NC STATE UNIVERSITY COLLEGE OF AGRICULTURE & LIFE SCIENCES

North Carolina Pest News

Departments of Entomology and Plant Pathology

Volume 29, Number 6, May 16, 2014

CAUTION !

The information and recommendations in this newsletter are applicable to North Carolina and may not apply in other areas.

Dept. of Entomology, North Carolina State University, Box 7613, Raleigh, NC 27695

In This Week's Issue . . .

See current and archived issues of the *North Carolina Pest News* on the Internet at: http://ipm.ces.ncsu.edu/2014-north-carolina-pest-news-archive/

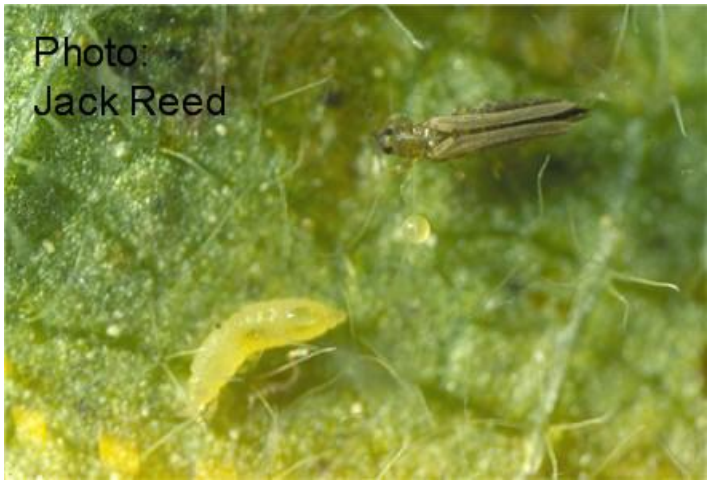
FIELD AND FORAGE CROPS

From: Dominic Reisig, Extension Entomologist

Cotton Thrips Update

As predicted in a previous *North Carolina Pest News* submission, colonization of our earliest planted cotton by thrips is light at this point. Thrips are in the system and colonizing, but we have yet to experience the heavy flights from third and fourth generation tobacco thrips. The thrips will show up. Dr. Ames Herbert has been monitoring volunteer peanuts in Suffolk, Virginia, which are loaded with tobacco thrips. This means that cotton planted now (mid-May) and on into June will probably be at risk for the heaviest thrips colonization events. You can protect your cotton by applying a foliar overspray of acephate at the first true leaf stage, even if you used an insecticidal seed treatment. Also, since resistance to insecticidal seed

treatments have been detected in the Midsouth (not in the Southeast), this will provide us a good way to delay resistance, since we are applying a different type of chemistry to the plant as a spray.



Adult and larval tobacco thrips. Image from Jack Reed.

With that in mind, we still need to protect our earliest planted cotton with a foliar overspray, as well. Plant growth has probably slowed with this stretch of dry weather and cooling conditions might hamper this some more. If Admire Pro was applied in-furrow with an insecticidal seed treatment, I would suggest scouting the cotton to see if larval thrips populations are developing. You should scout several places in the field and pull up at least 10 plants in these places, carefully inspecting the bottom leaves for adults and larvae. Sprays should not be based on adults, as these are the colonizers. Wait to spray until you notice two larval thrips per seedling. Hopefully, as has been shown in replicated studies, fields planted with an insecticidal seed treatment and Admire Pro in furrow will not require a foliar overspray. However, until we get a year or two under our belt, we won't know how effective this tactic is over a widespread area.

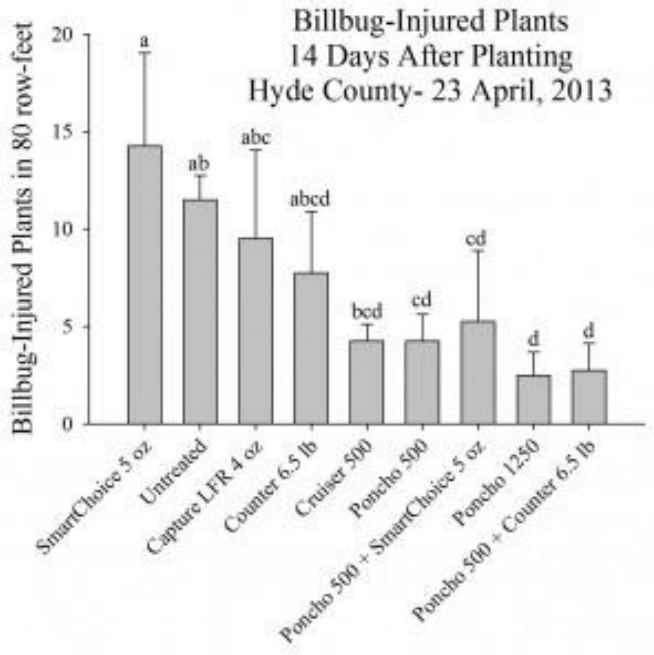
Corn Insect Pest Update

Most of our corn is finally in the ground and these warm conditions have given our seedlings a boost to outgrow some of the problems that we can sometimes see from the soil insect pest complex. Here are some thoughts based on calls and questions I've been receiving:

Seed treatment rates

Since commercial offerings are generally Poncho or Cruiser 500 and 1250, we should experience fewer issues from pests like wireworms, which are better controlled with the 500 rate compared to the 250 rate. Growers that contend with billbugs know that the 1250 rate is necessary. However, in situations requiring replanting going forward, I am recommending the 500 rate even in billbug areas. Our seedlings have good growth potential right now and billbugs are typically more of a problem when adults are emerging from overwintering (in April and early May). The risk decreases over time. If, for whatever reason, you've experienced injury from billbugs, there is not a whole lot you can do to rescue things. Foliar sprays are pretty ineffective. High rates of seed treatment, combined with cultural tactics (weed control, rotating away from corn or last year's adjacent corn and use of starter fertilizer), are the

best bet to manage billbugs. Finally, if you are risk averse and replanting, you can add in a granular insecticide, like Counter, in-furrow to provide billbug protection in addition to a 500 rate of seed treatment.



Graph from D. Reisig.

No-till corn

No-till corn is at greater risk for seedling pests and these fields should be scrutinized. This is because the soil is cooler (plants grow a bit slower compared to conventional till), there is often higher organic matter in the soil (providing food to sustain pests like wireworms and grubs), soil moisture is often higher compared to conventional till and the residue provides a place of refuge for insect pests. For the second year in a row, I've visited no-till fields where slugs harbor inside of furrows that did not close during the day. This is a nice, dark and cool place for a slug to be during the day. They then emerge during the night and can feed on the seedlings. No-till fields are also at greater risk for cutworms.

Stink bugs

I predict that stink bugs will be less of a problem in corn this year. Like last year, we have a good crop of winter weeds that will sustain stink bugs and cause problems in cotton and soybeans. However, a lot of our corn is on the later side. In the Eastern part of our State, brown stink bugs undergo a generation in wheat and then move into adjacent corn fields during the days following harvest. The extent of injury to the corn depends on when the wheat is harvested, what life stage the majority of stink bugs are in during wheat harvest (are there a lot of nymphs or adults?) and what stage the corn is in. For example, wheat planted in November generally produces more stink bugs that can move into corn compared to wheat planted in December. In general, the worst situation is where corn is pushing out an ear (just prior to tasseling) and adjacent wheat is harvested harboring a lot of adults. These adults can move into adjacent corn, especially on field edges and deform the ear. Nymphs can walk from harvested wheat into adjacent

corn fields, but will generally feed at the base of the plant and not up the stalk, where the ear is pushing out. Most of our corn will likely be too small to cause this problem.

Finally, stink bugs do not reproduce much in corn and use it as a "bridge" to go to other weeds and crops that are more attractive places to feed. Last year, we saw very few problems from stink bugs in corn and I'm hoping that this year will be similar.

From: Hannah Burrack, Extension Entomologist and Cameron McLamb, Student Working

Tobacco Insect Scouting Report – May 16, 2014

It is week three monitoring the Integrated Pest Management fields and the grower standard fields in our Eastern and Piedmont locations. Heavy rainfall left most fields in muddy conditions, but overall plant health has improved from the previous report, with little to no insect population increases and decreases in flea beetle counts. Here are the following reports for Eastern 1, 2, 3 and 4 and Piedmont 1 and 2 locations.

Plants seem to be much healthier than last week. Photo: Cameron McLamb.

Scouting Report, Eastern 1 – Grower Standard Field

Insect observation	No. aphid infested plants	Flea beetles/plant	Percent tobacco budworm infestation	Hornworms/plant	Percent cutworm damaged plants	Other insects
Treatment needed?	0 – No treatment	0 – No treatment	0 – No treatment	0 – No treatment	0 – No treatment	0 – No treatment

Scouting Report, Eastern 2 – IPM Field

Insect observation	No. aphid infested plants	Flea beetles/plant	Percent tobacco budworm infestation	Hornworms/plant	Percent cutworm damaged plants	Other insects
Treatment needed?	0 – No Treatment	0 – No treatment	0 – No treatment	0 – No treatment	0 – No Treatment	0 – No treatment

Scouting Report, Eastern 3 – Grower Standard Field

Insect observation	No. aphid infested plants	Flea beetles/plant	Percent tobacco budworm infestation	Hornworms/plant	Percent cutworm damaged plants	Other insects
Treatment needed?	0 – No treatment	0 – No treatment	0 – No treatment	0 – No treatment	0 – No treatment	0 – No treatment

Scouting Report, Eastern 4 – IPM Field

Insect observation	No. aphid infested plants	Flea beetles/plant	Percent tobacco budworm infestation	Hornworms/plant	Percent cutworm damaged plants	Other insects
Treatment needed?	0 – No Treatment	0 – No treatment	0 – No treatment	0 – No treatment	0 – No Treatment	0 – No treatment

Scouting Report, Piedmont 1 – Grower Standard Field

Insect observation	No. aphid infested plants	Flea beetles/plant	Percent tobacco budworm infestation	Hornworms/plant	Percent cutworm damaged plants	Other insects
Treatment needed?	0 – No treatment	0 – No treatment	0 – No treatment	0 – No treatment	0 – No treatment	0 – No treatment

Scouting Report, Piedmont 2 – IPM Field

Insect observation	No. aphid infested plants	Flea beetles/plant	Percent tobacco budworm infestation	Hornworms/plant	Percent cutworm damaged plants	Other insects
Treatment needed?	0 – No Treatment	0 – No treatment	0 – No treatment	0 – No treatment	0 – No Treatment	0 – No treatment

Notes: There were no flea beetles observed in this week's scouting report, possibly due to the heavy rainfall. Plants seemed to be much healthier than last week and there were insignificant signs of any damage to the plants from pest infestation.

More Information

Click here for last week's scouting report from May 9, 2014.

To read more about the IPM project, please refer to week one (here).

(Originally posted at: http://tobacco.ces.ncsu.edu/2014/05/tobacco-insect-scouting-report-may-16-2014/)

FRUIT AND VEGETABLES

From: Hannah Burrack, Extension Entomologist

Answering Questions about What Time to Treat Spotted Wing Drosophila

Blueberries and blackberries are getting close to ripening in North Carolina and I have fielded a few questions from growers about when (during the day) insecticide treatments for spotted wing drosophila (SWD) should be made. The most commonly asked question is typically "When are SWD in my field so I can treat them?"

Growers are starting to ask how best to time spotted wing drosophila management. Photo: Hannah Burrack.

We do not have a good answer to the question of when SWD spend most of their time in the fields. This is an active area of research in our lab and many others. When we walk through a typical field, we very rarely see flies present on plants, although infestation may be present. This suggests that our insecticide treatments may not be necessarily killing most of the flies they encounter "on the wing" or by directly contacting flies as they are applied. I suspect that it may be more likely that insecticides are killing flies while they interact with fruit to lay eggs.

My thought process when considering treatment timing during the day for the SWD is:

- We cannot say for sure at this time where SWD spend most of their time and during the day they are most likely to be present in fields.
- We do not know how many flies it takes to cause a significant infestation, so we do not know how many we need to kill.
- We do know that when they come into our fields, the females are attracted to and interested in laying eggs in fruit.

- Therefore, the best known opportunity to impact flies is when they land on fruit, whatever time that might be.

This means that I encourage growers to think about protecting fruit, rather than thinking about killing flies at the time of treatment. This thinking suggestion that growers should treat when it is safest for bees and other beneficial insects, but focus on achieving and maintaining good coverage of fruit. Evening or night treatments generally have the least potential impact on pollinators and other beneficial insects because they are not active at these times and there is as long as period as possible materials to dry before bees become active the next day. The goal of SWD treatments should be to make sure that the fruit has insecticide sufficient to kill flies when they land on it.

For large plants, treating every row is likely necessary to achieve good coverage. When in doubt, growers should check coverage with water sensitive spray cards. They may be surprised that alternate row spray, even in dormant plants, may not result in acceptable coverage, as researchers in Georgia discovered last year in a research planting of rabbiteye blueberries. A similar, more detailed study from Michigan conducted in the late 1990s addressed questions of coverage with ground sprayers in highbush blueberries and found that coverage could also be poor after the plant had full canopies mid season.

As we learn more about SWD biology, our management recommendations are likely to change, but for now, I think evening or night treatments are an appropriate choice.

More information

Alternate-Row-Middle (ARM) Spraying for Rabbiteye Blueberry Green-tip and Bloom Sprays – UGA Blueberry Blog

Canopy development and spray deposition in highbush blueberry – HortTechnology

(Originally posted at: http://entomology.ces.ncsu.edu/2014/05/answering-questions-about-what-time-to-treat-spotted-wing-drosophila/)

ORNAMENTALS AND TURF

From: Steve Frank, Extension Entomologist

Keep Alert for a New Crape Myrtle Pest

One of the newest pests to plague urban trees is the crape myrtle bark scale, *Eriococcus lagerstroemia*. It is not yet in North Carolina, but it is probably coming soon. The first detection of crape myrtle bark scale in the U.S. was just outside Dallas, Texas, in 2004. Since then, it has spread throughout much of Texas. It has also spread to Arkansas, Louisiana, Oklahoma and Tennessee. Last week it was also found in Georgia.

Crape myrtle bark scale is similar to azalea bark scale and oak eriococcid scale that is common on willow oaks in Raleigh. Female scales produce fluffy white filaments that cover their bodies. In spring, they produce eggs beneath their body then die. Tiny crawlers hatch from the eggs and spread around the

plant. Scale crawlers can also be spread by the wind. The crawlers settle in their new spot and begin producing white filaments as they grow. They have at least 2 overlapping generations in Arkansas and probably more in warmer areas.

At low density, crape myrtle bark scale feeds in rough areas around branch collars, but as the population increases, all the bark may be covered. These scales are most often noticed because trees become covered in black sooty mold. At first, many people assume this is from crape myrtle aphids so the scales may go undetected. If you notice unusually heavy honeydew and sooty mold on crape myrtles, take a closer look at the bark.

Since this is such a new pest in the U.S., we do not have a good idea how to manage it. Drench applications of neonicotinoids have provided some control in Texas. However, since crape myrtles flower continually and attract a slew of pollinators, this may not be the best option. Insect growth regulators such as pyriproxyfen and buprofezin are effective for many other scales and may be a good option. Horticultural oil, especially the heavier dormant rate, can reduce scale abundance also.

White crape myrtle bark scales on a crape myrtle trunk blackened with sooty mold. Photo: S. D. Frank.

Lecanium Scale Crawlers!

Oak and European fruit lecanium scale are one of the largest soft scales in our area. Scale ovisacs are brown and rounded reaching 6 mm in diameter. This is the most noticeable stage and is present right

now. As members of the soft scale family Coccidae, lecanium scales produce honeydew that can cause sooty mold on oaks or plants below. Oak lecanium scale primarily infests oaks trees. However, European fruit lecanium can infest many tree species including oaks. They are impossible to tell apart without a microscope and even then it is hard. Large populations can reduce growth and vitality especially in newly planted trees.

Eggs are present now under adult scale covers and crawlers are beginning to hatch. The crawler stage should be targeted for best efficacy. On trees small enough to treat foliage, horticultural oil can be used. On larger trees, a systemic such as dinotefuran can be applied as a drench or trunk injection. This scale is not easily eradicated and optimal control measures are still unclear. It is attacked by many parasitoids and predators that can reduce scale abundance if protected from insecticides. A short video by graduate student Emily Meineke describes the scale biology. She is conducting research to understand why lecanium scale outbreaks on urban trees.

Lecanium scale ovisac on willow oak. Photo: S. D. Frank.

From: Adam G. Dale, Graduate Student and Steve Frank, Department of Entomology

Bagworms Active in Raleigh

Bagworms have been hatching for the last week or so. You can find the tiny caterpillars with tiny upright bags anywhere there are bags left from last year. The bagworm, *Thyridopteryx ephemeraeformis*, is a very common ornamental pest throughout the eastern United States. These pests overwinter as eggs within the mother's bag. Larvae emerge from the bag during the months of May and June. Once they have emerged, they crawl or drift via a silk strand to nearby foliage where they begin to establish feed. Bagworms are relatively sedentary during their lifetime, most often remaining on the same tree until they pupate. Adult females are wingless and never leave the tree, while male bagworms pupate and develop into a small brown moth.

Bagworms feed on plant foliage and can cause a significant amount of damage in a relatively short period of time. Some common trees that they infest include: maple, sycamore, oak, poplar and apple while they mostly prefer conifers. The early instar caterpillars produce a silk bag on their posterior end

that gradually collects plant tissue debris from them feeding. This creates a leafy bag that camouflages them as plant tissue. Since they don't move much during their lifetime, they are commonly found in dense populations within the same tree. These dense populations have the potential to kill conifers within one to two seasons due to defoliation and are found more often on ornamental trees rather than in forests. Since they are so discrete and easily mistaken for plant tissue, pest management for these insects can be difficult and/or time consuming. One of the most effective, yet time consuming methods of treatment, are handpicking or cutting the female pupae bags from of the branches. Since this may sometimes be impractical or impossible, there are other methods of treatment to be considered. There are chemical control options available that should be applied during the early instar stages of the caterpillars, typically during June and early July. As with many other pest insects, bagworms are susceptible to predation from parasitoids and birds which can also assist in their control. Now that there has been evidence of these early instar bagworms, it may be time to take action against them.

Bagworms. Photo: Adam G. Dale.