



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

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COTTON PEST MANAGEMENT NEWSLETTER #5

COTTON SITUATION: The Georgia Weekly Crop Progress and Condition Report for the week ending July 8th listed the crop as 55 percent squaring and 11 percent setting bolls which is significantly below the five year averages of 84 percent squaring and 37 percent setting bolls. Scattered rainfall events have been beneficial, but some areas remain dry.

INSECT SITUATION: Increased corn earworm and tobacco budworm activity has been reported in various areas. Survival of corn earworm moths captured in Tift County exposed to pyrethroid treated vials is elevated (see below). Aphids continue to be sporadic; we would anticipate numbers to increase in the coming days/weeks. Stink bug damage has been reported on some early planted cotton. Low populations of spider mites linger in some fields.

Corn Earworm Pyrethroid Susceptibility Monitoring using Adult Vial Tests: We have been monitoring corn earworm (CEW) pheromone trap captures at three locations with the objective of conducting Adult Vial Tests (AVTs) to monitor pyrethroid susceptibility. During the past week, CEW trap captures increased significantly at the Coastal Plain Experiment Station in Tift County (adequate captures to conduct AVTs) but remained fairly low at the Sunbelt Ag EXPO and Stripling Irrigation Research Park in Colquitt and Mitchell Counties (expect to increase).

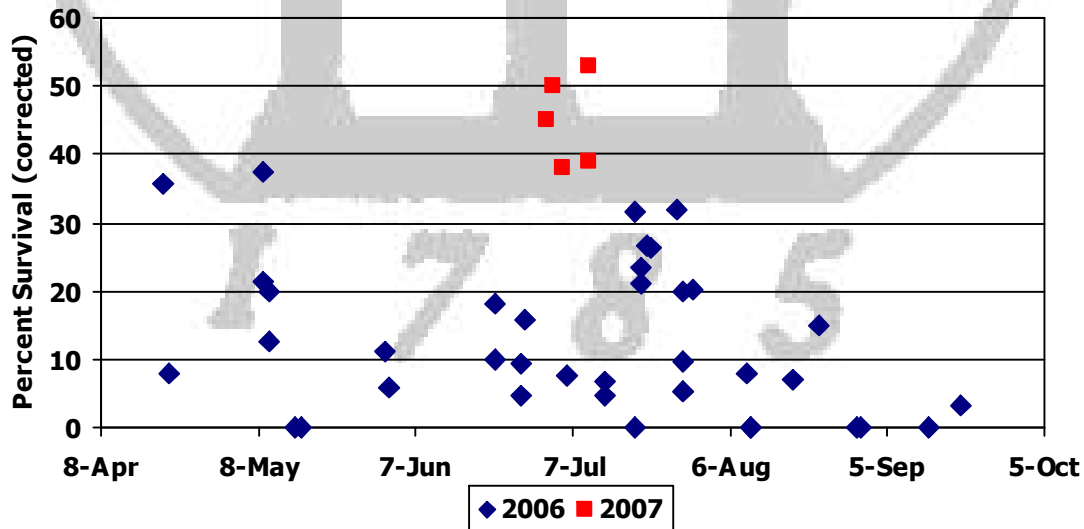


Figure 1. Percent survival by date of CEW moths 24 hours after exposure to 5µg/vial of cypermethrin in AVTs. 2006 data from Tift, Mitchell, Seminole, and Macon counties (n=742), 2007 data Tift County only (n=142).

Survival of CEW moths was elevated in AVTs conducted between July 2 and July 10 in Tift County (mean survival was about 45 percent at 5µg cypermethrin per vial for 142 moths tested which is greater than the percent survival for any date during 2006). Prior to July 2, we had not captured an adequate number of moths to conduct AVTs. Survival greater than 40 percent in AVTs is concerning. These levels of survival suggest that CEW will likely be more difficult to control with pyrethroids due to increased tolerance to the pyrethroid insecticides.

During 2005 and on a more limited basis in 2006 we observed reduced field efficacy in some areas when pyrethroids were used for control of CEW. In most situations, acceptable but not excellent control of CEW in Bt cotton was observed with multiple applications of pyrethroids. Collections of CEW larvae from problem fields during 2005 and 2006 exhibited elevated ED50s to pyrethroids (the dose required to control 50 percent of a population) indicating that some populations of CEW are more difficult to control.

We cannot predict if this apparent problem of increased tolerance to pyrethroids in CEW will develop further or if, when, where, and to what extent it may occur. We do know that problems with control are most often recognized with heavy infestations. It is a numbers game, 50 percent control of 15 larvae per 100 plants leaves 7 or 8; we are not satisfied with the control but can probably tolerate it. However 50 percent control of 50+ larvae per 100 plants leaves 25+ large larvae per 100 plants and significant damage will occur.

Recommendations for Control of Corn Earworm in 2007:

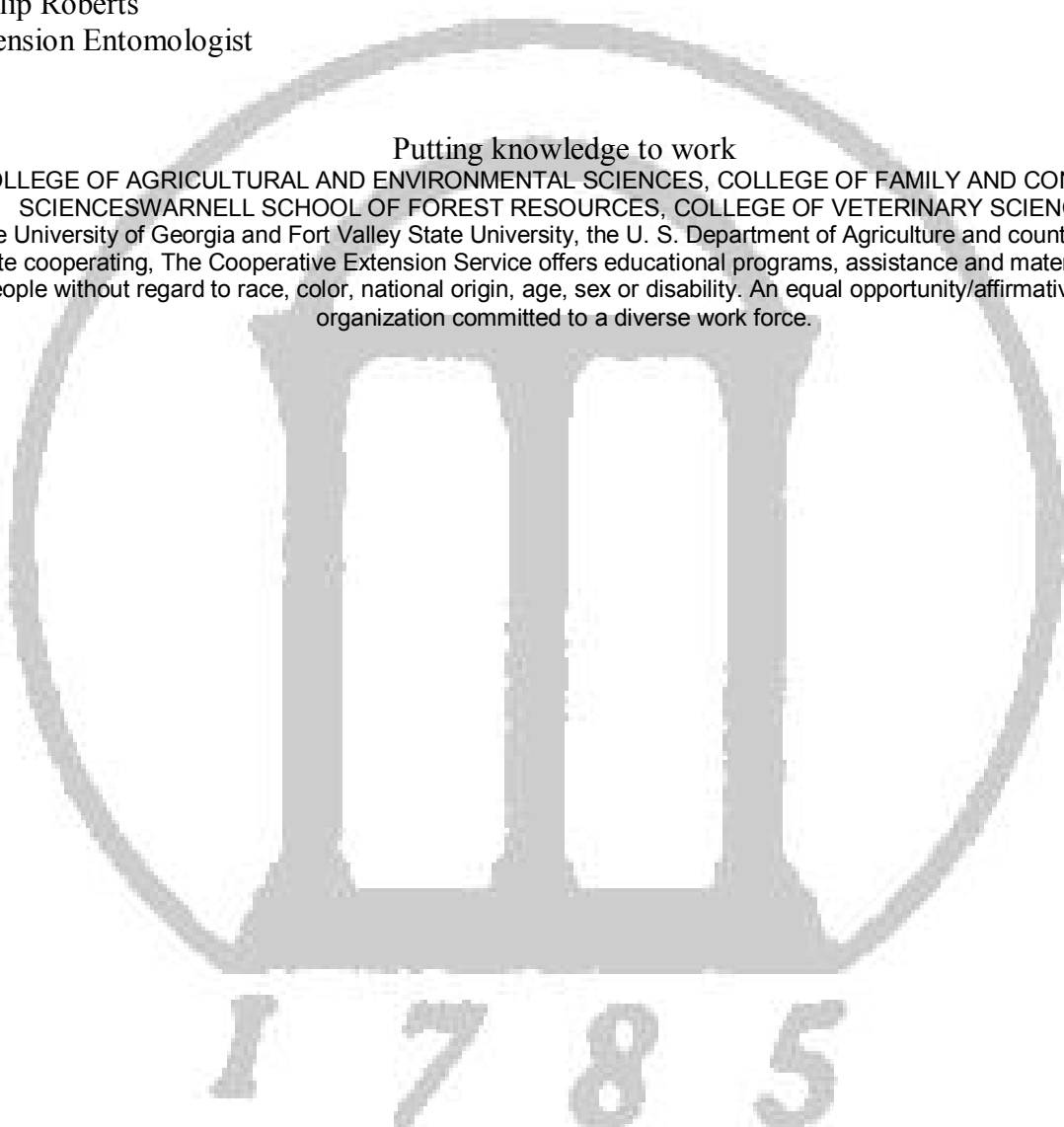
1. Scout fields thoroughly and only treat pest(s) on an as-needed basis (i.e. conserve beneficial insects). No recreational spraying. Be timely with applications.
2. Low Infestations: use medium to high rates of pyrethroids (avoid low rates).
3. Moderate to Heavy Infestations: add an ovicide or another larvacide with a medium to high rate of pyrethroid.
4. Efficacy of pyrethroid sprays should be evaluated three days after application. If poor control of corn earworm is observed and other factors of poor control (coverage, rate, timing of application) can be ruled out, a non-pyrethroid insecticide should be used.

Adult Vial Tests Procedures: AVTs are performed using 20 ml scintillation vials coated with an acetone solution of technical grade cypermethrin with dosages of 5 µg/vial and an acetone treated check. Individual moths (captured the previous night) were placed in treated and untreated vials and survival is checked after 24 hours. Only moths which are able to fly in a normal manner are considered alive. Percent mortality in the treated vials is corrected for mortality in the untreated.

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>

Sincerely,

Phillip Roberts
Extension Entomologist



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