test. What we got in just 5 days was a widespread mite infestation. Now this field will make a nice mite test.

Mites are not so nice for growers, however. As we mentioned last week, spraying is probably justified when leaf discoloration is noticeable (such as yellow speckling or bronzing), some lower leaves have begun to fall, and live mites are present in 25 percent or more of the field. Figure 1 probably indicates a treatable situation if a mite infestation of this intensity were present in a significant part of a cotton field. If treatment is indicated, this is one pest that is far more effectively controlled with high gallonage and pressure; for example, 20 gallons per acre and 60 to 90 pounds per square inch pressure, if possible, as most adult and nymphal stage mites are on the undersurfaces of leaves. Reevaluation at 5 to 7 days following a mite application is strongly advised as two applications are sometimes needed. Significant rainfall is be a real blessing in reducing mite levels, so delay the application and reevaluate 3 to 4 days after the rain.



**Fig. 1. Heavy mite infestation in cotton. Photo credit: Anonymous**  
(<http://www.ipmimages.org/images/768x512/4387045.jpg>).

Dicofol (formerly sold by Dow under the trade name Kelthane) has been our “go to” product for the past few decades; however, Oberon and Zeal have also showed good activity in some tests. Although bifenthrin (Capture, Brigade, Discipline, and probably other products) has shown good mite activity in some tests, some mite populations have now become resistant to this chemical.

### **Plant Bugs and Cotton Aphids**

I continue to have scattered reports of treatable levels of plant bugs, but things seem quiet so far on the aphid front. Most cotton aphid treatments, however, are made in July in North Carolina, so this might be a good pest to keep an eye on in the coming weeks.

### **Are Stink Bugs Coming?**

A few days after blooming begins, we suggest initiating small boll evaluations for internal boll damage from stink bugs. Although, technically, initial bolls will not develop into the target quarter-sized bolls for 10 to 12 days, for the initial week of scouting when blooming begins it may be advisable to open these smaller bolls for the first scouting trip in the event that a high stink bug population is already present. For the most part, however, scouts should concentrate on weeks 3 to 6 of blooming when stink bug are typically far more damaging. So far, brown and green stink bugs appear to be at higher levels than in 2007. I’ll have more on the stink bug situation and scouting procedures in the coming weeks.

### **Corn Earworm Moth Flights**

Our major corn earworm moth flights, although expected to be early this year, will not begin in southern North Carolina until approximately July 12 to 15.

## Additional Cotton Scouting Schools

I still have not received the times for the Northampton County and Halifax County cotton scouting schools, but both will be held on July 22. On July 24, we will have the Edgecombe County, Nash County and Wilson County area school in Elm City. I'll provide more details in next week's newsletter.

## FRUIT AND VEGETABLES

From: Gerald J. Holmes and Frank J. Louws, Extension Plant Pathologists

### **Agrian.com: A Free, Comprehensive, Searchable Pesticide Label Database, and More**

Where do you go to find out what is labeled for use on a particular crop to control a particular disease, insect or weed? For many years, Extension specialists have painstakingly poured over pesticide labels and arranged them into tables and published them in various hard copy formats (e.g., the *North Carolina Agricultural Chemicals Manual* or *Southeastern Vegetable Handbook*). These have been our trusted reference materials for many years. The problem with these formats is that it is virtually impossible to show a complete listing of all the products labeled for a specific purpose. And even if it could be done, it would be out of date before it leaves the printer, because of the continuous flow of information and the large number of products involved.

For as long as we have been involved with authoring these hard copy lists of pesticides (15 years), we have desperately longed for something better. Something that doesn't require manually entering minute details of labels into tiny boxes. Something that isn't outdated minutes after completion. Something that could be searched more efficiently and be more complete.

Agrian.com's label search function boasts the most comprehensive assemblage of agricultural chemicals labels of any database out there (over 4,000 products from 133 manufacturers). The labels have been parsed into an online database so that they can be searched by crop, pest and location. For a test drive of this feature, go to [www.agrian.com](http://www.agrian.com) and click on the "AGRIAN Label—click here to begin search", then select the "Advanced" tab at the far upper right. Type in "tomato" in the "Registered Crop" box and "late blight" into the "Registered Pest" box, then click "Search" in the lower right. Moments later you'll get a list of 81 products labeled for use against this disease. From the list you can click on any of these products to get the details (rates, manufacturer, active ingredient, safety information, etc.) or to download a full PDF of the label.

This label search tool is only the beginning of the Agrian website. There are powerful field mapping and reporting tools for crop advisors and growers and much more, and it's all free of charge. The label search can be done without a password, but the other features require a password that can be obtained in seconds. For us, the "Label Search" tool is powerful enough to stand alone as an indispensable tool in agriculture.

## ORNAMENTALS AND TURF

From: Steve Bambara, Extension Entomologist

### Tiger Beetles

Tiger beetles (Fig. 2) are so named because of their predatory behavior. They have relatively long legs and can run rapidly. Tiger beetles also fly readily and rapidly and usually fairly close to the ground. Tiger beetles in the genus *Cicindela* are daytime animals and are active in sandy, sunny locations, especially along pathways. The tiger beetle grub digs a burrow and blocks the opening with its flattened, round head. Whenever a hapless insect walks by, the tiger beetle grub reaches out and snatches the unfortunate creature. Most of the tiger beetles in the genus *Cicindela* are metallic blue or green or gray. Many also have spots and bars that remind one of the markings of a tiger. We have never heard of anyone being bitten by a tiger beetle, and they cannot sting. No control measures seem to be warranted.

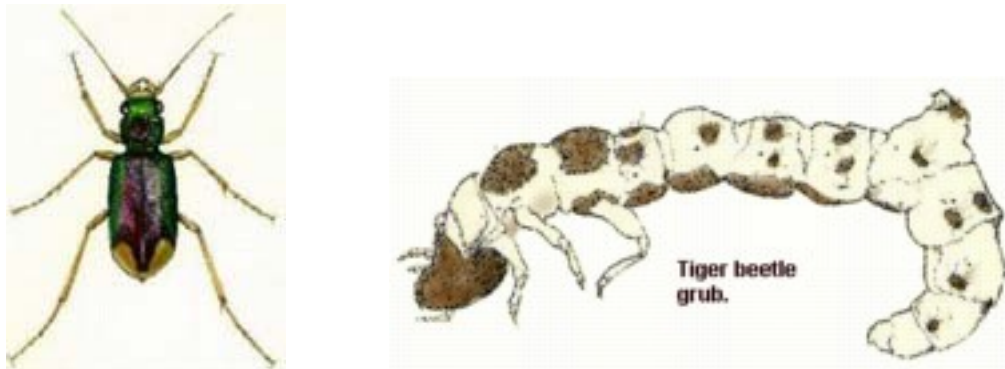


Fig. 2. Tiger beetle adult and grub. Image and drawing by James R. Baker.

### Cicada Killer Wasps

Cicadas are prey of cicada killer wasps. The cicadas are now out, so these predatory wasps should not be far behind. I've heard of them in South Carolina and Florida already this season. The cicada killer wasp uses cicadas to provision its nest. Cicadas are caught and stung by the wasp (Fig. 3), then dragged back to the nest. Once in the nest, the female wasp lays her eggs on the cicada. Soon the wasp hatches from each egg and feeds upon the cicada. When mature, the wasp larvae pupate and another generation of wasps emerges to carry on the life cycle. This is one of our most "showy" wasps and the sight and sound of a swarm of them in a yard is indeed impressive. Although these wasps appear to be ferocious, we know of no one who has ever been stung by them. (No, wait. Last year a woman from Texas refuted me when she said she accidentally was caught up with one.) The females have an impressive stinger (males do not sting). Since they control cicadas, these wasps can be regarded as beneficial. *Ornamentals and Turf Insect Note No. 63* has some additional information on the biology and control of cicada killer wasps (see <http://www.ces.ncsu.edu/depts/ent/notes/O&T/lawn/note63/note63.html>). Also, copies of this insect note should be available at each county Extension center in North Carolina.



**Fig. 3. Cicada killer wasp with cicada. Image by James R. Baker.**

### **The First Fall Webworm Race is On**

We usually think of the fall webworm as a tree foliage pest of late summer/early fall. That is generally true. However, what was once thought to be a first generation may really be a different race of fall webworm that comes out earlier. There seems to be enough evidence from Kansas State University entomologists to support this hypothesis. True or not, and earlier than I remember, this week I've noticed the beginnings of fall webworm webbing on sourwood (Fig. 4). Though it webs other trees, sourwood, pecan and persimmon are among its favorite hosts.



**Fig. 4. Young fall webworm caterpillars on sourwood. Image by Steve Bambara.**

Fall webworm damage accrues over the summer. They usually cause little long-term damage to the health of the trees they defoliate unless the trees are completely defoliated year after year. At any one location, the populations of fall webworms wax and wane so that they are conspicuous and damaging for a year or two and then the populations seem to disappear.

Through the summer, the webs become filled with cast skins, droppings and dead leaves. The web is enlarged to encompass fresh, green leaves until the web may become two to three feet in length. Small trees infested with several broods of caterpillars may be entirely enclosed in webs.

After feeding for four or five weeks, the caterpillars make it to the ground, spin cocoons and pupate in mulch or soil and continue the life cycle. There are two or three generations each year in North Carolina depending upon how early or late in the spring the first moths emerge. They overwinter as pupae in cocoons in the litter.

White moths emerge to mate and lay 350 to 900 eggs on the lower leaf surface. The hairy caterpillars spin the webs as they feed. Fall webworms can be destroyed by pulling down the webs and destroying the caterpillars if the webs are in reach of a pole. If the webs are within reach of a hose-end sprayer, several insecticides can be sprayed for control. Insecticides work best when the caterpillars are young. Thus it is best to treat as soon as the webs are first noticed. If the trees are too tall for equipment used by the amateur horticulturist, many professional landscapers and arborists offer tree spraying as a part of their services. *Bacillus thuringiensis* and Orthene are two of several pesticides labeled for fall webworm control, but there are other choices.

*Ornamentals and Turf Insect Information Note No. 46* has additional information on the control of fall webworms (see <http://www.ces.ncsu.edu/depts/ent/notes/O&T/trees/note46/note46.html>). You can also view a short QuickTime clip accessible through the Internet at: <http://www.ces.ncsu.edu/depts/ent/notes/O&T/shrubs/note07/fallwebworm.MOV>.

### Pompilid Spider Wasps

Pompilid wasps, also called spider wasps (Fig. 5), are completely or mostly black and metallic in color and are often territorial. They prey on spiders to feed their young. The wasp stings the spider to paralyze it. It then drags the spider to its nest in the ground. Next, the wasp lays an egg on the spider. The egg hatches into a larva and the larva consumes the spider. Phil Rau reported several instances of unusual behavior of a pompilid wasp that uses water to ferry a too-large paralyzed spider to its burrow [Phil Rau, "Pompilid Wasps and Prey-Transportation by Water," *Psyche*, Vol. 41, No. 4, pp. 241-242, 1934].



Fig. 5. Probable *Pepsis* sp. spider wasp. Photo by B. Watson.

## Note about Cicadas and Advertising

After last week's article about annual cicadas, Extension agent Mike Wilder pointed out that it appeared as if a well known fast food chain has been paying cicadas to advertise by carrying their logo on the top of their thorax (Fig. 6). As far as we know, there is no truth to this.



**Fig. 6 Annual cicada. Image by James R. Baker.**

The species of cicada pictured in Figure 5 is probably *Diceroprocta vitripennis*. His friends call him “Big Mac.”

## INSECT TRAP DATA

From: Alan A. Harper, Lenoir County

### Light Trap Data from Lenoir County

June								
*****								
Number of Adult Insects								
*****								
Date	HW	CEW	ECB	AW	AWC	GSB	BSB	TBW
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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
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

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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

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*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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