

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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ANNOUNCEMENTS AND GENERAL INFORMATION 2

- Blackland Farm Managers Tour
- Tomato and Vegetable Field Day

FIELD AND FORAGE CROPS 2

- Cotton: Year of the Bug?
- Stink Bug Levels High in 2013
- Stink Bugs Ready to Strike in Soybeans?
- Caterpillars in Soybeans
- Soybean Aphid Found in North Carolina
- Mid-Season Peanut Disease Control and Disease Advisories
- Cotton Disease Update: Leaf Spots on Cotton
- Soybean Rust Update: August 2, 2013
- Frogeye Leaf Spot
- Resources for Soybean Rust in 2013

ORNAMENTALS AND TURF 8

- Japanese Maple Scale in the Nursery and Landscape
- Oleander Aphids

INSECT TRAP DATA 10

- Light Trap Data from Bertie County
- Light Trap Data from Craven County
- Light Trap Data from Edgecombe County
- Light Trap Data from Lenoir County
- Light Trap Data from Northampton County
- Light Trap Data from Onslow County
- Light Trap Data from Scotland County
- Light Trap Data from Tidewater Research Station
- Light Trap Data from Wayne County
- Light Trap Data from Wilson County

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

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ANNOUNCEMENTS AND GENERAL INFORMATION

Blackland Farm Managers Tour

The 43rd annual Blackland Farm Managers Tour (corn, grain sorghum and soybean) will be held Wednesday, August 7, 2013, in the Terra Ceia community in Beaufort County. The address is 5887 Christian School Road, Pantego, North Carolina. Registration starts at 8 a.m.

Tomato and Vegetable Field Day

Tomato and Vegetable Field Day is on Thursday, August 8, 2013, and starts at 1:00 p.m. at the Mountain Horticultural Crops Research Station in Mills River, North Carolina. Registration information is at http://www.cals.ncsu.edu/agcomm/writing/Field_Days/Tomato-13_e-postcard.pdf.

PLEASE NOTE: At the present time, road construction at the east end of Old Fanning Bridge Road has made it necessary to change the routing instructions from Interstate 26 to the Research and Extension Center facility. These directions will be updated again when construction is finished and the road is reopened to traffic. In addition, the name of Old Fanning Bridge Road from Highway 280 (Boylston Highway) to Westfeld Road has also changed. It is now known as Ferncliff Park Drive.

FIELD AND FORAGE CROPS

From: Jack Bacheler, Extension Entomologist

Cotton: Year of the Bug?

Hopefully, plant bug invasions are beginning to wind down and consultants and producers can turn more to stink bug-oriented internal boll damage assessments. Plant bug levels and damage to squares and young bolls has been widespread in North Carolina this year. However, we have some areas in which plant bug levels are low to moderate. At a graduate student class, August 1, at the Upper Coastal Plain Research Station near Rock Mount in Edgecombe County, blackened squares, missing positions and plant bug nymphs were relatively easy to find. The field crops agent in that county confirmed that a number of cotton producers had treated for plant bug – very unusual for this area.

In the coming 4 to 6 weeks, the potential boll damage from stink bugs will likely take center stage. Because internal boll damage from both plant bugs and stink bugs looks identical, assessing internal boll damage to 1-inch bolls is probably the most efficient way to determine if treatment is needed for either or both pest groups. However, if black ground cloth counts reveal plant bug levels above 2 to 3 per 5 ft. (found by shaking 2.5 row feet from 2 adjacent rows into a black beet cloth), plant bug treatments in their own right may be needed.

Stink Bug Levels High in 2013

Remember to use the protective 10% internal boll damage threshold for weeks 3 to 5 of the bloom period. Stink bug concentrations will tend to be highest in both fields with the highest boll levels and in

ranker areas of cotton fields. Select random areas within cotton fields to sample bolls for internal damage. Many consultants and producers are finding threshold levels of stink bug this year. With our late cotton crop, we could well have situations in which a 10 to 15% internal boll damage threshold could be justified in place of the 20% threshold for week 6 of bloom due to the preponderance of immature bolls. The increasing suggested threshold of 20, 30 and 50% boll damage to quarter-sized bolls during weeks 6, 7 and 8 of the bloom period, respectively, is based on the increasing proportion of older stink bug-safe bolls during the tail end of the growing season. This year, we could have bolls that are susceptible to stink bug damage for an extended period.

From here on out, I would expect to find higher levels of stink bug damage in fields that continue to have adequate to plenty of moisture for the next 4 to 6 weeks. In cotton fields subject to droughty conditions and early cutout, although stink bug levels will likely be less, lower yields can also be expected.

On the plus side, our major bollworm moth flight is both presently wimpy and approximately two weeks late. As of July 31, the two-day light trap count of 118 corn earworm moths indicates that the major flight is now underway – at least in southern North Carolina – and probably into central North Carolina by next week (August 5-9). Some light trap counts are posted on line at:

<http://ipm.ncsu.edu/cotton/insectcorner/blacklight/index.html>

Stink Bugs Ready to Strike in Soybeans?

At the most recent field class, both brown and green stink bugs were easy to find in sweep nets, even for first-timers (mostly the Crop Science students!). Although these soybean plots had not begun to set pods and were thus were not yet susceptible to stink bug damage, considering the hefty present level of stink bugs and because additional stink bugs will be attracted to our soybean plots once pod set and seed fill begins, stink bug damage potential will likely be high in these plots. I suspect this situation will be mirrored across much of North Carolina this year.

Caterpillars in Soybeans

Most of our soybean acreage is “enjoying” low caterpillar numbers so far this year, with just a few token green cloverworms showing up in fields as of this week. So far, we have very little indication of migratory soybean loopers and beet and fall armyworms showing up in soybean. However, with our late “wheat beans” and some other late-planted “full season” beans, later migratory moth arrivals could encounter soybeans still in an attractive susceptible state.

From Jack Bachelier and Matt Bertone, Extension Entomologists

Soybean Aphid Found in North Carolina

The soybean aphid (*Aphis glycines*) was found in a Laurinburg-area soybean field on July 11, 2013, by Sarah Brown and David Morrison. This is the first *Plant Disease and Insect Clinic*-confirmed finding of this pest in North Carolina. A couple of nearby soybean fields showed a low level of soybean aphid. In

the initial field, a transect was walked across the field and upper canopy trifoliates were assessed at eight locations for the presence of this insect. One location had an estimated 300 cotton aphids per trifoliolate, others had zero aphids and the balance had intermediate levels. The soybean aphid is the primary soybean insect pest on almost 90% of the U.S. soybean acreage. Most research points to several species of buckthorn (i.e., common buckthorn and alderleaf buckthorn) as a required overwintering host for soybean aphid eggs. States to the south of this host's range, like North Carolina, have been free of soybean aphid. Whether this finding is the result of a new expanded range of this species or whether this species was actively or passively introduced to soybean and would not successfully overwinter here is the unknown at this time.



Soybean aphid on soybean (note kudzu bug nymph in lower-middle of image). Image by M. Bertone.

With the invasive brown marmorated stink bug already becoming established in many soybean fields in Virginia and kudzu bug levels dramatically increasing their abundance, spread and damage throughout the Southeast, the last thing we need is a new significant soybean insect pest. Because this species undergoes as many as 15 generations per year to our north, if this pest successfully overwinters in North Carolina, its presence will quickly become apparent in 2014.

From: Barbara Shew, Extension Plant Pathologist

Mid-Season Peanut Disease Control and Disease Advisories

Many peanut growers had a hard time getting in their fields for the first leaf spot spray, which should have been applied at R3 in early July, or two weeks later on Bailey. After some drier weather, at least one fungicide application has been made and leaf spot appears to be under control for now. We have seen some chemical injuries that mimic leaf spots this year. Large spots that appear suddenly over an entire field are most likely not leaf spots.



Early leaf spot starts in scattered areas in the lower canopy. Spots are small and sparsely distributed on leaves at first.

Most fields are ready for their second or third fungicide application, which are the most critical sprays for control of southern stem rot. Most cultivars will benefit from two applications of a fungicide that controls stem rot, while the more resistant Bailey will benefit from at least one application.

When the next spray is scheduled or advised, consider a leaf spot fungicide that will also control southern stem rot, for example Abound, Fontelis, Headline, or Provost. Convoy and tebuconazole are also effective against stem rot, but must be mixed with a fungicide that controls leaf spots. If you are using Convoy or tebuconazole, mix with 1 pint of Bravo (or generic chlorothalonil) or 6 to 9 oz of Headline. Remember that only two applications of a group 11 fungicide (Headline, Abound, or Evito) should be made per season.

Peanuts in a few locations are showing some water stress. In general, wilting from water stress is a good indication that conditions are not favorable for leaf spot. Applying a leaf spot fungicide in dry weather is unnecessary and can increase the risk or severity of spider mite outbreaks. Delay fungicide applications until leaf spot advisories indicate that conditions are again favorable for disease.

Sclerotinia blight was spotted in isolated areas in early July but advisories slowed down later in the month as our weather dried out a bit. However, any infections that went undetected in early July could easily flare up when favorable conditions (cool temperatures with rain, long periods of high humidity or heavy dews) return. Fungicide sprays are most beneficial at the first sign of a disease outbreak. Keep your eye on Sclerotinia advisories but always rely on careful, regular scouting to stay on top of the disease.

See the *North Carolina Agricultural Chemicals Manual* (<http://ipm.ncsu.edu/agchem/agchem.html>) for all fungicide rates and additional details. Additional photos of peanut diseases may also be found at (<http://plantpath.cals.ncsu.edu/sites/default/files/u45/Peanut%20disease%20photos%20revised%20March%202013.pdf>).

From: Steve Koenning, Extension Plant Pathologist, and Keith Edmisten, Extension Cotton Specialist

Cotton Disease Update: Leaf Spots on Cotton

Leaf spot on cotton is especially common throughout North Carolina. A variety of fungi can be found in these spots including: *Alternaria*, *Cercospora*, *Stemphyllium* and *Colletotrichum*. Most commonly we are finding *Ascochyta* this year, which is not usually damaging to cotton. Though target spot has not been found on cotton in North Carolina at this date, it has been reported from Alabama, Georgia and South Carolina. Fungicides can control these diseases, but rarely result in improved lint yield or quality. Furthermore, fungicides usually do not impact boll rot fungi.

Corynespora leaf spot or target spot of cotton was first identified as a possible problem in Georgia in 2005. In 2012, it was found in nearly all Georgia cotton fields and on rank cotton in North Carolina. The disease typically starts in the lower canopy where it causes 0.25 to 1 inch reddish-brown target spots with light and dark brown concentric bands or rings. Other fungi that can be associated with these spots include *Stemphyllium*, *Alternaria*, *Cercospora* and *Colletotrichum*. These fungi are most commonly associated with cotton under physiological stress or environmental factors such as frequent rainfall and overcast days such as seen most of the month of August in Virginia.

Quadris and Headline are strobilurin type fungicides that can be applied to cotton and should provide control for ten days to two weeks. The efficacy of other fungicides on cotton for control of this disease is not known, but many triazole fungicides have not proved to be very effective against this disease.

From: Jim Dunphy, Extension Soybean Specialist, and Steve Koenning, Extension Plant Pathologist

Soybean Rust Update: August 2, 2013

Asiatic soybean rust was confirmed in a commercial soybean field in Echols County, Georgia. This puts rust a little closer to our soybeans in the eastern part of North Carolina, but still not close enough to warrant a recommendation from us to spray for the disease. The closest confirmed rust on soybeans to our North Carolina soybeans is now approximately 310 miles from Charlotte, 545 miles from Elizabeth City, 380 miles from Fayetteville, 190 miles from Murphy, 430 miles from Raleigh, 475 miles from Washington, 380 miles from Wilmington, and 380 miles from Winston-Salem, North Carolina.

Rust has now been confirmed this year on soybeans in 16 counties/parishes in five states (Louisiana, Florida, Alabama, Mississippi and Georgia).

We are starting to receive sentinel plot samples in the *Plant Disease and Insect Clinic* and have not detected rust at this time. Rust has progressed at a faster rate this year than in years past. With a late soybean crop, the odds on needing to apply fungicides is increased. Now is the time to check spray equipment and be sure to have the proper nozzles for applying fungicides.

We do not recommend spraying soybeans that have not started blooming with a fungicide to control Asiatic soybean rust. Such pre-bloom applications have seldom improved yields. Once soybeans start blooming, we would recommend spraying **if** rust has been confirmed within 100 miles of the field.

The current status of soybean rust in the U.S. can always be found at <http://sbr.ipmpipe.org/cgi-bin/sbr/public.cgi>.

Frogeye Leaf Spot

Frogeye leaf spot is caused by the fungus *Cercospora sojina*. Most soybean varieties currently grown are resistant to this disease, and the use of resistant varieties is the preferred method of control. Although frogeye leaf spot is seed borne, it tends to be worse in fields of continuous soybean. Only newly formed leaves are susceptible to this disease, and fully expanded leaves are resistant until they start to senesce. Immature leaves become infected with periods of rain or high humidity, but infection will be limited by dry weather. So, as the soybean plants put on new layers of leaves, frogeye may be present or absent depending on weather conditions during leaf expansion. This can lead to a situation where frogeye is layered in the canopy at different levels. Frogeye has caused yield losses of 30% in some fields, so the general recommendation for susceptible varieties is the application of a strobilurin type fungicide, especially if continued wet and/or humid weather is expected. We do not have a threshold for number of spots or percent leaf area affected to justify fungicide application. If wet and/or humid weather persists as plants start to senesce, older leaves become susceptible again, and the plant may defoliate early. Early defoliation can result in smaller seeds which will translate into yield loss. Also, pod infection can cause a reduction in seed quality or contribute to seed rot. For more information on frogeye leaf spot, see <http://www.ces.ncsu.edu/depts/pp/notes/Soybean/soy003/soy003.htm>.



Frogeye leafspot caused by *Cercospora sojina*.

Resources for Soybean Rust in 2013

Some sources for more detailed information on Asiatic soybean rust are listed below:

USDA Soybean Rust web site: <http://www.sbrusa.net/>

North Carolina Agricultural Chemical Manual: <http://ipm.ncsu.edu/agchem/agchem.html>

ORNAMENTALS AND TURF

From: Steve Frank, Extension Entomologist

Japanese Maple Scale in the Nursery and Landscape

Japanese maple scale, *Lopholeucaspis japonica*, is active now and much of the summer. It is a small, oystershell-shaped, armored scale introduced to the U.S. from Asia. Japanese maple scale is found in several eastern U.S. states, including Connecticut, Delaware, Georgia, Kentucky, Maryland, North Carolina, New Jersey, Pennsylvania, Rhode Island, Tennessee and Virginia, as well as Washington D.C. Japanese maple scale has a wide host range that in addition to maples (e.g., Japanese maples, red maples, paperbark maples and sugar maples), includes *Amelanchier*, *Camellia*, *Carpinus*, *Cercis*, *Cladrastis*, *Cornus*, *Cotoneaster*, *Euonymus*, *Fraxinus*, *Gledistia*, *Ilex*, *Itea*, *Ligustrum*, *Magnolia*, *Malus*, *Prunus*, *Pyracantha*, *Pyrus*, *Salix*, *Stewartia*, *Styrax*, *Syringa*, *Tilia*, *Ulmus*, *Zelkova* and others.

Although the lifecycle of this pest has not been fully examined, two generations a year are expected in the mid-southern U.S. First generation crawlers emerge in mid-May and the second generation in early August. Management efforts are complicated by the extended crawler emergence that results in first and second generational overlap. Thus, the most recent sample we received had every stage – egg to adult – present at the same time.

Adult scales and crawlers are very small and most readily observed on bark of dormant deciduous host plants, but can also be found on foliage. The waxy coating on the body of male Japanese maple scales is white and females, eggs, and crawlers are lavender. The most work on this scale has been done by Paula Shrewsbury and Stanton Gill at the University of Maryland. There is also information on Japanese maple scales and other maple pests in our new book: <http://ecoipm.com/extension/extension-resources/>



Japanese maple scales. Photo: Brian Kunkel, University of Delaware, from www.insectimages.org/.

The link to the UMD fact sheet is <http://ipmnet.umd.edu/nursery/docs/JapaneseMapleScale-UMD2011.pdf>.

Oleander Aphids

Anyone who has grown or looked at milkweed has seen oleander aphids. They are orange and usually very abundant. Sometimes oleander aphids become so abundant they reduce plant growth and flowering, but most of the time they are not very harmful. Since they are inevitable you might as well enjoy them. The most enjoyable and interesting thing about these aphids is that you can witness all kinds of ecological interactions. Inspecting a colony of these aphids you will see parasitoids and their mummies; predacious maggots of hoverflies that specialize on aphids; predacious maggots of *Aphidoletes* midges that bite aphid knees, inject paralytic toxins, then eat the aphids. Many other generalist predators such as green lacewing larvae, lady beetles, and minute pirate bugs also hang around. These are great plants to have in public gardens because you can always teach people about these predators and parasitoids.



Oleander aphids on milkweed. Notice pupae of predacious flies.
Photo: S. D. Frank.



Oleander aphids on milkweed. Note parasitoid mummies and the white critter that looks like a mealy bug is actually a specialist lady beetle larvae that may be in the Genus *Scymnus*. Photo: S. D. Frank.

INSECT TRAP DATA

From: Richard W. Rhodes, County Extension Director, Bertie County

Light Trap Data from Bertie County

```

*****
                                Hexlena
                                TNT
                                Woodard  PBRs
                                *****  ****
Date                               BW  GSB  BW  GSB  BW  GSB  BW
*****
July 22                            1   1   -   -   -   -   0
July 23                            -   -   -   -   -   -   0
July 24                            0   0   0   1   -   -   0
July 25                            0   1   0   0   -   -   -
July 26                            0   0   NR  NR   -   -   0
July 27                            0   0   NR  NR   -   -   0
July 28                            0   0   NR  NR   -   -   0
July 29                            0   0   -   -   -   -   -
July 30                            3   0   -   -   -   -   -
*****
    
```

BW = bollworms; GSB = green stink bugs;
NR = No Report

From: Mike Carroll, Agricultural Extension Agent, Craven County

Light Trap Data from Craven County

```

*****
                        Number of Adult Insects
*****
Date          BW    GSB    BSB    FAW    THW
*****
July 8        ----- Date Initiated -----
July 11        3     1     0     0     1
July 12        2     0     0     0     0
July 15        8     1     0     0     1
July 16        7     0     0     0     1
July 17        8     0     0     0     1
July 19        8     0     0     1     0
July 22       12     0     0     0     1
July 26       20     1     0     0     0
July 30       25     2     0     0     6
August 1      16     0     0     0     2
*****
    
```

BW = bollworms; GSB = green stink bugs; BSB = brown stink bugs;
 FAW = fall armyworms; THW = tobacco hornworms

Location of trap: Cove City
 Cooperators: R & W McCoy Farms and Cove City Fertilizer

From: Arthur R. Bradley, Jr., County Extension Director, Edgecombe County

Light Trap Data from Edgecombe County

```

*****
                        Number of Adult Insects
*****
West Edgecombe          Coakley          Lawrence
*****
Date          CEW    BS    GS    CEW    BS    GS    CEW    BS    GS
*****
July 5        -     -     -     2     3     7     -     -     -
July 8        -     -     -     1     2    20     -     -     -
July 10       -     -     -     0     0     6     -     -     -
July 12       0     1     1     2     0     6     -     -     -
July 15       0     0     0     3     0     0     -     -     -
July 17       0     0     0     4     1     8     -     -     -
July 19       1     0     0     0     0     9     -     -     -
July 22       0     1     0     0     2    10     -     -     -
July 24       0     0     0     0     0     6     -     -     -
July 26       0     0     0     6     0     0     1     0     1
July 29       2     1     0     7     1     1     0     0    15
July 31      14     0     0     -     -     -     -     -     -
*****
    
```

Abbreviations: CEW = corn earworms;

BS = brown stink bugs; GS = green stinks bugs

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
*****
June 1    ----- Put up light trap -----
June 2      0      0      0      0      0      7      0      0
June 3      0      1      1      0      0     10      0      0
June 4      0      0      0      0      0      5      0      0
June 5      0      0      1      0      0      2      0      0
June 6      0      0      0      0      0      0      0      0
June 7      0      0      0      0      0      3      1      0
June 8      0      0      0      0      0      3      0      0
June 9      0      0      1      0      0     12      1      0
June 10     0      0      0      0      0      4      0      0
June 11     0      0      0      0      0      0      0      0
June 12     0      0      0      0      0      2      0      0
June 13     0      0      0      1      0      4      1      0
June 14     0      0      0      0      0      0      0      0
June 15     0      0      0      0      0      0      0      0
June 16     0      0      1      0      0      0      1      0
June 17     0      0      0      0      0      1      0      0
June 18     0      0      0      0      0      0      1      0
June 19     0      0      0      0      0      0      0      0
June 20     0      0      0      0      0      0      0      0
June 21     0      0      2      0      1      0      0      0
June 22     0      0      0      0      0      1      0      0
June 23     0      0      0      0      0      0      0      0
June 24     0      0      0      0      0      0      0      0
June 25     0      0      0      0      0      1      0      0
June 26     0      0      0      0      0      0      0      0
June 27     0      0      0      0      1      0      0      0
June 28     0      0      0      1      0      0      0      0
June 29     0      0      0      0      0      0      0      0
June 30     0      0      0      0      0      2      0      0
*****
    
```

July

```

*****
                        Number of Adult Insects
*****
Date      HW      CEW      ECB      AW      AWC      GSB      BSB      TBW
*****
July 1      1      0      0      0      0      3      0      0
July 2      0      0      0      0      0      0      0      0
July 3      0      0      0      0      0      3      2      0
    
```

July 4	0	0	0	0	0	6	0	0
July 5	0	0	1	0	1	4	2	0
July 6	0	0	0	0	0	5	0	0
July 7	0	0	0	0	0	1	0	0
July 8	0	0	0	0	0	0	0	0
July 9	0	0	0	0	0	0	1	0
July 10	0	0	0	0	0	1	0	0
July 11	0	0	0	0	1	1	1	0
July 12	0	0	0	0	0	0	0	0
July 13	0	0	0	0	0	0	0	0
July 14	1	0	0	0	0	0	0	0
July 15	0	0	0	0	0	0	0	0
July 16	0	0	0	0	0	1	0	0
July 17	0	0	0	0	0	2	1	0
July 18	0	0	0	0	0	0	0	0
July 19	0	0	0	0	0	0	0	0
July 19	0	0	0	0	0	0	0	0
July 20	0	0	0	0	0	0	0	0
July 21	0	0	0	0	0	0	0	0
July 22	0	0	0	0	0	0	0	0
July 23	0	0	0	0	0	0	0	0
July 24	0	1	0	0	1	1	0	0
July 25	1	2	1	0	2	2	0	0
July 26	0	0	0	0	1	2	0	1
July 27	1	3	0	0	1	1	0	1
July 28	1	4	0	0	2	0	0	0
July 29	0	10	0	0	2	0	0	1
July 30	0	14	0	0	4	0	0	0
July 31	0	27	0	0	4	1	0	1

August

Number of Adult Insects

Date	HW	CEW	ECB	AW	AWC	GSB	BSB	TBW
August 1	0	38	0	0	4	1	1	0
August 2	1	10	1	0	1	1	0	1

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: Craig Ellison, Agricultural Extension Agent, Northampton County

Light Trap Data from Northampton County

```

*****
                          Number of Adult Insects
*****
      Woodland      Conway      Galatia      Seaboard      Gaston      Jackson
*****
Date      CEW GR BR      CEW GR BR      CEW GR BR      CEW GR BR      CEW GR BR      CEW GR BR
*****
July 30      - - -      - - -      - - -      - - -      - - -      15 13 0
August 1      2 1 1      - - -      - - -      14 10 0      20 1 0      12 31 0
*****
    
```

CEW = corn earworms; GR = green stink bugs; BR = brown stink bugs

Locations: Woodland, Conway, Galatia, Seaboard, Gaston and Jackson
 Monitored by: L. Culpepper, K. Edwards, Ben Harris, T. Flythe, D. Grant
 and B. Bryant

From: Melissa E. Huffman, Agricultural Extension Agent, Onslow County

Light Trap Data from Onslow County

```

*****
                          Number of Adult Insects
*****
                          Green      Fall      Tobacco
                          Bollworms Stink Bugs Armyworm Hornworm
*****
Date
July 1           0           0           0           0
July 3           0           0           0           0
July 5           0           0           0           0
July 8           0           0           0           0
July 10          0           2           0           0
July 12          0           1           0           0
July 15          0           0           0           0
July 17          6           2           0           0
July 19          6           3           0           1
July 22          11          8           1           0
July 24          8           15          1           0
July 26          8           6           0           0
July 29          25          5           0           1
July 31          21          8           0           2
*****
    
```

Trap Location: Richlands; Cooperator: Richlands Farm, Inc.
 Insect counts are from a single black light trap located
 approximately 1 mile east of Richlands.

From: Scotland County Extension Center

Light Trap Data from Scotland County

```

*****
                          Number of Adult Insects
*****
          Gibson                John's                Laurinburg
*****                *****                *****
Date      BW  GSB  BSB  FAW      BW  GSB  BSB  FAW      BW  GSB  BSB  FAW
*****
July 17   -   -   -   -       11  14  34   0       -   -   -   -
July 19   4   6   5   0       12   7  20   0       0  11  44   0
July 22  16  21   0   0       12   5  14   0       1  11  13   0
July 24  44   7   0   0       25   6  17   0       1   2   6   0
July 26  22   2   0   0       44   1   1   0       5   0   2   0
July 29 118  13   0   0       54   3  12   0      15   7   2   0
*****
    
```

BW = bollworms; GSB = green stink bugs;
 BSB = brown stink bugs; FAW = fall armyworms

From: Dominic Reisig, Extension Entomologist

Light Trap Data from Tidewater Research Station

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*****
                          Number of Adult Insects
*****
Date      CEW  TBW  AW  SBL  BSB  GSB
*****
July 5           0   0   0   0   0   0
July 8           0   0   0   0   0   0
July 10          0   0   0   0   1   1
July 12          0   0   0   0   1   3
July 15          0   1   0   0   6   2
July 17          0   0   0   0   2   8
July 19          0   1   0   0   6   3
*****
    
```

Abbreviations: CEW = corn earworms; TBW = tobacco budworms;
 AW = armyworms; SBL = soybean loopers; BSB = brown stink bugs;
 GSB = green stink bugs

From: Tyler Whaley, Agricultural Extension Agent, Wayne County

Light Trap Data from Wayne County

```

*****
                Number of Adult Insects
                *****
                    Goldsboro
                *****
Date            GSB    BSB    CEW    HW
*****
July 14         -      2     -     0
July 15         5      6     0     0
July 17         9     19     0     0
July 19         0      6     0     0
July 22         2      5     0     0
July 24         1      5     0     0
July 26         1      1     1     1
July 29         1      0     7     1
July 31         9      1    15     -
*****
    
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GSB = green stink bugs; BSB = brown stink bugs; CEW = corn earworms; HW = hornworms

Cooperator: Willie Howell Farm (Goldsboro)

From: Norman E. Harrell, Agricultural Extension Agent, Wilson County

Light Trap Data from Wilson County

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*****
                Number of Adult Insects
                *****
                Kenly      Fountain      Pender's
                *****      *****      *****
Date            CEW  GSB      CEW  GSB      CEW  GSB
*****
July 29         -   -         3   5         -   -
July 31         1   0         2   6         -   -
August 2        5   0        42  4         -   -
*****
    
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CEW = corn earworms; GSB = green stink bugs

Locations: Kenly, Fountain and Pender's Cross Roads
 Monitored by: Norman Harrell, Barbara Smith and Adam Gardner

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.
