



North Carolina Pest News

Departments of Entomology and Plant Pathology

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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.

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FIELD AND FORAGE CROPS

From: Jack Bacheler, Extension Entomologist

Stink Bug Management in Cotton

Recent better rainfall patterns and moderate to high present levels of stink bugs could indicate that these pests will soon infest cotton fields at greater levels than in recent years here.

Stink bug scouting procedures and thresholds are well defined in the Southeast. By following the dynamic threshold, producers and consultants can focus on times during the bloom period when cotton is most susceptible to yield-reducing boll damage. Scouting for stink bug damage to quarter-sized bolls has been made much more efficient through the use of the *Stink Bug Decision Aid Field Card* (http://ipm.ncsu.edu/cotton/insectcorner/PDF/AG_730_WPrint-NC.pdf). This card lists the internal boll damage thresholds by week of bloom, provides straightforward scouting steps, has a template for selecting the correct size boll and has images of internal stink bug damage. The cards will be available at our cotton/soybean scouting schools to be held in the next few weeks (see dates and locations below) and also can be viewed at our *Cotton Insect Corner* web site under “What’s New” (<http://ipm.ncsu.edu/cotton/insectcorner/new.htm>). In a nutshell, cotton is particularly susceptible to boll damage during weeks 3 through 5 of the bloom period. During this time, we recommend that producers use a protective threshold of 10% internal damage to bolls. Thresholds before and after this 3-week window are higher (but also can be reached), indicating that higher damage levels to quarter-sized bolls can tolerated during periods of fewer susceptible bolls. Count both inner boll wall surface warts and any stained lint as a damaged boll, even if this damage is slight. Recent damage may be subtle initially.

Cotton Aphids and Spider Mites on Cotton

With most areas of the state receiving significant rainfall this week, we hope our recent trend of building mite levels will be reversed. Also, where cotton aphid outbreaks are present, plant stress should also be down significantly due to good moisture levels, lessening the odds of yield loss. Dominic Reisig, Extension Entomologist, reported that two eastern North Carolina consultants had noted less than expected cotton aphid control with a different chloronicotinoid. If poor control is noted with a chloronic (e.g., Centric, Admire Pro) one option is to use Carbine which has a different mode of action. If past years are a guide, the aphid fungus is more likely to become established as mid to late July approaches.

Plant Bugs in Cotton

We have received several calls of upper square retention dropping to the 70 to 80% range, though in widely scattered cotton fields. In these cases, the middle and lower square retention was good to excellent and subsequent sweep net samples have been well under the protective threshold of 8 plant bugs per 100 sweeps. In most fields, square retention remains high, often in the 95% range. However, with our abundance of plant bug harboring weeds in ditch banks, on CRP land and other hosts, the potential for square and small boll damage from this pest in the coming weeks remains at least moderate, particularly in our far eastern counties. Once blooming has been underway for about a week, monitoring “dirty bloom” levels is an additional indirect means of determining if plant bugs may be present. As

opposed to a 20% dirty bloom treatment threshold for plant bug that was recommended a few years ago, dirty bloom levels above 10% or more can be used indicate the need to sample directly for plant bug adults and nymphs using a black ground cloth. A threshold of two to three plant bugs per sample (2.5 feet of two adjacent beaten into the row middle on which the ground cloth is unfurled) is recommended.



“Dirty bloom” resulting from prior plant bug feeding on large square.
Image by Jack Bachelor

Kudzu Bugs in Soybean

Based on the development of kudzu bugs on kudzu and in some cases on early planted soybean, the first field generation of adults should now be moving into to soybeans, with kudzu bugs showing up both in greater numbers and in soybean acreage not previously infested. We expect this adult migration into soybean to increase during at least the next 2 to 3 weeks. The presence of adults and all nymphal stages on kudzu at this time suggests that adult flights into soybean could take place over an even longer period than suggested above. In prioritizing soybean fields for scouting, expect earlier planted soybean fields to harbor higher numbers of kudzu bugs. The suggested treatment threshold for kudzu bugs is 15 nymphs per 15 sweeps averaged over 6 to 8 locations at least 50 feet in from field edges. This means that wise producers must put up with what appear to be high levels of kudzu bug adults before spraying based on nymph levels. A foliar spray directed against nymphal stage kudzu bugs offers growers their best odds of both maintaining yields and avoiding unneeded multiple applications for this new pest. Unneeded multiple applications for kudzu bug also increase the probability of a subsequent establishment of various caterpillar pests such as podworms, tobacco budworms, loopers and armyworms.

Upcoming Cotton/Soybean Combination Insect Scouting Schools

July 18: Bertie County at the Cashie Convention Center (*note location change*), Windsor, NC beginning at 9:00 a.m. Indoor and outdoor components and lunch provided. Contact Richard Rhodes (richard_rhodes@ncsu.edu or 252-794-5317) for details.

July 20: Perquimans, Gates, and Chowan Scouting School. Contact Tim Smith (tasmith4@ncsu.edu or 252-482-6585) for details.

July 24: Northampton County. County Extension Office, 9495 Highway 305, Jackson, NC, beginning at 9:30 a.m. Contact Craig Ellison (craig_ellison@ncsu.edu or 252-534-2831) for details

July 24: Halifax County. County Extension Center, 359 Ferrell Lane, Halifax, NC beginning at 2:00 p.m. Contact Arthur Whitehead (arthur_whitehead@ncsu.edu or 252-583-5161) for details.

July 26: Wilson, Nash and Edgecombe area scouting school, Elm City, NC, at the American Legion VFW Building, beginning at 4:00 p.m. Contact Norman Harrell (norman_harrell@ncsu.edu or 252-237-0111) for details.

Dr. Dominic Reisig has posted several additional field days and tours in the coming months (<http://www.nccrops.com/2012/06/01/upcoming-scouting-schools-and-field-days/>).

Save the Date: Cotton Field Day

This year's Cotton Field Day will be held at the Upper Coastal Plain Research Station near Rocky Mount on September 12, beginning at 12:30 p.m. with registration and exhibits, including field tours and concluding with a BBQ supper. More information will be forthcoming.

From: Dominic Reisig, Extension Entomologist

Yellowstriped Armyworms Present in Northeast North Carolina

Yellowstriped armyworm was first reported by my colleague Dr. Ames Herbert in Virginia this week (see http://agfax.com/2012/07/12/southern-soybeans-not-so-quiet-now-insects-building-agfax-southern-grain/?utm_source=rss&utm_medium=rss&utm_campaign=southern-soybeans-not-so-quiet-now-insects-building-agfax-southern-grain and scroll down the page). Like Dr. Herbert, most of what I have heard about is soybean fields in which the insect is present, but significant defoliation has not occurred. It is not uncommon for this insect to move into fields early on in our season, as they overwinter in North Carolina. Although they occasionally cause significant defoliation, they are not a major pest in our system.

Remember that our threshold for foliage-feeding insects, like yellowstriped armyworm, is based on percent defoliation throughout the canopy. We can tolerate a significant amount of defoliation in soybeans (see <http://wp.me/p1ExeQ-fi> for a guide to assessing percent defoliation in soybeans). The threshold for foliage feeding pests is 30% foliage loss throughout the canopy during the vegetative stages up to two weeks prior to flowering and 15% foliage loss throughout the canopy two weeks prior to flowering through the reproductive stages up to R6-R7. After this point, foliage loss is likely negligible.

Unlike beet and fall armyworm, if you reach the defoliation threshold and decide to treat for yellowstriped armyworm, pyrethroids should work well. Remember that this will kill all beneficial in the

system. Generally our major corn earworm moth flight begins around the middle to end of July. By eliminating beneficial insects in the system at this time of the year, you could be setting yourself up for problems with this insect or migratory caterpillars, such as soybean loopers and beet and fall armyworms. Therefore, insecticides should only be applied for yellowstriped armyworms as a last resort.



Yellowstriped armyworm larvae on a soybean leaf. This armyworm is easily identified by its dark body and yellow stripe running down the side. Small black triangles are present above the stripe. Image from Dominic Reisig.

Sweep Net Recommendations for Kudzu Bug

Kudzu bug adults have already begun the second migration into soybeans in southern North Carolina and we anticipate this to continue for 4 to 6 weeks. Remember that our threshold is based on nymph catches with the sweep net (see <http://www.nccrops.com/2012/07/12/what-to-expect-with-the-kudzu-bug-migration/> for threshold information). Because this insect feeds on the stem, not the foliage or pods, the sweep net will capture a different proportion of insects than you are used to. Below are some tips to help you capture a representative sample of insects in the field.

- Sweep between 11 a.m. and 3 p.m., when the insects are most active. Although our pod-feeding stink bugs do not move in the canopy throughout the day, the stem-feeding kudzu bug adults will move up the plant canopy and fly about during the middle of the day. Kudzu bug nymphs cannot fly and are much less mobile, but can still move around the plant. You will likely capture more insects with the sweep net during this time of the day.

- Our typical recommendation for a sweep net is to bury it just below the top of the canopy, sweeping all foliage in a pendulum fashion, with the top of the net even with the top of the plants. This works well for many soybean or cotton insect pests. However, because kudzu bugs are often located on the main stem, you should try to bury the sweep net deeper than normal into the canopy, brushing up against stems in the lower part of the plant.



Kudzu bug adults and nymphs are most often found on the main stem. Some feed on lateral stems and petioles and small nymphs may feed on the underside of leaves. Image from Alejandro Del Pozo-Valdiva.

- Bring a sharp pair of eyes with you to the field. Some of the smaller kudzu bug nymphs are round and green. At 1/10 of an inch long, these can easily get lost when you're counting through a sweep sample. Be sure to look carefully at any that may be hiding on dislodged leaves.
- Kudzu bug is an edge colonizing species. Take at least six samples in each field and do not begin sweeping until you are at least 50 feet into the field.



Kudzu bug nymphs on the underside of a kudzu leaf. Note the color and body shape change as the nymphs grow larger. Image from Alejandro Del Pozo-Valdivia.

From: Barbara Shew, Extension Plant Pathologist

Time for Peanut Disease Control

Leaf spots

Now is the time for peanut growers to begin foliar disease control programs. The first fungicide spray should go on when peanuts reach R3, or when about half the plants in a particular planting have at least one pod starting to develop. Most fields in North Carolina will be at or near R3 by now. In most cases, a group M (multisite) fungicide such as Bravo (chlorothalonil) or Tilt Bravo (groups 3 and M) should be used for the first spray in a 5-spray calendar leaf spot control program. You may be able to reduce the number of leaf spot sprays applied in a season by using the North Carolina leaf spot advisory after the first spray.



Example of a plant at R3 (very early pod stage).

Southern stem rot

Southern stem rot usually starts at the crown of the plant or on stems touching the ground near the crown. Infected stems are the color of a brown paper bag. The white fungus growth is thick, stringy, or fan-shaped. Later, fungus structures about the size and color of mustard seed will develop.



Signs and symptoms of southern stem rot.

Southern stem rot is very active in hot, wet weather. Most peanut fields benefit from applications of fungicides that control stem rot during the hottest part of the season – usually from mid-July to late August. In North Carolina, we recommend starting stem rot control at the second leaf spot spray, or approximately two weeks from now. Fields at high risk for stem rot problems – those planted to a highly susceptible cultivar like Gregory, irrigated fields, fields or cultivars where heavy vine growth can be expected, and fields that have a history of stem rot and/or vegetable production – may benefit from using a soil fungicide for the first spray. Foliar fungicides effective against stem rot include Abound (group 11) and Provost (group 3). Artisan (groups 3 and 7), Convoy (group 7) and tebuconazole (group 3) are also effective but must be mixed with a foliar fungicide such as chlorothalonil or Headline (group 11). Fontelis (group 7), which recently was labeled on peanut, also is active against leaf spots and stem rot.

Growers need to alternate fungicides from different groups or mix with a group M fungicide during the season to optimize leaf spot and stem rot control, and to avoid potential resistance problems. Remember that group 11 fungicides can only be applied twice in a 5-spray program. See the *North Carolina Agricultural Chemicals Manual* for rates and other details (<http://ipm.ncsu.edu/agchem/agchem.html>).

The new cultivar Bailey has moderate leaf spot resistance and good resistance to southern stem rot. The first spray can be delayed two weeks (R3+2) on Bailey. The new cultivar Sugg also has resistance to these diseases. Fungicide programs have not been tested as extensively on Sugg as on Bailey, but I believe that sprays can also be delayed on Sugg. Growers who chose to delay sprays on Sugg should be sure to scout carefully until we have more experience with this cultivar.

Begin scouting for Sclerotinia blight!

This week's cool rainy weather has been highly favorable for Sclerotinia blight, so it's time to begin scouting. Outbreaks of Sclerotinia blight can develop even in early July if weather is favorable and rows are within 6 inches of touching. It is important to check early for Sclerotinia blight because we have shown that the fungicide application made at the time of the first outbreak is the one most critical for control during the season.

To scout for Sclerotinia blight, check several 100-foot sections of row. Early Sclerotinia infections often are found on limbs away from the crown. The fluffy white fungus is easiest to see early in the morning or after a rain. You must look inside the canopy to spot these infections. A 3 or 4 foot section of half-inch dowel or PVC pipe is a good tool for pushing vines aside for scouting. Infected stems develop a bleached appearance as the disease progresses. In fields with a history of Sclerotinia blight problems, apply a fungicide if you see active infections on an average of about 1% of the plants in a row. Continue to scout and monitor Sclerotinia advisories as the season continues.



**Early infection of Sclerotinia blight. Note fluffy fungus and bleached stems.
Photo by Damon Smith.**

Leaf spot and Sclerotinia advisories are available daily during the summer. E-mail Barbara Shew (barbara_shew@ncsu.edu) or your county agent if you would like to receive advisory e-mails. Advisories are also available on-line at <http://ncsupeanut.blogspot.com/>.

ORNAMENTALS AND TURF

From: Steve Frank, Extension Entomologist

Dogwood Twig Borer Oviposition

I reported this time last year that I noticed flagging branch tips on the red twig dogwoods (*Cornus sericea* 'Baileyi') in front of my house. The damage was characterized by a cleanly girdled branch with a 1cm oviposition scar just below. Gradually the tip goes from yellow to brown then falls off. Investigation and help from our excellent diagnostician revealed a large egg within each scar that contained a round-headed borer larvae: the dogwood twig borer. This plant seems to be more common in the last couple years. I had never really noticed it before but the past 3 springs big box stores are full of them so that's what people plant.

I have seen the same damage this year and even more of it. Adults lay eggs in twigs. Larvae will overwinter within twigs then continue boring down the twig pith in spring killing the affected branch. This should be on the radar of landscapers and nursery growers. It is much better to identify the flagging branches now and prune out the eggs than wait until spring when a whole branch or small tree will be affected.



Flagging tip of a red twig dogwood after oviposition and girdling by dogwood twig borer. Photo: S. D. Frank.

Cottony Fluff from Flatids

For the past several weeks you have probably noticed an increasing amount of white fluff on the stems and leaves of roses, hostas, raspberries, hydrangea and many other plants. There among the fluff are flatid planthoppers that produce the waxy substance. They are not damaging to plants and usually do not require management beyond washing them off with a hose. The planthoppers will jump if you poke them.



Flatid planthopper in waxy fluff being tended by ants. Photo: S. D. Frank.

Fall Webworms

Fall webworms seem to be at different stages throughout Raleigh. I have found small, new nests and large ones like those pictured. Fall webworms make their nests in the end of branches which makes it easy to prune them off. This is by far the safest and most time and cost effective method of dispatching these guys. They can cause severe defoliation if not removed. Killing them with insecticides is not usually worth the time and money since it is hard to contact the caterpillars within the water-proof nest and if you take the time to tear it open with a stick why not just prune it. Regardless there are occasions when management is necessary. Please visit our caterpillar *Ornamental and Turf Insect Information Note* for recommendations, <http://www.ces.ncsu.edu/depts/ent/notes/O&T/shrubs/note07/note07.html>, and find more pictures and information on the blog <http://ecoipm.com/>.



Fall webworm nest. Photo: S. D. Frank.

INSECT TRAP DATA

From: Alan A. Harper, Lenoir County

Light Trap Data from Lenoir County

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*****
                        Number of Adult Insects
*****
Date      HW      CEW      ECB      AW      AWC      GSB      BSB      TBW
*****
June 22   0       2       0       0       0       0       0       0
June 23   0       0       0       1       0       0       0       0
June 24   0       3       1       0       1       0       0       0
June 25   0       4       0       0       2       0       0       0
June 26   0       2       0       0       2       0       0       0
June 27   0       1       0       0       0       0       0       1
June 28   0       0       0       0       0       0       0       0
June 29   0       2       0       0       0       0       0       0
June 30   0       1       0       0       1       0       0       0
July 1    0       2       0       1       1       0       0       0
July 2    0       2       0       1       1       0       0       0
July 3    0       1       0       0       0       0       0       0
July 4    1       0       1       2       1       0       0       0
July 5    ----- Light unplugged -----
July 6    ----- Light unplugged -----
July 7    0       0       0       3       6       1       0       1
July 8    0       0       0       2       4       0       0       0
July 9    0       1       0       5       3       0       1       0
July 10   0       0       0       2       1       0       0       0
    
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July 11	0	2	0	1	1	0	0	0
July 12	0	1	0	4	7	0	0	0
July 13	2	4	0	13	4	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

From: John Sanderson, Agricultural Extension Agent, Wayne County

Light Trap Data from Wayne County

Number of Adult Insects

Goldsboro

Date	GSB	BSB	CEW	HW
July 4	0	4	0	0
July 6	1	3	0	1
July 9	3	6	0	4
July 11	1	0	3	5
July 13	0	0	2	8

GSB = green stink bugs; BSB = brown stink bugs; CEW = corn earworms; HW = hornworms

Cooperator: Gerald and Willie Howell Farm (Goldsboro)

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.