



The University of Georgia  
**Cooperative Extension**  
 College of Agricultural and Environmental Sciences

June 10, 2010

***COTTON PEST MANAGEMENT NEWSLETTER #1***

**COTTON SITUATION:** The Georgia Weekly Crop Progress and Condition Report for the week ending June 6<sup>th</sup> listed the crop as 89 percent planted which is slightly ahead of the 5 year average of 86 percent. Moisture for planting has been adequate in most areas. However, plants have been slow to grow and develop in some.

**INSECT SITUATION:** Tarnished plant bug infestations have been reported from several areas in the state. Be sure to monitor all fields which are squaring for tarnished plant bugs and damage. Plant bugs have historically been a minor and sporadic pest in Georgia, however, populations appear to be higher than normal and square retention has dropped to unacceptable levels in some fields. Thrips infestations have been moderate to high and infestations appear to have sustained later in the planting window than in past years. Cotton remains susceptible to thrips until seedlings reach the 4-5 leaf stage and are growing rapidly.

**Cotton Scout Schools:** Cotton insect scouting schools are annually held at various locations in Georgia. These programs offer basic information on cotton insects and scouting procedures and will serve as a review for experienced scouts and producers and as an introduction to cotton insect monitoring for new scouts. Program Agendas are found at the end of this newsletter.

Location	City	Date	Time	Contact for additional information
Tifton Campus Conference Center	Tifton GA	June 14, 2010	9:00 am -12:30pm	Debbie Rutland (229) 386-3424
Southeast Research and Education Center	Midville GA	June 22, 2010	9:00 am -12:30pm	Peyton Sapp (706) 554-2119

**Plant Bugs (SCOUT ALL SQUARING FIELDS):** During the past week we have received several reports and made observations of threshold populations of adult tarnished plant bugs infesting some squaring cotton fields. Square retention rates were below (in a few instances significantly below) the 80 percent square retention threshold in some fields. Our goal should be to retain 80 percent of all first position squares at first bloom. **Scout fields and only make insecticide applications if threshold levels of damage are observed.** Disruption of beneficial insects with insecticides increases the risk of flaring other pests such as aphids and spider mites.

Dr. John Ruberson, research entomologist - biological control, has also observed significantly greater populations of plant bugs in weedy host plants this spring. For the past 6 years his program has monitored insect populations in weedy plants such as fleabane (this weedy plant has clusters of small white flowers and is currently blooming in ditches and other undisturbed areas).

Plant bug numbers are at least 3 times greater in fleabane this year compared with the previous five years. We sampled several fleabane patches yesterday and all life stages of plant bugs were present. This does not mean all plant bugs from fleabane will migrate to cotton (cotton is actually not a preferred host for plant bugs), but that populations across the landscape are higher than normal and the risk of plant bug infestations is greater than normal. Many have asked the question as to why plant bug numbers are up this year. I am not sure anyone knows for certain, but one would suspect that the rainfall pattern we have experienced this spring (which has been good for cotton planting) has allowed weedy host plants to sustain and thrive and plant bugs have taken advantage of this opportunity in terms of reproduction. In general rainfall has not been excessive, but we have not experienced prolonged drought in many areas. In areas where plant bugs are an annual insect pest, heavy plant bug years are typically associated with wet springs.



Tarnished Plant Bug Adult  
Photo by Ron Smith, ipmimages.org

UGA1858034

**Description:** Tarnished plant bug adults are about  $\frac{1}{4}$  inch in length vary in color from bronze to dark brown mottled with red, yellow, and black. The tips of the wings slant downward near the rear when the bug is at rest and adults fly rapidly when disturbed. Nymphs are green and wingless and are similarly shaped as adults. As nymphs develop, five black dots form on the back, on large nymphs developing wing pads will be found.

**Life History:** Tarnished plant bugs overwinter as adults and complete two or more generations on wild host plants prior to infesting cotton. Cotton is not a preferred plant host for plant bugs, but is sometimes infested when it is the most suitable host plant available. Adult females insert eggs into tender plant tissues which hatch in 7-10 days. Five nymphal stages occur and require 2-3 weeks for development to the adult stage. The complete life cycle requires about 4-5 weeks.

**Damage:** Primary damage caused by plant bugs is feeding on small (pinhead) squares in plant terminals. However, plant bugs may also feed on large squares, small bolls, and terminals. Plant bugs insert their needle like piercing sucking mouthparts into fruiting forms and feed on the plant juices. After a pinhead square has been damaged, it turns yellow to brown or black and easily falls from the plant when disturbed. Healthy undamaged squares will be firmly attached to the plant. When the square is shed by the plant, an elliptical scar where the square was attached remains. No visible damage is apparent on the outer surface of squares damaged by plant bugs. Plant bug feeding in the terminal may also alter plant physiology and result in a malformed plant. Large squares which are damaged will often remain on the plant and appear healthy and normal, however when the square blooms the flower will have warty growths on the petals and darkened anthers. This type of flower damage is referred to as a “dirty bloom”. Plant bugs may also feed on small bolls. Excessive feeding may cause boll shed, but most often localized lint and seed damage is the result. Callous warty growths on the inner surface of the boll wall will often form near the feeding site (appears very similar to stink bug damage).



**Scouting and Reporting:** Plant bugs and damage should be monitored from the time plants begin squaring through mid-bloom. Square retention counts are used to detect problems with plant bugs. Inspect one pinhead square in the terminal of plants, note if it is good or bad/missing and report the percentage of healthy green squares retained by the plant. Pinhead squares should be present when cotton has 6-8 nodes. They will be found at the base of the leaf petioles where they are attached to the mainstem in the top of the plant. The small square sits atop a short stem which will ultimately elongate into a fruiting branch. It is also a good habit to periodically pull plants when walking fields and monitor fruit set on the entire plant. Our goal is to retain 80 percent of first positions at first bloom. Sweep nets are a good tool to monitor adult plant bugs. Although we do not have established thresholds for sweep net sampling in Georgia, Mid-South states where plant bugs are an annual pest do. If using a sweep net for sampling be sure to use a 15 inch diameter net. Sweep nets are available through various suppliers such as Gemplers or Great Lakes IPM. Sweep net thresholds for tarnished plant bugs in Mississippi are:

First 2 weeks of Squaring:	8 bugs per 100 sweeps
Third week of squaring through bloom:	15 bugs per 100 sweeps

Even if sweep nets are used to monitor plant bug populations, we feel it is still extremely important to monitor square retention rates.

**Control:** Insecticides should only be applied when thresholds are met or exceeded. Insecticide applications may potentially flare other pests such as aphids or spider mites. Plant bug insecticides include acephate (Orthene), dicotophos (Bidrin, can only be used from emergence to pre-square during early season and from first bloom to 30 days prior to harvest during late season – see label), imidacloprid (multiple trade names), oxamyl (Vydate), and thiomethoxam (Centric). In fields where both plant bugs and aphids are present, the neonic insecticides imidacloprid and thiamethoxam would be good options. There are several formulations of imidacloprid so be sure to read labels for appropriate rates (high rates will provide improved control of plant bugs).

**Thrips:** Thrips populations have lingered for a more extended time this season compared with previous years. In fields infested with thrips where seedling growth was slowed from herbicides or other stresses, thrips injury has been compounded. Rapidly growing seedlings can better tolerate thrips infestations. We have received a few questions on residual activity of at plant thrips insecticides. Historically the seed treatments provide thrips control for about 3 weeks after planting and Temik provides control for about 4+ weeks depending on rate.

**INSECT UPDATES:** Check the **Cotton Insect Hotline (1-800-851-2847)** for updates on current insect conditions. The Cotton Pest Management Newsletter and additional cotton production information is also posted on the UGA Cotton Homepage at: <http://www.ugacotton.com>

**COTTON SCOUT SCHOOL**  
**June 14, 2010**  
**Tifton Campus Conference Center**  
**Tifton, Georgia**

9:00	WELCOME	<b>PROGRAM PARTICIPANTS</b>
9:05	COTTON GROWTH AND DEVELOPMENT	<i>Guy Collins</i> - Extension Agronomist
9:30	INSECT SCOUTING PROCEDURES	<i>Phillip Roberts</i> - Extension Entomologist
9:40	LARVAL INSECT PESTS	<i>John Ruberson</i> - Research Entomologist
10:10 - 10:20	BREAK	<i>John Herbert</i> - Research Entomologist
10:25	BUG PESTS	
10:55	NATURAL CONTROLS	The Cooperative Extension Service, The University of Georgia College of Agricultural and Environmental Sciences offers educational programs, assistance, and materials to all people without regard to race, color, national origin, age sex, or handicap status.
11:15	SAFETY	An Equal Opportunity Employer
11:35	FIELD TRIP	
12:30	ADJOURN - Have a safe trip home	

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**COTTON SCOUT SCHOOL**  
**June 22, 2010**  
**Southeast Research and Education Center**  
**Midville, Georgia**

9:00	WELCOME	<b>PROGRAM PARTICIPANTS</b>
9:05	COTTON GROWTH AND DEVELOPMENT	<i>Peyton Sapp</i> - Burke County Extension
9:30	INSECT SCOUTING PROCEDURES	<i>Anthony Black</i> - SEREC Superintendent
9:40	LARVAL INSECT PESTS	<i>Phillip Roberts</i> - Extension Entomologist
10:10 - 10:20	BREAK	<i>Jared Whitaker</i> - Extension Agronomist
10:25	BUG PESTS	
10:55	NATURAL CONTROLS	The Cooperative Extension Service, The University of Georgia College of Agricultural and Environmental Sciences offers educational programs, assistance, and materials to all people without regard to race, color, national origin, age sex, or handicap status.
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Sincerely,

Phillip Roberts  
Extension Entomologist

Putting knowledge to work

COLLEGE OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES, COLLEGE OF FAMILY AND CONSUMER  
SCIENCES, WARNELL SCHOOL OF FOREST RESOURCES, COLLEGE OF VETERINARY SCIENCES

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