

North Carolina Pest News

Departments of Entomology and Plant Pathology



Volume 26, Number 10,
June 17, 2011

In This Week's Issue . . .

CAUTION !

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

Stephen J. Toth, Jr.,
editor

Dept. of Entomology,
North Carolina State
University, Box 7613,
Raleigh, NC 27695

(919) 513-8189 Phone
(919) 513-1114 Fax
steve_toth@ncsu.edu

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

ANNOUNCEMENTS AND GENERAL INFORMATION

Hay Field Day Scheduled for July 19 in Waynesville

The Hay Field Day, sponsored by the North Carolina State University's College of Agriculture and Life Sciences, will be held on Tuesday, July 19, 2011 at the Mountain Research Station in Waynesville, North Carolina. For more information, including a list of events and directions to the station, go to <http://www.cals.ncsu.edu/agcomm/news-center/extension-news/n-c-hay-field-day-set-for-july-19/>.

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FIELD AND FORAGE CROPS

From: Jack Bacheler, Extension Entomologist

General Cotton Insect Outlook

Even with our continued hot, dry weather, the cotton crop generally looks fair to good for most producers, but the crop is struggling in places. Hopefully, we're in a bit of a lull, insect-wise, for the time being.

In the June 10, 2011 issue of the *North Carolina Pest News*, we reported a couple of outbreaks of cotton fleahoppers and false chinch bugs. Although outbreaks of unusual less common cotton pests are interesting and occur every year on at least limited acreage, most attention is directed to those pests which have a far higher likelihood of causing economic damage. For the next few weeks or short months, this list includes plant bugs, spider mites and cotton aphids. At this point in the season, these pests have not yet tipped their appendages about whether one or more will cause major headaches for some producers this growing season.

Based the past five years' experience, relatively limited cotton acreage is treated for these pests – approximately 8% for plant bugs and cotton aphids and approximately 4% for spider mites. However, damage from any one of these insects can be a severe in a given year or location.

Plant Bugs on Cotton

Our most efficient way of “zeroing in” on economic infestations of plant bugs with our often low plant bug levels is to take weekly square retention counts. Examine a terminal and an upper lateral square of approximately 1/3 inch in length per plant for a total of at least 50 squares. Count any blackened, brownish or yellowing squares or scars as a missing square. If square retention counts are more that 80%, no further assessments are needed that week. If early square retention is less than 90%, an additional assessment should be taken within 3 to 4 days. If square retention is less than 80%, sweep net sampling is recommended to determine if plant bugs are the cause of the square drop. An average of 8 or more adult plus nymph-stage plant bugs per 100 sweeps may indicate the need to spray. Over the years, plant bugs have been more of a problem near Irish potato fields and further east in North Carolina. Plant bugs are often attracted to lush cotton fields.

Spider Mites on Cotton

Although yield-reducing levels of spider mites are not common on cotton in North Carolina, outbreaks can be a major pain in the neck. Mite damage appears as a slight yellowing or stippling of the leaves (Fig. 1), which later changes to a purplish or bronze color, and finally results in significant leaf drop of lower yellowing leaves. Even with obvious yellowing and defoliation, the presence of an active mite population in the field should be confirmed before treating. A hand lens of 10x magnification or greater is indispensable when scouting for these tiny arthropods and their eggs and in identifying the fungal parasite (if the fungus is present and/or rain is imminent, withhold treatment and scout again in 3 to 4 days). In treating for mites, one to two expensive applications with excellent coverage are sometimes

required and often provide only fair control. With generally hot dry weather and extensive use of seed treatments, we could well be setting the stage for an above average mite year for cotton producers.



Fig. 1. Characteristic yellowish stippling caused by spider mites. Image by Jack Bacheler.



Fig. 2. Green lacewing larva. Image from the University of Florida (anonymous).



Fig. 3. Aphelinid wasp and aphid mummies. Image by Dan Mott.



Fig 4. Close-up of parasitic cotton aphid fungus. Image by Jack Bacheler.

Cotton Aphids

In most years, North Carolina cotton producers experience a combination of a low spray environment, a fair to good level of beneficial insects, and weather conditions favorable to controlling cotton aphid outbreaks. The combination of small predators (Fig. 2), the aphid-mummifying parasitic wasps (Fig. 3) and the mid to late July presence of the fungus (Fig. 4) often keep cotton aphids at sub-economic levels. Treatment often pays when most plants in a field are stressed by a combination of both heavy aphid levels and droughty conditions. In insecticide testing for cotton aphid control, the untreated checks often yield as well as the better treatments if moisture is adequate to good.

Cotton and Soybean Insect Scouting Schools

Northampton County: Jackson, North Carolina on July 18, 9:30 a.m. at the Extension offices located at 9495 NC Highway 305. For details, contact Craig Ellison by telephone at 252-534-2831 or electronic mail at craig_ellison@ncsu.edu.

Halifax County: Halifax, North Carolina on July 18, 2:00 p.m. at the County Government Center, 359 Farrell Lane. For details, contact Arthur Whitehead by telephone at 252-583-1683 or by electronic mail at arthur_whitehead@ncsu.edu.

Both indoor and outdoor training will be provided. These educational programs are offered to the public without a fee.

From: Dominic Reisig, Extension Entomologist

Kudzu Bugs Found in More North Carolina Counties

Kudzu bug (a.k.a. bean plataspid, *Megacopta cribraria* Fabricius, Fig. 5) has recently been confirmed in Buncombe and Polk Counties (Fig. 6). Most of the recent finds have been from kudzu, but it is found on a variety of legumes, with soybean as its main agronomic host. These samples (Fig. 7) were sent to me from Sean Cradle of the North Carolina Arboretum in Asheville.

Kudzu bug has been confirmed on soybean in North Carolina and the pattern of spread is mirroring that of South Carolina in 2010. This is the distribution map from July of 2010 (Fig. 8). Compare this with the current distribution map in Fig. 6 and the situation for our state starts to look scary.



Fig. 5. Kudzu bug adults (in the two pictures on the left) and nymphs (picture on the right). Images from J. Greene.

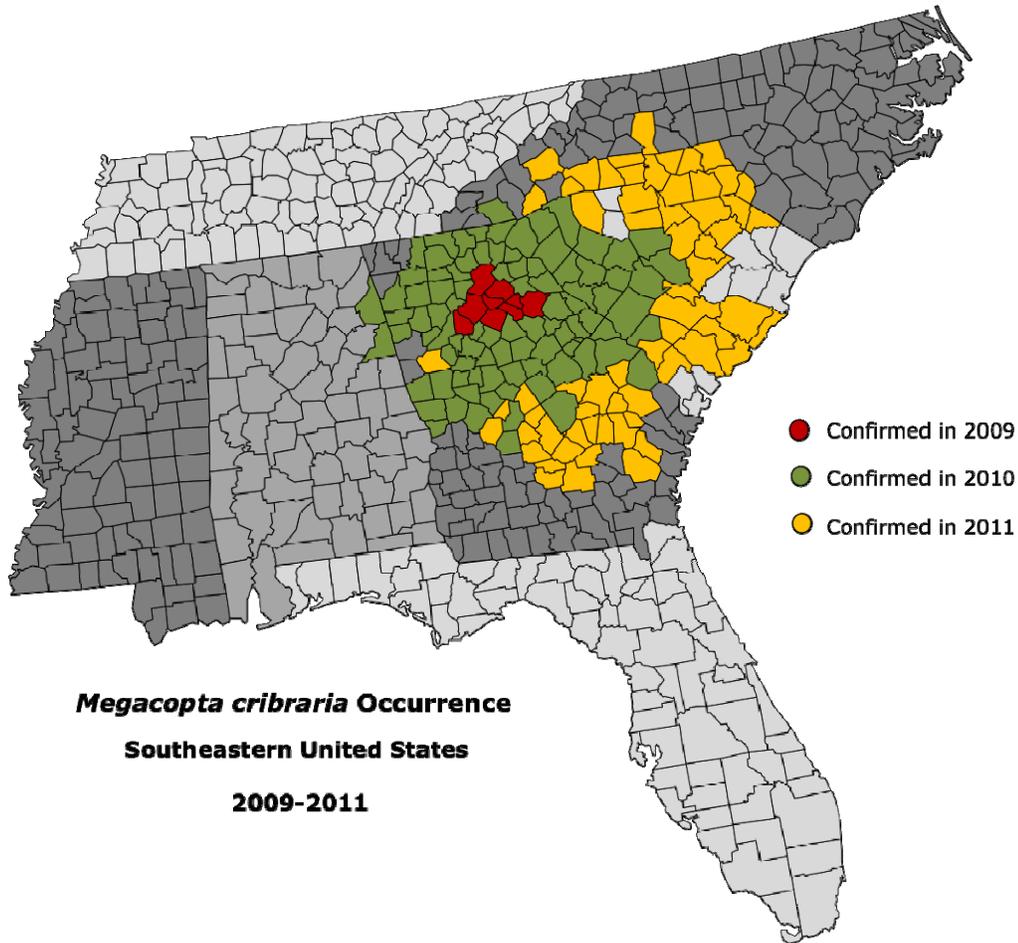


Fig. 6. Confirmed kudzu bug distribution. Image adapted from Wayne Gardner.



Fig. 7. Kudzu bug nymphs (dead) and eggs on a legume (corkscrew vine) leaf. Notice that the eggs to the right in the photograph have hatched. Images from Dominic Reisig.

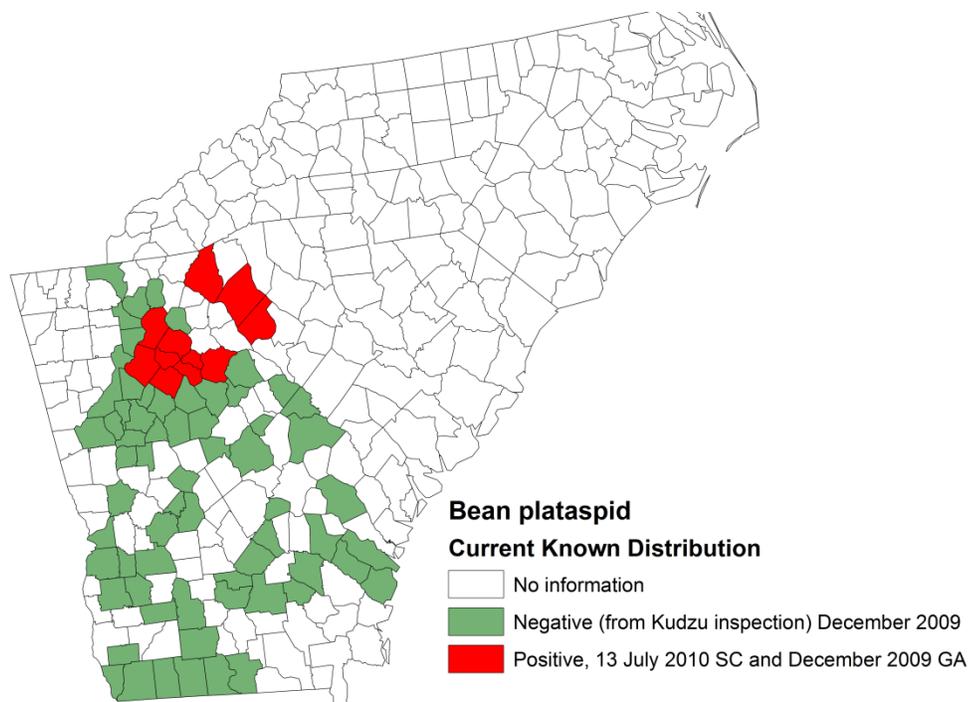


Fig. 8. Kudzu bug distribution in July 2010. Image from Dominic Reisig.

So far, kudzu bug has been relatively easy to kill with insecticides (except with neonicotinoids), but will often reinvade. A preliminary economic threshold, based on Georgia data, is one bug per sweep with large nymphs present, or three bugs per plant with large nymphs present.

We are tracking this pest and would appreciate you contacting Dominic Reisig (electronic mail: dominic_reisig@ncsu.edu; telephone: 252-793-4428 x133) if you find this pest in a non-confirmed county. If you could also provide GPS coordinates, **as well as the plant on which it was found**, it would enhance our ability to respond to this new threat. Please use caution not to spread this pest from field to field if you find this pest.

From: Steve Bambara, Extension Entomologist

Voliam Xpress and Prevathon Now Registered in North Carolina

This may not be news to many of you, but Voliam Xpress, a Syngenta product, is registered in North Carolina for use on alfalfa, pasture, rangeland, grass forage, fodder and hay. You may be familiar with it for use on other crops such as corn and cotton.

It is a *Restricted Use Pesticide* with the active ingredients of Lambda-cyhalothrin + Chlorantraniliprole. The preharvest interval (PHI) for rangeland and grass is 0 days. For alfalfa the PHI is 1 day for forage, and 7 days for hay. Most of the common pests of these crops are listed on the label. Be sure to read it.

Prevathon, a new Dupont product containing Rynaxypry (Chlorantraniliprole), just appeared this week on the Kelly Registrations list of pesticides registered in North Carolina. There is no official caution

statement on this product. But . . . "Keep out of reach of children." It can be used on grass or pasture, fodder or hay. It may also be used on alfalfa, clover, vetch, etc. This product is useful against any of the armyworm complex. The PHI is 0 days. The re-entry interval (REI) is 4 hours.

ORNAMENTALS AND TURF

From: Steven Frank and Dominic Reisig, Extension Entomologists

Kudzu Bugs on Ornamental Plants

Kudzu bugs have recently been confirmed on kudzu from several North Carolina counties. In addition, it has been reported from the North Carolina Arboretum on Snail Vine and Wisteria, which are ornamental legumes. Soybean is the main agronomic host for this insect, but it looks as though the ornamental industry will have to start monitoring for this pest on certain crops and in landscapes. Control measures for ornamental crops are not well known. Efficacy testing is being conducted in soybeans where pyrethroid insecticides have been shown to be effective.

This will be an evolving issue for ornamental growers and landscapers. The kudzu bug also makes itself a nuisance in buildings. For more information and pictures, check out the following websites:

<http://www.caes.uga.edu/departments/ent/upmp/documents/KudzuBugCircular991.pdf>

<http://agfax.com/Content/north-carolina-kudzu-bug-06122011.aspx>

http://agfax.com/LibRepository/Clemson_University_Cotton_Soybean_Insect_Newsletter_0616.pdf

Follow @OrnaPests on Twitter for timely updates on ornamental pest activity.

From: Adam G. Dale and Steven Frank, Department of Entomology

Bagworms Active in Raleigh

The bagworm, *Thyridopteryx ephemeraeformis*, is a very common ornamental pest throughout the eastern United States (Fig. 9). These pests overwinter as eggs within the mother's bag. Larvae emerge from the bag during the months of May and June. Once they have emerged, they crawl or drift via a silk strand to nearby foliage where they begin to establish feeding. Bagworms are relatively sedentary during their lifetime, most often remaining on the same tree until they pupate. Adult females are wingless and never leave the tree, while male bagworms pupate and develop into a small brown moth.



Fig. 9. Bagworm. Image by Adam G. Dale.

Bagworms feed on plant foliage and can cause a significant amount of damage in a relatively short period of time. Some common trees that they infest include: maple, sycamore, oak, poplar and apple, while they mostly prefer conifers. The early instar caterpillars produce a silk bag on their posterior end that gradually collects plant tissue debris from them feeding. This creates a leafy bag that camouflages them as plant tissue. Since they don't move much during their lifetime, they are commonly found in dense populations within the same tree. These dense populations have the potential to kill conifers within one to two seasons due to defoliation and are found more often on ornamental trees rather than in forests.

Since they are so discrete and easily mistaken for plant tissue, pest management for these insects can be difficult and/or time consuming. One of the most effective, yet time consuming methods of treatment are hand-picking or cutting the female pupae bags off of the branches. Since this may sometimes be impractical or impossible, there are other methods of treatment to be considered. There are chemical control options available that should be applied during the early instar stages of the caterpillars typically during June and early July. As with many other pest insects, bagworms are susceptible to predation from parasitoids and birds which can also assist in their control. Now that there has been evidence of these early instar bagworms, it may be time to take action against them.

For more information, see <http://ipm.ncsu.edu/AG189/html/Bagworm.HTML>.

From: Steve Bambara, Extension Entomologist

Its Name Is Mud Dauber

Last week the mud daubers exploded at my back porch. The common and beneficial organ pipe mud dauber, *Trypoxylon politum*, is a dark blue metallic, solitary wasp. With this species, females build elongate, tubular (far out man!) mud nests under shaded overhangs and eaves. Nests may be clusters of longitudinally touching tubes that resemble pipes of an organ (Fig. 10).



Fig 10. Organ pipe mud dauber nest, front and back. Images by Steve Bambara.

Females will "attack" a mud spot, scoop some up and move it to the forelegs for carrying. It may take several scoops to secure a full load. She then flies to a desired spot and forms a band of mud on the opening of each tube. Bursts of (annoying) buzzing that are akin to a trip to the dentist are often amplified by substrate and the echoes of the forming tube. As she builds, the female provisions the nest with paralyzed spiders in each cell for the future offspring to eat. They most often hunt orb-weavers and crab spiders. Males may stay in the nest to protect it. The females only visit to provision and construct it. The males cannot sting, and the females rarely do (or would). They are not defensive and are not like paper wasps in this behavior.

Other related species may build clumps of mud instead of pipes, and specialize on different prey.

Nano Pesticides Are Not Overlooked

The U.S. Environmental Protection Agency (EPA) announced recently that it plans to obtain information on nanoscale materials in pesticide products. Under the requirements of the law, EPA will gather information on what nanoscale materials are present in pesticide products to determine whether a pesticide's registration may cause unreasonable adverse effects on the environment and human health.

The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and EPA's implementing regulations provide an effective framework for regulating pesticide products that contain a nanoscale material. Currently, the EPA's Office of Pesticide Programs (OPP) describes a nanoscale material as an active or inert ingredient of a pesticide and any component parts thereof intentionally produced to have at least one dimension that measures between approximately 1 and 100 nanometers.

The special properties that make nanoscale materials of potentially great benefit also can present new challenges for risk assessment and decision-making. For instance, their small size may allow them to pass through cell membranes or the blood-brain barrier, possibly resulting in unintended effects.

For the full announcement, go to:

<http://yosemite.epa.gov/opa/admpress.nsf/eeffe922a687433c85257359003f5340/05ff063e9205eb3c852578aa005aa0f8!OpenDocument>

From: Steve Bambara and Steven Frank, Extension Entomologists

Warm Season Spider Mites

Keep your eye out for upcoming spider mites before they create damage (Fig. 11). Spider mites (Fig. 12) are tiny, warm season arthropods that insert their tiny, scissor-like mouthparts into leaves and petals and cause tiny yellow spots to form as they suck out the contents of the plant cells. Hot, dry weather apparently inhibits parasitic fungi and accelerates the life cycle of the spider mites. Roses, daylilies, butterfly bushes, certain euonymus and bedding plants are often infested by spider mites during the summer. Because spider mites flair up in dry weather their control is somewhat difficult. Horticultural oils and insecticidal soaps are great contact miticides. Plants that are slightly wilted are more susceptible to pesticide injury than well-watered, turgid plants. Also, plants are much more likely to be burned if

pesticides are applied during midday. Plants should be watered thoroughly before spraying them with pesticide and should be sprayed in early morning or late afternoon so that the pesticide residue is dry before the bright sun hits it.



Fig. 11. Spider mite damage on daylily. Image by Steve Bambara.



Fig. 12. Twospotted spider mite. Image by Dave Cappaert (<http://bugwood.org>).

Horticultural oils and soaps are moderately toxic to spider mites and they are relatively safe for humans. Soaps and oils have virtually no residual activity so both pesticides must be applied two or three times for complete control (about 5 days between sprays). Horticultural oils have been shown to be less harmful to beneficial predatory mites. For commercial folks, there are many choices. Avid is now labeled for spider mites outdoors except on coniferous evergreens. Floramite is a good miticide for mobile stages and is labeled for greenhouse, nursery, and landscape use. It is also compatible with many beneficial organisms. Don't forget the newer products such as Kontos and Sirrocco.

The predatory mite *Phytoseiulus persimilis* can give good twospotted spider mite control in the greenhouse and may work against this mite in Southeastern landscapes and nurseries because it prefers higher temperatures and relative humidities compared to other predatory mites. It may be a long season!

For information on the twospotted spider mite, see *Ornamental and Turf Insect Information Note No. 25* at <http://www.ces.ncsu.edu/depts/ent/notes/O&T/flowers/note25/note25.html>.

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.