NC STATE UNIVERSITY COLLEGE OF AGRICULTURE & LIFE SCIENCES

North Carolina Pest News

Departments of Entomology and Plant Pathology

Volume 27, Number 15, July 20, 2012

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

In This Week's Issue . . .

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

FIELD AND FORAGE CROPS

From: Jack Bacheler, Extension Entomologist

Stink Bugs in Cotton

With many cotton fields just beginning to reach the second and third week of bloom, this is the prime time to be regularly checking 25 quarter-sized (a size range of 0.9 to 1.1 inches is recommended) bolls per field for internal

damage from stink bugs. Weeks 3 through 5 of the bloom period is the time interval when the levels of stink bug-susceptible bolls are at their highest. This is also the time when a 10% damage threshold should be used (see Table 1). Remember that our goal is to reduce or eliminate an economically-damaging population of stink bugs, not to ineffectively try to reverse boll damage that's already taken place. A number of consultants have realized that biologically, a true threshold would not, for example, automatically drop from 30% internal boll damage at midnight at the end of week two of blooming to 10% one minute later at 12:01 a.m. at the beginning the third weed of bloom. Interpolating thresholds at or near blooming-based abrupt changes in suggested thresholds as one week transitions into another makes sense.

Using the dynamic threshold and selecting quarter-sized bolls gives us our best odds of keeping stink bugs below economically damaging levels based on recent boll damage. Because much of this boll damage is recent, the inner boll wall warts and stained lint that constitute a damaged boll may be subtle. Therefore, be sure to score a boll with slight inner carpal wall warting or stained lint as damaged, as this damage may have occurred in the past 24 hours, or less, and indicate a resident stink bug population.

Table 1. Suggested inner boll damage thresholds as determined by week of bloom (dynamic threshold).

Week of bloom	Threshold (% internal boll damage)
1	50
2	30
3	10
4	10
5	10
6	20
7	30
8	50

Based on calls and our own observations, we appear to have moderate to high levels of stink bugs in many areas of the state, with a few fields in the mid 20% boll damage level. Fortunately, up to this point many cotton fields are in the single digits for damage, though this could change during the next week as more stink bugs invade cotton fields and additional fields enter the third week of bloom when the 10% threshold is in effect.

We would advise that producers check with dealers and distributors as early as possible about product availability as shortages exist for many products this year.

Cotton Aphids

During the past two weeks, Dominic Reisig and I have received several calls about possible limited cotton aphid control with our standard nicotinoids, Centric and Admire Pro. Cotton aphid collections from two of the locations could not be sent to Mississippi to determine if resistance might have been the culprit because the fungus wiped out the populations. An additional sample was overnight mailed for resistance determination, although that sample also had some sign of the fungus. We'll keep you posted

about possible cotton aphid resistance to this chemical class in subsequent issues of *North Carolina Pest News*. At present, we do nor suspect that cotton aphid resistance to chloronicotinoids is widespread in North Carolina.

Most importantly, remember that natural control of cotton aphids in the form of beneficial insects like ladybird beetles, the mummy-forming wasp parasite and the cotton aphid fungus, is our most effective line of defense in keeping potential and established aphid outbreaks in check here in the Southeast. A hand lens can be a big help in confirming the presence of the aphis fungus, *Neozygites fresenii*, primarily by far more easily recognizing individual aphid cadavers.

Significant New Kudzu Bug Finding

The discovery of several established kudzu bug populations on kudzu by a former Clemson University graduate student (I guess that's the real surprise) in Vicksburg in the southern Delta this past week is significant. This finding represents a significant jump in the range of this pest across the whole state of Mississippi from previously confirmed sites in Alabama. The Warren County, Mississippi location is also one county south of point where the state boundaries of Mississippi, Arkansas and Louisiana converge.

Major Kudzu Flight Underway in Southern Counties

We are beginning to see the major kudzu bug flights into soybean in our southern counties, in most cases so far with very few nymphs present. All producers should be advised to tolerate even significant levels of adults in soybean fields and base treatment decisions on the finding of 15 immature fuzzy kudzu bug nymphs per 15 sweeps taken from 6 to 8 locations at least 50 feet in from field edges. If a grower waits until this nymph threshold is met, yields are still protected; plus the odds of a second or third follow-up spray are lower, according to data developed by Phillip Roberts (University of Georgia Extension) and Jeremy Greene (Clemson University Extension) in 2010 and 2011.

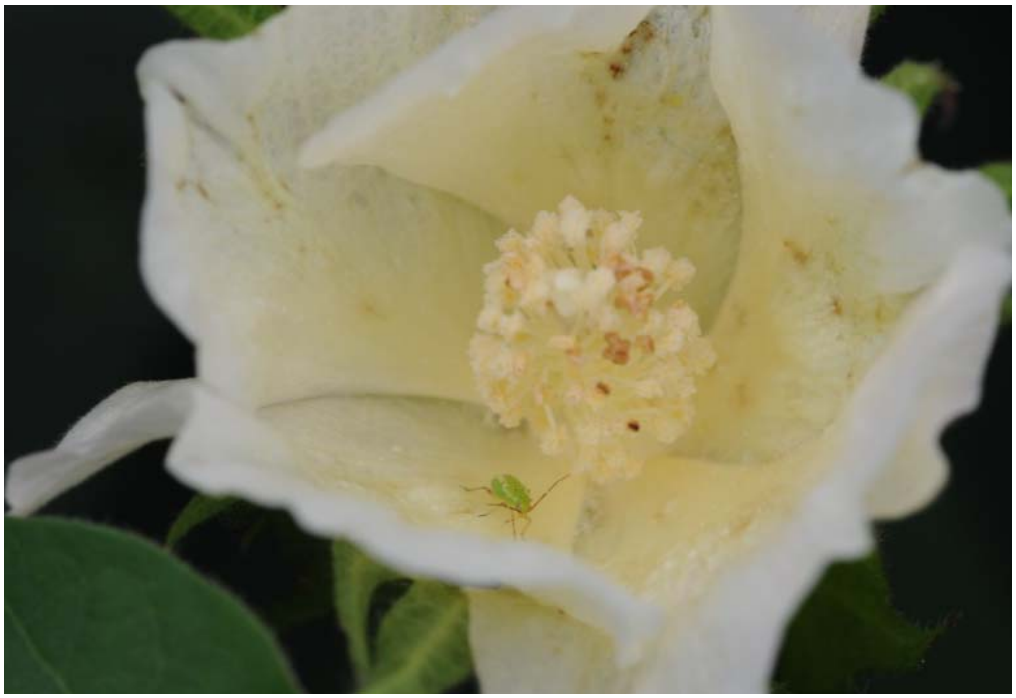
This past Tuesday, Dominic Reisig, his graduate student, myself and others were taking data in a maturity group/planting date test (April, May and June "full season" plantings and another June planting behind wheat) in Scotland County. We observed many kudzu bug adults per plant in the April and May plantings beans, but almost no nymphs. Very few adults were found in the June-planted "full season" and "wheat beans". The same trend was also seen the same day in an identical test at the Sandhills Station in Montgomery County.

We realize that some producers may be hard pressed to hold off on waiting until the nymph threshold is met. However, the best current information strongly suggests that a nymph-based treatment threshold provide producers their best odds of avoiding unnecessary sprays while protecting yields.

From: Dominic Reisig, Extension Entomologist

Elevated Risk for Plant Bugs in Northeastern North Carolina Cotton

Last week, Jack Bacheler presented the scenario of a moderate risk for plant bugs in cotton (see http://www.nccrops.com/2012/07/12/moderate-risk-for-plant-bugs-in-cotton). Although in many north-eastern North Carolina fields, square retention still remains high, small first and second instar nymphs may be present at or near threshold levels. One of our consultants, Stan Winslow, spoke at the Chowan County cotton and soybean scouting school on July 20 and reported this phenomenon. This was further confirmed when we demonstrated sampling techniques in cotton later during the day. Stan, who has a lot of plant bug experience, mentioned the late-maturing crop, with many adults still holding in corn and weedy hosts. If conditions are right, we could see an influx of these adults into cotton, further amplifying the current plant bug densities in cotton. He theorized that adults may be moving into and out of cotton fields, laying eggs and doing a little feeding. In this case, the adults may escape detection while the nymph population builds.



Tarnished plant bug nymph in cotton flower. Note the "dirty bloom", a result of square feeding. Image from D. Reisig.

Remember that plant bugs will feed nearly anywhere on the plant. Internal boll injury mimics that of stink bugs. Scouting recommendations have been covered in the article mentioned above. The plant bug threshold is eight per 100 sweeps, or two to three bugs per sample, using a 2½ foot black drop cloth. Small nymphs, like those now present in cotton will bright green and more on the black drop cloth compared to the sweep net.

ORNAMENTALS AND TURF

From: Steve Frank, Extension Entomologist

Rose Rosette Disease

I have had several clinic samples of rose rosette disease this year. It is believed to be caused by a virus transmitted by tiny eriophyid mites. The disease causes unusual symptoms on rose bushes including rapid growth, deformed shoots and buds, dense areas of soft spines, witches broom and others. The symptoms are highly variable and depend on rose cultivar and other unknown factors. The important thing to recognize is that unusual growth symptoms may indicate the disease, that there is no cure for the disease and very little effective control for the mites. Infected plants should be discarded and as much roots and other tissue removed from the site as possible. This disease also attacks exotic multiflora roses. Though no one would shed a tear about that multiflora rose, it can be a reservoir on your property, which is another good reason to kill the multiflora rose.

Rose rosette disease on multiflora rose. Photo: James W. Amrine Jr., West Virginia University, accessed from http://www.insectimages.org/.

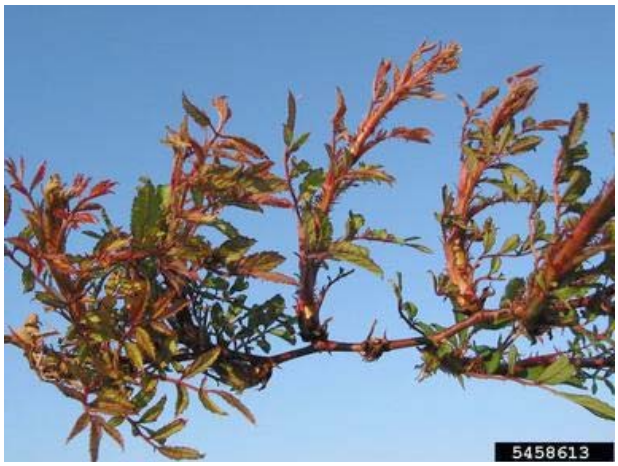
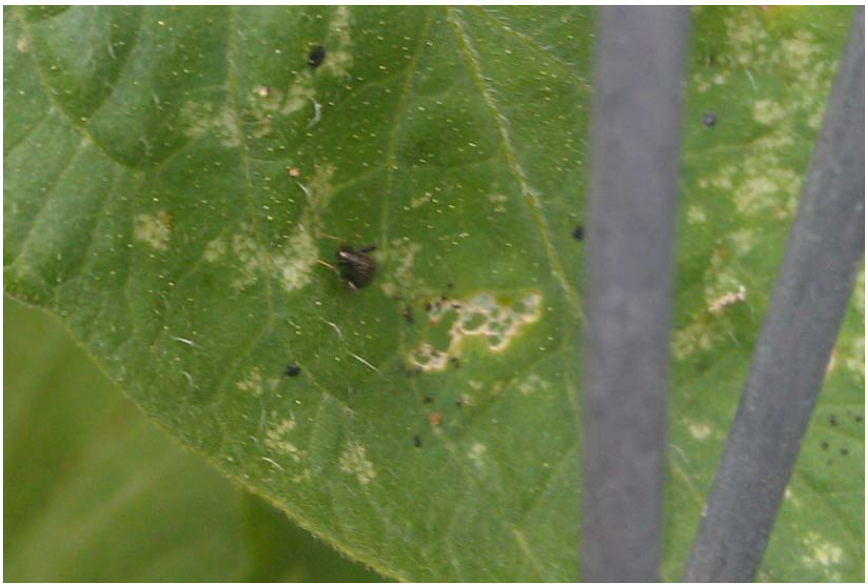


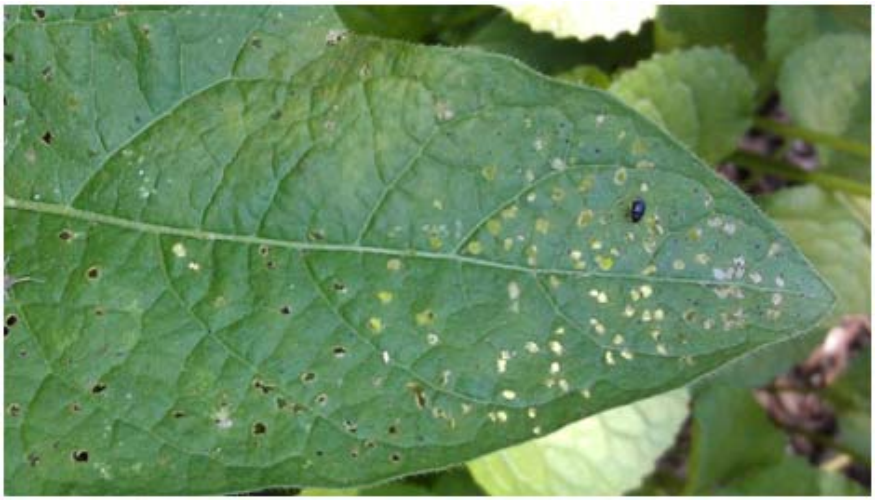
Photo: Dawn Dailey O'Brien, Cornell University, http://www.bugwood.org.

Flea Beetles Abound

Flea beetles of all kinds are active this time of year. I have seen them on many kinds of plants almost in every landscape I look in. Flea beetle damage is very characteristic and looks like tiny shot holes in the foliage. The beetles themselves are generally tiny and shiny black though there are many species. They generally jump when you approach. Though you will not necessarily be able to determine exactly which flea beetle you have since there are so many kinds. Some are fairly host specific or at least are primarily a pest on some hosts even if they feed widely. An ornamental example includes the red headed flea beetle (http://ipm.ncsu.edu/current_ipm/12PestNews/12News8/pestnews.pdf).



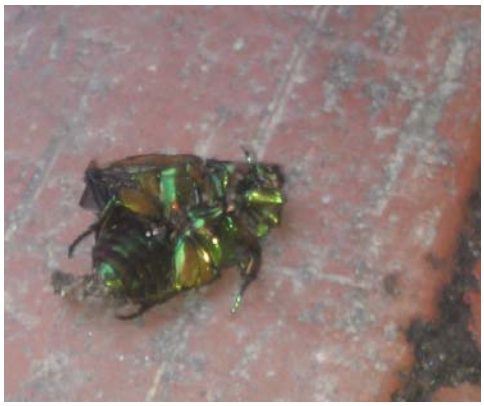
Flea beetle on tomato leaf. Photo: S. D. Frank.



Flea beetle and characteristic damage on night shade. Photo: S. D. Frank.

June Beetles are Flying

This week we saw the first June beetles in Raleigh. I have not seen many except the poor critter in this picture but others have reported more. They are not much of a threat to plants. The grubs feed on turf but rarely to the extent that damage is seen. The adults will feed on ripening fruit such as grapes but are only out a couple weeks so it is best to just wait.



Green June beetle squished under a light on campus. Photo: S. D. Frank.

INSECT TRAP DATA

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 9	2	2	0	2	0
July 12	2	2	1	0	0
July 16	0	0	0	0	0
July 20	41	3	2	0	1

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

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

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 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

	Number of Adult Insects							
Date	HW	CEW	ECB	AW	AWC	GSB	BSB	TBW
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
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
July 14	----------	----------	----------	Light unplugged	----------	----------	----------	----------
July 15	0	7	0	11	6	1	0	0
July 16	0	6	0	6	2	1	1	1
July 17	0	4	1	2	4	0	2	0
July 18	0	8	0	1	3	2	1	0
July 19	0	5	0	4	3	0	0	1
July 20	0	5	0	0	0	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: 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 18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	16	-
July 20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	14	-

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 and B. Bryant

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 18	27	9	0	0	-	-	-	-	-	-	-	-
July 20	52	10	2	0	-	-	-	-	-	-	-	-

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

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
July 16	8	1	27	1
July 18	1	1	15	1
July 20	4	2	7	1

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

Cooperator: Gerald and Willie Howell Farm (Goldsboro)

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

Light Trap Data from Wilson County

	Number of Adult Insects					
	Kenly		Fountain		Pender's	
Date	CEW	GSB	CEW	GSB	CEW	GSB
July 16	5	0	-	-	-	-
July 18	3	2	-	-	-	-
July 20	2	3	-	-	-	-

CEW = corn earworms; GSB = green stink bugs

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