

North Carolina Pest News

Departments of Entomology and Plant Pathology



Volume 26, Number 13,
July 8, 2011

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

Steve Bambara Retires from North Carolina State University

Steve Bambara, Extension Entomologist at North Carolina State University, retired on June 30, 2011 after 32 years of service to the university and the public. During that time, he worked in many areas of entomology, including apiculture, small grains, forage crops, and non-commercial ornamentals and turf. Steve also developed a highly-regarded entomology 4-H program.

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Empowering People • Providing Solutions

Regular readers of the *North Carolina Pest News* are undoubtedly familiar with Steve Bambara's weekly articles on ornamental and turf insects. His articles were always informative, timely and insightful, with a generous application of humor.

We congratulate Steve Bambara on a very productive career as an entomologist and Extension educator and wish him the very best in his retirement. He will be missed by the Department of Entomology, the Cooperative Extension Service and, of course, by readers of the *North Carolina Pest News*.

Weed Management Field Days and In-Service Training

The following field days emphasizing weed management will be held in North Carolina:

Moore County near Carthage: August 5 beginning at 9 a.m. until approximately 12:00 noon. For directions, contact Seth Holt, Agricultural Extension Agent, Lee County (e-mail: seth_holt@ncsu.edu).

Upper Coastal Plain Research Station near Rocky Mount: August 15 from 8:00 a.m. until 12:00 noon. Take the Kingsboro Road exit (between Rocky Mount and Tarboro on US 64) and follow signs to the station.

Topics will include herbicide symptomology, weed management programs for various agronomic crops, and resistance management. The public will be invited, although this will serve as in-service training for county Extension agents. If agents want to have additional discussions about weed management, most of the instructors will be available after the session. If you have any questions regarding the field days, please contact David Jordan, Crop Science Specialist, North Carolina State University (e-mail: david_jordan@ncsu.edu).

FIELD AND FORAGE CROPS

From: Jack Bacheler, Extension Entomologist

In Cotton, Plant Bugs Hanging On

For the first time in many years, **plant bugs** don't seem to be fading away. However, this still translates into the vast majority of cotton fields that are not experiencing economic damage. In pre-bloom cotton in North Carolina the retention of upper squares is still our most efficient means of determining if further sampling for live plant bugs is required (retention < 80%) or if square retention can be rechecked in 5 to 7 days (square retention >80%). A sweep net is recommended for plant bugs in pre-bloom cotton, with a threshold of 8 to 10 or more adult and nymph stage plant bugs per 100 sweeps. If blooming has started, assessing a combination of square retention of less than 80%, dirty bloom levels of more than 10%, and the finding of some level of live plant bugs helps define if further sampling is needed. If so, a 2.5-foot black ground cloth is recommended. The small, fast, bright green plant bug nymphs, sometimes common in blooming cotton, are far easier to see with a black ground cloth than with a standard white model. Bayer (and possibly other) sales representatives have begun distributing the 2.5-foot black ground cloths. If none are available to you or your scout, consider spraying a white cloth with black paint. A threshold of 1.6 to 2.6 adult and nymph stage plant bugs per 5 foot of row varies by the cost of

application and its effectiveness, yield potential and price per pound of cotton. A round figure of 2 plant bugs per ground cloth sample should fit most situations here.

If plant bugs are at or slightly above the respective thresholds, consider chloronicotinoid insecticides such as Centric, Belay, Admire Pro, and Assail. Although these materials generally do not offer as effective control of plant bugs as Bidrin and Orthene, their use is far less likely to result in subsequent outbreaks of cotton aphids, spider mites or bollworms as the major moth flight approaches in the next 10 days or so. Co-pacs such as Endigo, Leverage 360, Besiege and Brigadier, which contain both a pyrethroid insecticide plus a chloronicotinoid insecticide, also provide good plant bug control but are probably better placed during the bollworm moth flight, especially if stink bugs are a consideration (primarily beginning with the third week of bloom) or if cotton aphids are also present.

Spider mites remained a minor problem for most producers in the state this past week, with very few acres requiring treatment. Good rainfall in many areas of the state these past few days have helped limit mite outbreaks.

Stink bugs have been found at low to low-moderate levels in several early-blooming cotton fields in the past few days. However, remember that the threshold for green and brown stink bugs is at least 50% internal damage to quarter-sized bolls during the first week of bloom and 30% during the second week of the bloom period.

Cotton and Soybean Insect Scouting Schools

Northampton County: July 19 at 9:30 a.m. at the Extension Offices in Jackson, NC, located at 9495 NC Highway 305. Contact Craig Ellison at 252-534-2831 or craig_ellison@ncsu.edu for details.

Halifax County: July 19 at 2:00 p.m. at the County Government Center, 359 Farrell Lane, Halifax, NC. Contact Arthur Whitehead at 252-583-1683 or arthur_whitehead@ncsu.edu for details.

Cotton Scouting Schools

Bertie County: July 20 at 9:30 a.m. in Windsor, NC, probably at the Windsor Community Building. Contact Richard Rhodes at 252-794-5317 or richard_rhodes@ncsu.edu for details.

Area cotton scouting school for Edgecombe, Nash and Wilson counties: July 21 at the American Legion Building in Elm City in Wilson County (While heading north from Wilson, NC on Highway 301, take the East Langley Road exit and head toward Elm City. Proceed through four traffic lights beyond the railroad tracks and turn right onto American Legion Road.). Contact Art Bradley at 252-641-7815 or art_bradley@ncsu.edu or Norman Harrell at norman_harrell@ncsu.edu for details.

Both indoor and outdoor training will be provided at each of the above training sessions. These educational programs are presently offered to the public without a fee.

From: Dominic Reisig, Extension Entomologist

Fall Armyworms in Corn

Both corn earworms and fall armyworms will feed on kernels in the ear. Corn earworms are well established in the ears of timely planted corn at this point (Fig. 1). Fall armyworms are a migratory pest in North Carolina that can show up as early as May. With the warm weather this spring, I wouldn't have been surprised to hear about this, but things were quiet. I've been monitoring for fall armyworms for two weeks now on the Tidewater Research Station using a pheromone trap, but have only caught a few bumble bees.

If you have late-planted corn, or a later maturing variety (e.g., 126 day maturity), you're fortunate to have caught some rainfall at the right time. However, you're probably also aware that this can put you at risk for insect problems. This is exactly what I tried to do in a trial planted at the end of May at the Tidewater Research Station. This week, I observed leaf and whorl feeding from fall armyworms in non-*Bt* corn. Generally, *Bt* toxins targeted for corn borers reduce the injury seen from fall armyworms. If this is stacked with an additional *Bt* toxin targeted against other lepidopteran pests, there will be even less injury.



Fig. 1. Corn earworm larvae generally feed on the tips of the ear. Image from Dominic Reisig.



Fig. 2. Corn earworm and fall armyworm damage to vegetative corn is virtually indistinguishable. The image on the left is fall armyworm injury, while the image on the right is corn earworm injury. Images from Dominic Reisig.

The type of injury caused by corn earworm and fall armyworm feeding is nearly indistinguishable (Fig. 2), both in vegetative corn and when these insects feed on the ear. The best thing to do is to find the insect itself (Fig. 3). Leaf feeding by these pests in vegetative corn can negatively impact yield. A foliar insecticide treatment will be effective only if it is applied before the larvae enter the protection of the whorl. Treatment is rarely needed unless corn earworms or armyworms infest a majority of the plants. Yield loss as a result of ear feeding from both corn earworms and fall armyworms has not been widely documented. There may be some association between larval feeding and increased levels of aflatoxin, but the data are not conclusive.



Fig. 3. This fall armyworm was snugly wrapped in a whorl of corn. Image from Dominic Reisig.

From: Barbara Shew, Extension Plant Pathologist

Time for Peanut Disease Control

Now is the time for peanut growers to begin foliar disease control programs. The first fungicide spray should go on when peanuts reach R3, or when about half the plants in a particular planting have at least one pod starting to develop, as illustrated below (Fig. 4). Most fields in North Carolina will have reached this stage by now. In most cases, a group M (multisite) fungicide such as Bravo (chlorothalonil) or Tilt Bravo (groups 3 and M) should be used for the first spray.



Fig. 4. Peanut plant ready for first fungicide spray. Image from Barbara Shew.



Fig. 5. Sclerotinia blight. Note the fluffy fungus and bleached stems. Image from Barbara Shew.

Our weather has been highly favorable for Sclerotinia blight in locations that have received rainfall recently. Sclerotinia outbreaks can develop in early July under these conditions, especially as canopies begin to close. We have seen that fungicide applications made at the first outbreak of Sclerotinia blight are the most effective in controlling disease. Careful scouting of fields with a history of Sclerotinia blight should begin now! Continue to scout and monitor Sclerotinia advisories as the season continues.

Early *Sclerotinia* infections are often found away from the crown. The fluffy white fungus (Fig. 5) is easiest to see early in the morning or after a rain. You must look inside the canopy to spot these infections. Infected stems develop a bleached appearance as the disease progresses.

Southern stem rot can sometimes be confused with *Sclerotinia* blight. Southern stem rot usually starts at the crown of the plant or on stems touching the ground near the crown (Fig. 6). Infected stems are the color of a brown paper bag. The white fungus growth is thick, stringy, or fan-shaped. Later, fungus structures about the size and color of mustard seed will develop.



Fig. 6. Signs and symptoms of southern stem rot. Image from Barbara Shew.

High temperatures and the recent rains could make this an active year for southern stem rot. Most fields should receive a fungicide for stem rot control at the second spray, or approximately two weeks from now. Fields at high risk for stem rot problems (those planted to a highly susceptible cultivar like Gregory, irrigated fields, fields or cultivars where heavy vine growth can be expected, and fields that have a history of stem rot and/or vegetable production) may benefit from an earlier soil fungicide application. Foliar fungicides effective against stem rot include Abound (group 11) and Provost (group 3). Artisan (groups 3 and 7), Convoy (group 7) and tebuconazole (group 3) are also effective but must be mixed with a foliar fungicide such as chlorothalonil or Headline (group 11). Growers who chose to start the season with a soil fungicide will need to adjust spray schedules or mix with a group M fungicide to avoid potential resistance problems. Remember that group 11 fungicides can only be applied twice in a 5-spray program. For rates and other details, see the *North Carolina Agricultural Chemicals Manual* at <http://ipm.ncsu.edu/agchem/agchem.html>.

The new cultivar Bailey has moderate leaf spot resistance and good resistance to southern stem rot. The first spray can be delayed two weeks (R3+2) on Bailey. The new cultivar Sugg also has resistance to these diseases. Fungicide programs have not been tested as extensively as on Bailey, but I believe that sprays can also be delayed on Sugg. Growers who chose to delay sprays on Sugg should be sure to scout carefully until we have more experience with this cultivar.

Leaf spot and Sclerotinia advisories are available daily during the summer. Contact Barbara Shew or your county Extension agent by e-mail if you would like to receive advisory e-mails. Advisories are also available on-line at <http://ncsupeanut.blogspot.com/>.

ORNAMENTALS AND TURF

From: Steve Frank, Extension Entomologist

Dogwood Twig Borer Oviposition

The last couple of weeks I have noticed flagging branch tips on the red twig dogwoods (*Cornus sericea* 'Baileyi') in front of my house. The damage was characterized by a cleanly girdled branch with a 1 cm oviposition scar just below. Gradually the tip goes from yellow to brown then falls off. Investigation and help from our excellent diagnostician revealed a large egg within each scar containing a round-headed borer larva. This was the dogwood twig borer. Adults have been active lately laying eggs in twigs. The larvae will overwinter within twigs then continue boring down the twig pith in spring killing the affected branch. This is not likely to be a big nursery pest but should be on the radar. It is much better to identify the flagging branches (Fig. 7) now and prune out the eggs than wait until spring when a whole branch or small tree will be affected.

If you follow me on Twitter, you know this already! Follow @OrnaPests on Twitter for timely updates on ornamental pest activity.



Fig. 7. Flagging tip of a red twig dogwood after oviposition and girdling by dogwood twig borer. Image by Steve Frank.

Western Flower Thrips in Greenhouses

Thrips are a constant problem for growers, not just a problem this week. Western flower thrips, *Frankliniella occidentalis*, is the most important and damaging thrips of greenhouses and has been called the most damaging greenhouse pest in the world. This is true of greenhouse-grown food and ornamental crops. Nearly all floriculture crops are susceptible to thrips damage.

Western flower thrips reproduce rapidly and are difficult to manage because they live in the cracks and crevices of flower heads and foliage. Thus, they are difficult to contact with insecticides. Western flower thrips also develop insecticide resistance rapidly so it is important to emphasize chemical rotation and to have a resistance management plan.

Sanitation is also very important in managing thrips. Because thrips can feed and reproduce on hundreds of plant species weeds in and around a greenhouse, they have a constant supply even if the crop is

sprayed. Western flower thrips pupate in soil, so cleaning up spilled potting soil and other debris can deny them a vital part of their lifecycle.

More information and chemical recommendations can be found in *Ornamentals and Turf Insect Information Note No. 72* at <http://www.ces.ncsu.edu/depts/ent/notes/O&T/flowers/ort072e/ort072e.htm>.

INSECT TRAP DATA

From: Dominic Reisig, Extension Entomologist

Light Trap Data from Tidewater Research Station (Washington County)

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*****
                        Number of Adult Insects
*****
Date          CEW    TBW    ECB    AW    SBL    BSB    GSB
*****
June 22             9     0     0     0     0     0     1
June 24             5     0     0     0     0     2     2
June 27             4     0     0     0     0    17     0
July 1              3     0     0     0     0    13     0
June 24             3     0     0     0     0     6     0
June 24             3     0     0     0     0     2     0
June 24             0     0     0     0     0     2     1
June 24             2     0     0     0     0     1     3
*****
    
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Abbreviations: CEW = corn earworms; TBW = tobacco budworms; ECB = European corn borers; AW = armyworms; SBL = soybean loopers; BSB = brown stink bugs; GSB = green stink bugs

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

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*****
                        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
*****
    
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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
*****

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

Cooperator: Willie Howell (Goldsboro)

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.