

# North Carolina Pest News

Departments of Entomology and Plant Pathology



Volume 28, Number 3,  
April 26, 2013

## CAUTION !

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

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## FIELD AND FORAGE CROPS

From: Jack Bachelier, Extension Entomologist

### Cotton Insect Season Begins (well, almost)

Throughout the growing season we will try to keep producers, consultants and agents up to date on the "insect conditions" in North Carolina and how to manage situations before and as they arise.

With cotton planting now under way, thrips management decisions will soon follow. As I have said many times in the past, mid-April to approximately May 10 planted cotton will likely be most at risk for thrips damage, primarily due to typically slower seedling grow-off conditions.

A few observations come to mind:

1. Seed treatment residual begins to decline as soon as seed is planted. No more than 2½ to 3 weeks activity can be expected.

2. Optimum cotton seed treatment uptake matches optimum cotton seedling growth: moist soils and warm temperatures.
3. Foliar application timing for thrips is most effective when cotton is between the expanded cotyledon to first true leaf stage.



First true leaf cotton. Image by D. Mott.

4. Seedlings with “herbicide burn” stress are more subject to thrips damage (another stress). That does not mean, however, that herbicide-burned seedlings have thrips.
5. Tank mixes to control both weeds and thrips can reduce application costs. However, a tank mix prioritized for weed control applied after the first or early second true leaf stage may expose the seedlings to significant thrips damage. In this case, we recommend separate trips over the field.
6. Producers and scouts should concentrate their attention to live yellow immature thrips in terminals. Older damage can be misleading.
7. Once cotton reaches the 5 true leaf stage, even if the seedlings are badly damaged from thrips, additional control is not needed.

Because we don’t expect anything exciting on the cotton insect front for at least the next few weeks, these updates will be on the short side until then. Between now and then, remember that by “Googling” our *Cotton Insect Corner* website ([https://maps.google.com/maps?oe=UTF-8&ie=UTF-8&q=radio+shack&fb=1&gl=us&hq=radio+shack&hnear=0x89ac5a2f9f51e0f7:0x6790b6528a11f0ad,Raleigh,+NC&ei=KaaZT5XFOZGw8ATio83gBQ&oi=local\\_group&ved=0CB0QtgM](https://maps.google.com/maps?oe=UTF-8&ie=UTF-8&q=radio+shack&fb=1&gl=us&hq=radio+shack&hnear=0x89ac5a2f9f51e0f7:0x6790b6528a11f0ad,Raleigh,+NC&ei=KaaZT5XFOZGw8ATio83gBQ&oi=local_group&ved=0CB0QtgM)), you can access various kinds of cotton insect information, including images of pests and their damage, insecticide performance comparisons, insect scouting and management guidelines, all of our project’s applied research dating back to 1999 and other tips and advice for managing whatever unfolds in 2013.

Also check out the *North Carolina Crops* blog (<http://www.nccrops.com/>) for updates about field crops (including tobacco) and *Small Fruit & Specialty Crop IPM* blog (<http://ncsmallfruitsipm.blogspot.com/>). We’ll try to provide weekly updates at this site, even when things are slow on the cotton insect front.

From: Dominic Reisig, Extension Entomologist

### Soybean Insect Pest Planting Considerations

There are many management efforts you can take before your soybean seed goes into the ground. Some of these actions are simply insurance and some of them, like your choice of row-spacing and planting date, are the best insect management decision choice you'll make all year. Unlike corn, which has many yield-robbing seedling pests (*i.e.*, sugarcane beetle, billbugs, grubs, etc.) and the ever-present threat of thrips in cotton, we have very few seedling pests to contend with for soybeans. Also unlike corn and cotton, seed treatments are not economical in North Carolina soybeans. In fact, seed treatments and foliar over sprays have been tested in both Virginia and North Carolina for over 10 years. Across nearly 20 trial/locations, there was **not a single yield loss recorded due to seedling pests**. These trials were designed with the intent of creating a problem with insects. In one case, thrips numbers were as high as **91 per seedling**, a situation that would have killed a cotton plant. There were no yield differences in this trial. The odds are that very few fields, in our state will benefit by increasing yield from an insecticidal soybean seed treatment. And just as an aside, neonicotinoid seed treatments will not kill kudzu bugs. Read on to learn more about the soybean seedling pest complex.

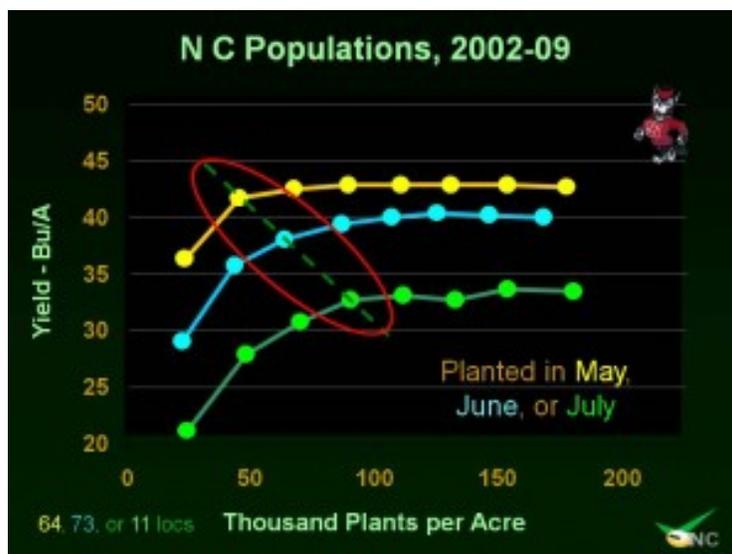


Image from Dr. Jim Dunphy, NCSU Extension Agronomist.

In Virginia and North Carolina, both **thrips and bean leaf beetle are a non-issue** in terms of soybean yield when they infest seedlings. Do not scout or treat (or use seed treatments) for either of these pests.

**Grasshoppers, katydids, and cutworms** tend to be a problem on fields with lots of residue (think no-till) and fields that have not been properly rotated. They are also more of a problem on field edges. These should be controlled with a pyrethroid if they begin to reduce stand levels to densities below those recommended by North Carolina Cooperative Extension (see adjacent graph).

**Slugs**, which are also more of a problem in no-till fields, are more difficult to control, as insecticides are ineffective. They are more of a problem when conditions are cool and wet which tend to be early on in the season. Slugs are difficult to sample, not only because of their small size, but because they are active in low light conditions, like cloudy days and at night. One thing that you can do is to move the residue

around to find the slugs and to look for the slime of their trails where they have moved. The dried slime will shine in the sun.

The best management action to reduce slugs is to till. If you're producing under no-till, slugs are probably not going to change your tillage practices. Basically the more trash you can clean away from the seedlings, the fewer problems you will have. Consider strip till. Less drastic steps are focusing on good residue removal with the row sweepers and using starter fertilizer.

The only known remedial measure for slugs, besides waiting for warmer and dryer weather, is to use Deadline M-Ps (AMVAC), Orcal Slug Bait and Snail Bait (Orcal). These must be put out with a spreader and are relatively expensive. Furthermore, although this product will likely be labeled for 2013, supplies are short due to reregistration. If you might use one of these products this year, you'll want to pick up what you can now.

**Three-cornered alfalfa hoppers** feed on seedling and are generally discovered after the fact, when plants lodge later in the season. Seed treatments and foliar pyrethroid sprays can effectively manage these insects. The problem is that it takes EXTREMELY high densities to impact yield. So your money is wasted 99.9% of the time targeting a seed treatment for these critters. See this previous blog post for more information (<http://www.nccrops.com/2012/07/06/lodged-soybeans-threecornered-alfalfa-hopper-may-be-the-culprit/>) and this website for the threshold (<http://www.ces.ncsu.edu/plymouth/ent/3corneredalfalhopperthreshold.html>). In short, if you've had a problem with these in the past, do not waste your money with a seed treatment. Scout your beans and treat if you need to.

Finally, **lesser cornstalk borer** can give us problems, especially in late-planted soybeans, on droughty soils, and/or during hot and dry periods. Unfortunately we do not know of any remedial control measure (including pesticides) that is effective for this insect. This previous blog post contains information concerning varieties that are more or less resistant to this insect (<http://www.nccrops.com/2011/07/11/lesser-cornstalk-borer/>).

From: Hannah Burrack, Extension Entomologist

### **Aphids in Tobacco Greenhouses**

It has been a relative quiet spring for insect questions in tobacco, but last week I received several calls asking about aphid management in tobacco greenhouses. Aphids are an occasional pest in tobacco greenhouses, and the last time I had enough questions about them to warrant a blog post (<http://ncsmallfruitsipm.blogspot.com/2011/04/tobacco-greenhouse-pests-aphids.html>) was in 2011. In 2012, more unusual tobacco greenhouse insect concerns (<http://www.nccrops.com/2012/04/26/unusual-greenhouse-tobacco-pests-appearing/>) were on folks minds.

The first question I always ask agents and growers if they call about aphids in on tobacco plants in the greenhouse is: **How far away are you from transplant?** For conventional growers, is the most important consideration.

### **Within 5 days of transplant**

If a grower is within 5 days of transplant and plans to use imidacloprid (Admire Pro and generics) or thiamethoxam (Platinum) as a greenhouse tray drench, these treatments should be applied as normal. Either material will control aphids pre-transplant at recommended rates (see [here](#) for rate information), and no additional treatment will be needed before transplant.

### **More than 5 days before transplant**

If it is greater than 5 days before transplant, acephate (Orthene and generics) is the only material recommended for greenhouse use in tobacco. Imidacloprid or thiamethoxam should not be applied more than 5 days before transplant. If using acephate, growers should consider spot treated only affected trays rather than spraying the entire greenhouse if infestations are not widespread.

For organic growers, options for aphid control are limited both in and out of the greenhouse. Pyrethrins (Pyganic) has some activity and likely the best option in this scenario.

### **More information**

Early season plant stunting issues in tobacco (*North Carolina Crops*):

<http://www.nccrops.com/2012/05/25/early-season-plant-stunting-issues-in-tobacco/>

Tobacco greenhouse pests: Aphids (*NC Small Fruit & Specialty Crop IPM*):

<http://ncsmallfruitsipm.blogspot.com/2011/04/tobacco-greenhouse-pests-aphids.html>

## **ORNAMENTALS AND TURF**

From: Steve Frank, Extension Entomologist

### **Ambrosia Beetles Still Active**

Just a quick update in case you are not trapping ambrosia beetles. We are still finding a lot of beetles in traps. This week we had 132 attacks on one tree in our experimental nursery. Management of ambrosia beetle (<http://www.ces.ncsu.edu/depts/ent/notes/O&T/trees/note111/note111.html>) damage requires pyrethroid applications every 3 weeks to the trunks of trees. Ambrosia beetles usually attack below the first scaffold branches so you do not need to spray the canopy. Most folks apply permethrin with an airblast sprayer. We have tested a manual sprayer and found more complete, even coverage. You can read about it in a recent paper (<http://ecoipm.files.wordpress.com/2012/02/franksadof2011reprint.pdf>). The manual sprayer has two opposing nozzles to quickly cover tree trunk with insecticide. It takes a little longer but uses less insecticide and reduces drift and secondary mite outbreaks.

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**Dual-nozzle sprayer we made to spray trees for ambrosia beetles. Photo: S. D. Frank.**

### **It's Still Aphid Season . . .**

Last week I reported on rose aphids covering the buds of a rose vine in my neighborhood. This week I poked around campus and found several more aphid species. The first site was spirea aphids. These aphids were covering the new tips of spirea plants at a park in Cary, North Carolina. The result is distorted foliage if they feed on the growing tips too long.



**Spirea aphids on the tip of a spirea plant. Photo: S. D. Frank.**

Last week I found some crape myrtle aphid eggs on a tree that still had leaf buds but no leaves. They were shiny black and tucked beneath slivers of papery bark. This week when I went back to find them I only found shriveled black shells. Several days later I found the first crape myrtle aphids of the year. This coincided with the first full grown leaves. Crape myrtle aphids are specialists and only feed on crape myrtle. They occasionally become abundant but are usually subdued by natural enemies.

Finally I found tulip poplar aphids starting to build up on tulip poplar leaves. I watch these every year. For a couple weeks the aphid density increases then you start to see parasitoid mummies and lady bug eggs. For the rest of the summer they stay under control.



**Lady beetle eggs positioned next to a family of tulip poplar aphids. Photo: S. D. Frank.**

Aphids often become abundant this time of year because they are slightly ahead of their predators and parasitoids. However, soon the natural enemies catch up and keep the aphid populations in check. In many cases having some aphids on the plants around your house is good because it attracts predators and parasitoids that will feed on other more damaging pests.

### **Protecting Pollinators**

This time of year many folks are applying systemic neonicotinoid insecticides to their plants and grass. Research has found that these insecticides move into plant nectar and pollen. Through this route they can negatively affect pollinators and especially bees. I reposted a blog post about protecting pollinators from last year (<http://ecoipm.com>). This provides more detail and links to a review by the Xerces Society about the effect of neonics on pollinators.

## Boxwood Leaf Miners Emerging

Last week I saw a lone boxwood leaf miner adult hovering around a bush on campus. This week I went to look for more. I didn't find adults the day I went out but did find pupal casings sticking out of leaves. This indicates adults recently emerged. The maggots pupate in the leaf blister. As the adult emerges the pupal case get caught on the leaf. This holds the leaf in place so the adult can wriggle out. Boxwoods can be treated with a pyrethroid to prevent flies from landing on the bush to lay eggs but watch out for mite outbreaks. Imidacloprid will kill maggots within the leaves but (based on article above) it is best to apply after flowering.



**Pupae of boxwood leaf miners sticking out of leaves after adults emerge. Photo: S. D. Frank.**

*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.*