

North Carolina Pest News

Departments of Entomology and Plant Pathology



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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 Internet at: http://ipm.ncsu.edu/current_ipm/pest_news.html

ANNOUNCEMENTS AND GENERAL INFORMATION

Blackberry and Raspberry Workshop on August 31 in Laurel Springs

The 2011 Blackberry and Raspberry Workshop, sponsored by the North Carolina State University College of Agriculture and Life Sciences, North Carolina Department of Agriculture and Consumer Services and North Carolina Tobacco Trust Fund Commission, will be held on Wednesday, August 31, 2011 at the Upper Mountain Research Station in Laurel Springs, North Carolina. For more information, including a schedule of events and directions to the station, go to http://www.cals.ncsu.edu/agcomm/news-center/wp-content/uploads/2011/08/Caneberries_11_program.pdf.

FIELD AND FORAGE CROPS

From: Jack Bacheler, Extension Entomologist

Cotton Insect Damage Potential Crashing

Things have not changed much from a week ago except that some portions of the state received significant rainfall last weekend that will help fill out bolls, and of course the cotton crop continues toward rapid early maturity in most cases.

The odds of our cotton fields receiving economic levels of insect damage are becoming remote. Although bollworm moths and stink bugs are still attracted to and can potentially concentrate in late maturing cotton fields, these pests are being increasingly attracted to nearby open-canopy, flowering soybean fields. Additionally, thresholds for both bollworms and stink bugs in most cotton fields are many times higher than at more susceptible times of the growing season, such as weeks 3 to 5 of the bloom period for stink bugs and during the last two weeks in July through the first week in August for bollworms. Between the endotoxin in 2-gene *Bt* cotton varieties and our general lack of sufficient immature fruit in most cotton fields, hatching and early stage bollworms encounter an environment in which establishment and subsequent damage is unlikely. I'd certainly advise producers to monitor late maturing fields, however, but be aware that thresholds should be raised accordingly as the probability of economic damage declines.

Although the next **bollworm moth flight** is just now picking up in southern North Carolina and may be a threat to soybeans that are open-canopied and blooming, this flight will likely be too late to impact our early maturing cotton crop in all but a few cases. As can be seen from light trap counts of bollworm moths, levels are extremely low (mostly in single digits), indicating that we are presently between moth flights in all but the southern counties.

Also at this time of year, pest damage to cotton by **spider mites**, **cotton aphids** or **other caterpillars** is extremely unlikely.

From: Dominic Reisig, Extension Entomologist

Explanations for Lesser Cornstalk Borers

With lesser cornstalk borers widespread across the eastern part of the state (Figs. 1-4), many producers have been left scratching our heads as to why this outbreak has occurred. Although we know relatively little about the biology of this insect compared to many other pests, we do have some scientific information that might help our understanding of what contributes to an outbreak.

Soil moisture is the likely culprit behind most of the outbreak. Lesser cornstalk borer outbreaks are highly correlated with an increase in soil temperature and a reduction in soil moisture. Adult females, which lay the eggs of the damaging larvae, prefer to lay eggs in dry soils over moist soils. We know that the larvae are often found on double-cropped beans after burning, presumably because the soil is dryer as a result of the loss of ground cover and due to the increase in water-repellency of the soil (an unfortunate consequence from burning). In addition, the adult moths can actually sense smoke using their antennae. Presumably this could allow them to find freshly burned areas to lay their eggs. Dry soils also favor egg and larval survival.



Fig. 1. Soybeans decimated by lesser cornstalk borer at the Tidewater Research Station in 2011. Image from D. Reisig.



Fig. 2. The remaining plants lodged at the base with a slight push. Image from D. Reisig.



Fig. 3. I easily found the larvae at the base of this plant that I pushed over, but it's often not so easy. Sometimes the injury is done and the larvae have pupated. In addition, they are very cryptic and spin silken tubes in the soil. They are very quick movers. Image from D. Reisig.



Fig. 4. What's the difference between the good stand of soybean on the right and the poor stand on the left? The soybean on the right were irrigated, while those on the left were not (notice the irrigation reel in the background). Image from D. Reisig.

Larvae and pupae can be killed by disease (viruses and the fungal organism *Aspergillus flavus* Link.), parasites, and a suite of predators. *A. flavus* is one of the organisms that cause aflatoxin in corn. It is nearly everywhere in the environment and its development is favored by moisture. Additionally, in order to kill lesser corn stalk borer larvae, the larvae must be stressed. Insect predators such as big-eyed bugs, carabid beetles, robber flies and earwigs can eat larvae. One study in Alabama showed that when fields are cooler and wetter, earwig survival was higher and lesser cornstalk borer survival was lower. Lesser cornstalk borer larvae are highly adapted to dry conditions, with adaptations to help them retain water. As a result, some researchers suspect that these larvae can tolerate dry conditions while their predators cannot.

We can't change the weather and any remedial action taken against this pest now will be ineffective. However, we can take steps to protect ourselves in the future. You can find management recommendations for next year on the following blog posts:

<http://www.nccrops.com/?p=130>

<http://www.nccrops.com/?p=243>

From: Steve Koenning Extension Plant Pathologist, and Jim Dunphy, Extension Soybean Specialist, Department of Crop Science

Soybean Rust Update for August 15, 2011

Thus far in 2011, soybean rust has been detected on kudzu in New Iberia Parrish in Louisiana, several locations in Florida, and presumably is active in Mexico. The potential for spread from these regions at this time is unlikely. Very hot weather throughout most of the Southeast remains as a major impediment to development of rust at this time. We are starting to receive samples from sentinel plots, and foliar diseases are less frequently encountered this year than any year in the recent past.

Prospects for Soybean Rust in North Carolina in 2011:

The northward progression of soybean rust appears to be stalled this summer in Florida. Watch for tropical storm events that bring moisture from the south. We learned last year that rust can and will make large jumps distance wise over a relatively short period of time. The NOAA forecast for temperature and moisture for the critical June thru September 2011 time period is for average seasonal temperatures and above average precipitation. Additionally, the national forecast is for an above average tropical storm season. Tropical storms, especially those moving through Florida and Georgia may provide for transport of rust spores earlier in the season.

Resources for Soybean Rust in 2011:

- *North Carolina Agricultural Chemical Manual*: <http://ipm.ncsu.edu/agchem/agchem.html>
- IPM PIPE web site: <http://sbr.ipmpipe.org/cgi-bin/sbr/public.cgi>
- Soybean Rust in the Mid-Atlantic Region: <http://cipm.ncsu.edu/ent/SSDW/RustBulletin08.pdf>

Soybean Disease Update for August 2011

Very few disease problems have been detected on soybean in North Carolina in 2011. Foliar diseases in particular have been rare. Some soil borne diseases have caused problems such as Pythium, Rhizoctonia, and Phytophthora, but these have been limited in extent and often related to poor conditions at planting. Southern soybean stem canker was identified in the Piedmont, which is a rare occurrence for the Carolinas and Virginia.

By far the most common problem associated with dead or dying plants in 2011 is the lesser corn stalk borer. Although we encounter this problem every year, 2011 has seen record numbers of this pest on soybean come through the Plant Disease and Insect Clinic at North Carolina State University. The good news is that the lesser corn stalk borer is a relatively rare occurrence. The bad news is that we can expect to continue to lose soybean plants from lesser corn stalk borers and that it is difficult to control under the best of conditions.

Foliar fungicides, though labeled for use on soybean, are not generally recommended for North Carolina for disease control. Soybean grown for seed may show some improvement in seed quality, especially with applications at the R5 growth stage. Still, a timely harvest is the best insurance for good seed quality.

From: Steve Koenning Extension Plant Pathologist

Cotton Disease Update

Fusarium Wilt on Cotton:

Cotton seedling diseases were relatively rare this spring because of mild earl-season weather. Fusarium wilt of cotton was identified in Chowan County, North Carolina. Most cotton varieties have adequate resistance to the wilt pathogen, but nematodes above threshold levels can “break resistance to this disease.” Thus the key to controlling this disease is good nematode management. I have only seen the disease when nematodes were at high levels. Manufacturers of seed treatment nematicides often mention in their literature that if nematodes exceed thresholds by 2x or more, additional control measures may be needed. Since the availability of Temik is limited, this may mean the use of a fumigant, rotation, or a root-knot nematode resistant variety.

Fungicides and Late Season Cotton Diseases:

In most instances leaf spots on cotton caused by various fungi are fairly common and generally associated with “cut-out” and Potash deficiency. While fungicides in some instances have controlled diseases, control has not resulted in increased yield. Cercospora, Ascochyta, Stemphyllium, and Alternaria leaf spots have all been identified on cotton samples submitted to the Plant Disease and Insect Clinic this year. Corynespora leaf spot has not been identified on cotton in North Carolina.

Corynespora Leaf Spot on Cotton:

Corynespora leaf spot is not a disease listed in the *Compendium of Cotton Diseases*. This in and of itself does not dispute the validity of “**observations made in Georgia.**” Strobilurin type fungicides such as Quadris and Headline can give excellent control of this disease in soybeans or cucurbits, data on cotton is very limited at this time. While Twinline (Headline plus Caramba [metconazole]) from BASF does have Headline, there is no reason to believe that the other component (Caramba) will provide additional control at this time. Triazole fungicides like Caramba are not noted for control of Corynespora in other crops. One last issue I would like to address is timing of fungicides for control of this disease. My experience with Corynespora (Target Spot in soybeans and cucurbits) in soybeans leads me to believe that this disease is “weather driven.” In other words we need two to three days of rainy, cloudy weather for defoliation to occur because of this disease.

ORNAMENTALS AND TURF

From: Steve Frank, Extension Entomologist

Tarsonemid Mites

Around this time last year we had a couple reports from the Plant Disease and Insect Clinic at North Carolina State University about tarsonemid mites (Figs. 5 and 6) and this year we got them again. Tarsonemidae is a family of tiny mites that includes cyclamen and broad mites, but also many other species.

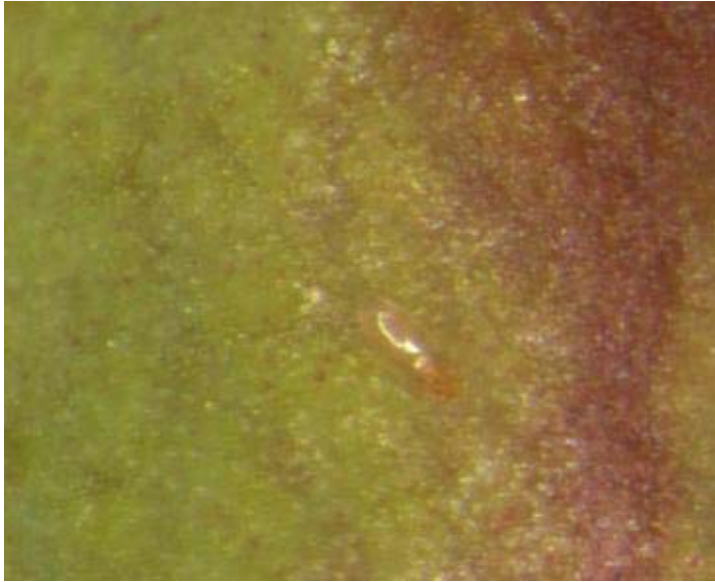


Fig. 5. Adult tarsonemid mite. Image by Steve Frank.



Fig. 6. Tarsomenid mite nymph and egg. Image by Steve Frank.



Figs. 7 and 8. Tarsonemid damage to colocasia leaves. Mites feed in leaf whorl resulting in deformation as leaf expands. Images by Steve Frank.

They can be difficult to control for several reasons. First they are difficult to detect. If plant damage is inspected without magnification the mites will not be seen and the damage may be attributed to some other organisms or disease. Second, they often live in parts of the plant such as leaf whorls and buds that are difficult to access with miticides. Finally, not all miticides are effective on this family of mites. Infestation of foliage often results in deformation as mites damage developing leaves. Infested flowers may fail to open and leaves may be bronzed or discolored. Broad mites feed on many greenhouse plants such as African violet, ageratum, azalea, begonia, dahlia, gerbera, gloxinia, ivy, jasmine, impatiens, lantana, marigold, peperomia, snapdragon, verbena, and zinnia. Other species of tarsonemid mites exist

but are not well studied. We recently found an infestation on Colocasia leaves which became bent and distorted as they unfurled (Figs. 7 and 8). Effective miticides include: abamectin (Avid), chlorfenapyr (Pylon), and pyridaben (Sanmite). See *Ornamentals and Turf Insect Information Note No. 28* at <http://www.ces.ncsu.edu/depts/ent/notes/O&T/flowers/note28/note28.html> for more information.

The Japanese Maple Scale: Emerging Nursery and Landscape Pest

Japanese maple scale, *Lopholeucaspis japonica*, is active now and much of the summer. It is a small, oystershell-shaped, armored scale believed to have been 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 hatch observed for Japanese maple scales 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 at the University of Maryland and their fact sheet on the Japanese maple scale is available on the web at <http://ipmnet.umd.edu/nursery/docs/JapaneseMapleScale-UMD2011.pdf>.

INSECT TRAP DATA

From: Richard Melton, County Extension Director, Union County

Light Trap Data from Anson, Stanly and Union Counties

Number of Adult Insects												

Anson				Union S			Union N			Stanly		
*****				*****			*****			*****		
Date	CEW	GR	BR	CEW	GR	BR	CEW	GR	BR	CEW	GR	BR

July 16	-	-	-	15	-	-	-	-	-	-	-	-
July 20	-	-	-	43	-	-	-	-	-	-	-	-
July 22	-	-	-	126	-	-	-	-	-	1	2	2
July 25	-	-	-	75	9	-	-	-	-	2	1	2
July 27	43	14	-	68	12	-	-	-	-	1	-	-

CEW = corn earworm moths; GR = green stink bugs; BR = brown stink bugs
Union County South - Marshville; Union County North - Unionville

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

Light Trap Data from Bertie County

	Windsor		Woodard		Hexlena		Colerain	
	*****		*****		*****		*****	
Date	Moths	GSB	Moths	GSB	Moths	GSB	Moths	GSB
*****	*****	*****	*****	*****	*****	*****	*****	*****
July 20	4	4	15	3	0	1	-	-
July 21	4	0	25	1	-	-	-	-
July 22	10	1	12	2	9	5	-	-
July 23	37	0	-	-	-	-	-	-
July 24	-	-	-	-	-	-	-	-
July 25	70	1	19	2	19	4	-	-
July 26	15	0	7	0	12	0	25	0
July 27	20	2	19	1	17	0	-	-
July 28	39	0	34	4	15	1	-	-
July 29	36	6	27	4	10	2	-	-
July 30	41	0	-	-	-	-	-	-
July 31	-	-	-	-	-	-	-	-
August 1	65	0	42	2	-	-	33	-
August 2	18	2	32	7	6	2	18	-
August 3	19	4	32	5	3	10	13	0
August 4	12	0	23	7	1	5	25	0
August 5	10	3	24	1	5	0	-	-
August 6	-	-	-	-	-	-	-	-
August 7	-	-	-	-	-	-	-	-
August 8	42	8	37	19	20	0	-	-
August 9	12	3	32	6	3	1	-	-
August 10	6	2	14	10	5	1	12	0
August 11	-	-	4	1	-	-	5	1
August 12	4	0	-	-	-	-	-	-
August 13	-	-	-	-	-	-	5	-
August 14	2	0	-	-	-	-	13	-
August 15	0	0	-	-	-	-	20	-
August 16	-	-	-	-	-	-	11	0
August 17	-	-	13	3	-	-	22	0
August 18	3	0	-	-	-	-	5	0

Moths = Bollworm moths; GSB = Green stink bugs

From: Mike Carroll, Agricultural Extension Agent, Craven County

Light Trap Data from Craven County

Number of Adult Insects									

Date	THW	TBW	CEW	GSB	BSB	ECB	FAW	BAW	LOOP

July 5	1	1	-	2	-	-	-	-	-
July 11	-	-	3	3	1	-	-	-	-
July 18	-	-	23	-	-	4	-	-	-
July 22	-	-	38	1	1	-	-	-	-
July 25	-	-	75	-	-	-	-	-	-
July 29	2	-	91	1	1	-	-	-	-
August 2	-	-	85	-	1	-	-	-	-
August 5	1	-	62	-	1	-	-	-	-
August 8	1	2	47	3	1	-	-	-	-
August 10	-	-	34	6	-	3	-	-	-
August 12	-	-	14	1	-	18	-	-	-
August 15	-	-	10	-	-	-	-	-	-
August 17	-	-	0	-	-	-	-	-	-

THW = tobacco hornworms; TBW = tobacco budworms; CEW = corn earworms;
 GSB = green stink bugs; BSB = brown stink bugs; ECB = European corn
 borers; FAW = fall armyworms; BAW = beet armyworms; LOOP = Looper

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

From: Colby S. Lambert, Agricultural Extension Agent, Cumberland County

Light Trap Data from Cumberland County

Number of Adult Insects				

Date	THW	CEW	GSB	BSB

July 7	-----	trap set up		
July 9	0	1	3	0
July 11	0	6	8	1
July 13	0	4	26	3
July 15	0	4	1	0
July 18	0	5	6	0
July 20	0	16	16	0
July 22	0	24	12	1
July 25	0	37	7	0
July 29	0	127	22	0
August 1	0	91	11	0
August 3	0	35	3	0
August 8	0	21	1	0

THW = tobacco hornworms; CEW = corn earworms;
 GSB = green stinks bugs; BSB = brown stink bugs

Trap located in Godwin at Cumberland/Harnett County Line
 at Lewis Farms off of Highway 301

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 8	-	-	-	0	0	0	-	-	-
July 11	0	0	0	0	1	3	-	-	-
July 13	0	0	0	0	1	1	4	0	6
July 15	0	0	0	0	0	0	0	0	4
July 18	0	0	0	3	0	0	0	0	0
July 20	0	0	0	3	0	2	2	0	4
July 22	0	0	2	4	0	0	1	0	2
July 25	1	0	7	14	0	0	0	0	4
July 27	5	0	5	22	0	0	0	0	1
July 29	4	0	1	26	0	1	0	0	1
August 1	10	0	3	41	0	2	1	0	1
August 3	6	0	3	19	0	2	0	0	0
August 5	10	0	2	28	0	0	1	0	2
August 8	4	1	0	19	0	1	0	1	5
August 10	1	0	0	9	0	0	0	0	1
August 12	0	0	0	5	0	0	0	0	1
August 15	0	0	0	4	0	1	1	0	4

Abbreviations: CEW = corn earworms;
 BS = brown stink bugs; GS = green stinks bugs

From: Arthur Whitehead, Jr., County Extension Director, Halifax County

Light Trap Data from Halifax County

Hobgood			East Enfield			Weldon			
*****			*****			*****			
Date	CEW	BSB	GSB	CEW	BSB	GSB	CEW	BSB	GSB

July 11	0	0	0	-	-	-	-	-	-
July 13	4	0	6	-	-	-	-	-	-
July 15	0	0	0	-	-	-	-	-	-
July 18	0	0	0	12	0	0	3	0	0
July 20	2	0	4	0	0	0	6	0	0

July 22	2	0	1	15	0	2	4	0	0
July 25	0	0	4	9	0	0	7	0	1
July 27	1	0	1	14	0	0	10	0	1
July 29	-	-	-	-	-	-	-	-	-
August 1	1	0	1	0	0	10	10	0	1
August 3	0	0	0	12	2	0	2	0	0
August 5	1	0	2	8	0	0	1	0	3

Abbreviations: CEW = corn earworms;
 GSB = green stink bugs; BSB = brown stink bugs

From: Alan A. Harper, Lenoir County

Light Trap Data from Lenoir County

Number of Adult Insects

Date	HW	CEW	ECB	AW	AWC	GSB	BSB	TBW
July 18	0	9	0	0	1	0	0	0
July 19	0	1	2	0	0	1	0	0
July 20	0	5	0	0	0	2	0	0
July 21	0	20	1	0	2	2	0	1
July 22	0	15	0	0	0	4	0	0
July 23	0	8	0	0	3	1	0	0
July 24	0	4	0	0	0	0	0	0
July 25	0	8	0	0	1	0	0	0
July 26	0	11	0	0	2	0	0	0
July 27	0	16	0	0	0	0	0	1
July 28	0	24	0	0	1	2	0	2
July 29	0	13	0	0	3	1	0	0
July 30	0	34	0	1	2	2	0	0
July 31	0	29	0	1	2	2	0	0
August 1	1	36	1	0	3	1	0	0
August 2	0	17	0	1	2	4	0	0
August 3	0	23	1	0	2	0	0	0
August 4	0	20	0	1	3	0	0	0
August 5	0	25	0	3	3	3	0	0
August 6	0	39	0	0	1	1	0	0
August 7	0	25	0	1	3	0	0	0
August 8	0	5	0	1	2	0	0	0
August 9	0	5	0	2	1	2	0	0
August 10	0	20	0	3	2	0	0	0
August 11	0	15	1	3	5	0	0	0
August 12	0	10	1	1	1	1	0	0
August 13	0	15	1	1	0	2	0	0
August 14	1	7	0	0	0	1	0	0
August 15	2	7	0	0	3	0	0	1
August 16	0	7	0	1	1	2	0	0
August 17	0	5	0	1	1	0	0	0
August 18	-----light trap unplugged-----							
August 19	0	9	1	0	0	2	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: Al Cochran, County Extension Director, Martin County

Light Trap Data from Martin County

	Robersonville		Farm Life	

Date	BW	GSB	BW	GSB

July 8	8	3	2	6,1*
July 13	3	1	3	0
July 15	3	0	0	3
July 18	5	0	2	0
July 20	5	1	3	1
July 22	9	1	12	0
July 25	12	1	7	1
July 27	17	0	8	4
July 29	17	0	24	0,6*
August 1	21	2	29	7
August 3	18	1	25	5,5*
August 5	13	1	11	3,1*
August 8	14	1	24	1
August 10	12	0	20	0
August 12	7	0	-	-
August 15	6	0	-	-
August 17	6	0	6	1
August 19	16	0	6	0

BW = Bollworm moths; GSB = Green stink bugs
* brown stink bugs

From: Craig Ellison, Agricultural Extension Agent, Northampton County

Light Trap Data from Northampton County

Number of Adult Insects																						

	Woodland			Conway			Galatia			Seaboard			Gaston			W. Gaston			Jackson			
	*****			*****			*****			*****			*****			*****			*****			
Date	CEW	GR	BR	CEW	GR	BR	CEW	GR	BR	CEW	GR	BR	CEW	GR	BR	CEW	GR	BR	CEW	GR	BR	

July 11	-	-	-	21	0	0	-	-	-	-	-	-	-	-	-	-	-	-	6	15	0	
July 13	-	-	-	13	2	0	-	-	-	0	0	0	-	-	-	-	-	-	21	11	0	
July 15	-	-	-	0	0	0	-	-	-	0	0	0	-	-	-	-	-	-	7	0	0	
July 18	-	-	-	1	0	0	2	0	0	2	0	0	2	0	0	-	-	-	0	0	0	
July 20	0	1	1	2	12	0	2	0	0	4	0	0	8	0	0	-	-	-	19	6	0	
July 22	0	1	0	0	0	2	7	0	0	1	3	0	13	0	0	-	-	-	17	5	0	

July 25	0	1	0	0	16	0	7	7	0	8	25	0	6	0	0	-	-	-	35	29	0
July 27	3	0	0	7	26	0	23	11	0	1	7	0	8	1	0	-	-	-	17	17	1
July 29	0	4	2	14	5	1	22	2	1	0	0	0	12	4	0	-	-	-	28	15	1
August 1	0	1	0	15	5	0	49	5	0	4	3	0	-	-	-	-	-	-	63	25	5
August 3	0	2	0	8	5	0	25	2	0	6	18	0	-	-	-	-	-	-	26	12	2
August 5	4	0	1	8	3	2	25	0	1	4	8	0	-	-	-	-	-	-	35	5	1
August 8	1	0	0	12	2	0	18	0	0	8	2	0	-	-	-	-	-	-	58	6	1
August 10	0	0	0	8	2	0	6	0	0	6	2	0	-	-	-	-	-	-	61	2	0
August 12	2	0	0	2	0	0	-	-	-	2	0	0	-	-	-	-	-	-	36	0	0
August 15	0	1	0	4	0	0	6	1	0	4	1	0	-	-	-	-	-	-	36	3	0
August 17	2	0	0	1	0	0	-	-	-	2	0	0	-	-	-	-	-	-	18	2	0
August 19	2	0	0	-	-	-	4	0	0	-	-	-	-	-	-	-	-	-	17	0	0

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

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

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

Light Trap Data from Onslow County

Number of Adult Insects

Date	Bollworms	GSB	BSB	Hornworms
July 22	30	1	-	-
July 25	30	1	-	-
July 27	80	2	-	-
July 29	115	7	-	-
August 1	155	3	-	-
August 3	105	5	-	-
August 5	58	0	-	-
August 8	-	-	-	-

GSB = green stinks bugs; BSB = brown stink bugs

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

From: Keith Kettner, Agricultural Extension Agent, Sampson County

Light Trap Data from Sampson County

Number of Adult Insects			

Date	GSB	BSB	BW

July 26	8	-	85
July 29	6	2	92
August 1	10	4	105
August 5	25	5	76
August 8	9	4	180
August 12	18	6	292
August 15	11	3	219
August 19	14	2	326

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

Black trap located 6 miles south of Clinton on
US-701S on the farm of Mike and James Hope.

From: Dominic Reisig, Extension Entomologist

Light Trap Data from Tidewater Research Station (Washington County)

Number of Adult Insects									

Date	CEW	TBW	ECB	AW	SBL	BSB	GSB	BaSB	DSB

June 22	9	0	0	0	0	0	1	0	0
June 24	5	0	0	0	0	2	2	0	0
June 27	4	0	0	0	0	17	0	0	0
June 29	3	0	0	0	0	13	0	0	0
July 1	3	0	0	0	0	6	0	0	0
July 4	3	0	0	0	0	2	0	0	0
July 6	0	0	0	0	0	2	1	0	0
July 8	2	0	0	0	0	1	3	5	0
July 11	1	0	0	0	0	0	0	0	0
July 13	1	0	0	0	0	5	2	0	1
July 15	0	0	0	0	0	2	1	0	0
July 18	0	0	0	0	0	0	0	0	0
July 20	0	0	0	0	0	0	0	0	0
July 22	0	0	0	0	0	0	0	0	0
July 25	6	0	0	0	0	0	0	1	0
July 27	14	0	0	0	0	1	1	2	0
July 29	11	0	0	0	0	2	4	0	0
August 1	6	0	0	0	0	2	6	3	0
August 3	2	0	0	0	0	0	0	0	0
August 5	5	0	0	0	0	3	2	0	0

August 8	7	0	0	0	0	6	0	0	0
August 10	13	0	0	0	0	1	0	0	0
August 12	8	0	0	0	0	0	0	0	0
August 14	3	0	0	1	0	0	0	0	0
August 17	3	0	0	0	0	0	0	0	0
August 19	0	0	0	0	0	0	0	0	0

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

Pheromone Trap Data from Tidewater Research Station, Tyrrell County and Upper Coastal Plains Research Station

	Tidewater		Tyrrell Co.		UCPRS	
	*****		*****		*****	
Date	CEW	TBW	CEW	TBW	CEW	TBW

June 9	-	-	11	2	6	7
June 15	0	4	1	5	0	0
June 22	-	9	7	6	7	2
June 30	-	-	9	16	11	15
July 8	-	5	16	4	3	16
July 11	-	-	36	0	-	-
July 12	2	4	-	-	-	-
July 13	-	-	-	-	17	0
July 18	-	-	6	0	-	-
July 19	13	0	-	-	-	-
July 20	-	-	-	-	15	0
July 25	-	-	47	1	-	-
July 26	18	-	-	-	-	-
July 27	-	-	-	-	24	0
August 1	40	4	324	4	62	-
August 10	16	0	295	5	34	0

Abbreviations: CEW = corn earworms; TBW = tobacco budworms

From: Kevin Johnson, County Extension Director, Wayne County

Light Trap Data from Wayne County

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*****
                        Number of Adult Insects
                        *****
                        Goldsboro
                        *****
Date                   GSB    BSB    CEW    HW
*****
July 6                 0      2      0      0
July 8                 2      1      -      -
July 11                -      3      3      3
July 13                1      8      4      1
July 15                -      1      1      -
July 18                -      -      2      -
July 20                2      -      4      -
July 22                1      3     29      -
July 25                9      3     50      -
July 27                3      3     85      2
July 29               10      3     45      1
August 1              10      -     61      -
August 3               6      2     68      -
August 5               6      3     30      -
August 8               2      1     26      1
August 10              3      -     12      -
August 12              -      -      4      -
August 15              -      -      4      1
August 17              -      -      5      -
August 19              -      -     34      1
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GSB = green stink bugs; BSB = brown stink bugs; CEW = corn earworms; HW = hornworms

Cooperator: Willie Howell (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 13                -    -          1    9          -    -
July 15                2    0          1    2          -    -
July 18                3    0          2    1          -    -
July 20                0    3          2    2          -    -
July 22                3    1          0    7          -    -

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July 25	2	2	7	5	-	-
July 27	7	1	9	5	-	-
July 29	19	2	8	9	-	-
August 1	30	5	9	4	-	-
August 3	15	2	7	3	-	-
August 5	50	1	13	5	-	-
August 8	25	2	17	8	3	2
August 10	8	0	13	6	5	0
August 12	10	0	3	0	2	0
August 15	5	1	9	0	3	0
August 17	9	0	8	0	4	0
August 19	3	1	5	2	1	0

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.
