NC STATE UNIVERSITY COLLEGE OF AGRICULTURE & LIFE SCIENCES

# North Carolina Pest News

Departments of Entomology and Plant Pathology

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## 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/

## FRUIT AND VEGETABLES

From: Hannah Burrack, Extension Entomologist

### What to Watch for: How Should North Carolina Strawberry Growers Plan for Spotted Wing Drosophila?

A few growers are starting to harvest strawberries in North Carolina, and as fruit ripen, now is the time to prepare for spotted wing drosophila management. Our recommendations for strawberries in 2014 are very similar to those we provided in 2013 with one important change.

Our recommendations for this year are:

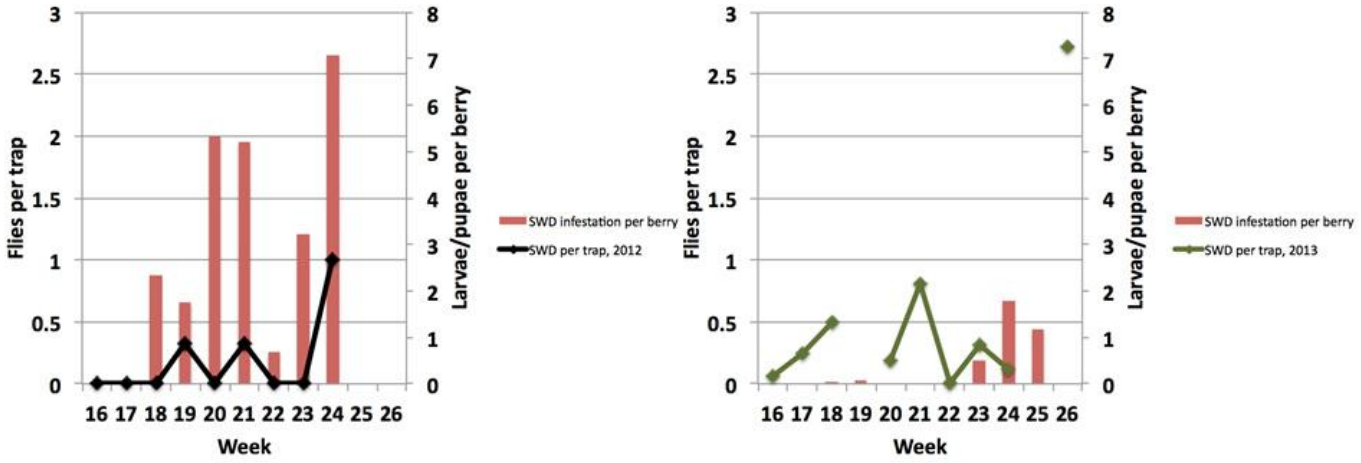
1. **Strawberry growers should strongly consider monitoring for spotted wing drosophila**. We recommend using yeast and sugar water baits

(details here). We also discussed trapping methods and how many traps a grower should use in this post.

It's important to note that this trapping recommendation is only for strawberry growers. For blueberry, blackberry, and raspberry growers, traps have not appeared as useful for timing treatments in North Carolina and preventative treatments timed to fruit ripening are likely justified.

2. **Growers should be prepared to identify spotted wing drosophila adults and larvae**. Not all little brown flies are spotted wing drosophila! See here for information on adult identification and here for information on larval identification.

3. **Growers should consider when to treat.** Last year, using the yeast and sugar water baited traps, we captured flies in our research plots before we observed infestation, but in 2012, using apple cider vinegar baited traps, fruit infestation developed before adult flies were caught. If treatment timing is initiated based on trap captures, be sure to use an attractive bait, not apple cider vinegar!




**Data from untreated control plots at the Central Crops Research Station, Clayton, NC. Spotted wing drosophila captures in 2012 (black line, left) and 2013 (green line, right) and fruit infestation (red bars). In 2012, traps were baited with apple cider vinegar and captured flies only after infestation was present. In 2013, traps were baited with yeast and sugar water and captured flies before infestation developed. Figures: Hannah Burrack.**

4. **If growers find infested fruit, they should take immediate action to remove it and prevent future damage.** We have shared lots of information as to what growers should do if they find an infestation. Insecticides recommended for use against SWD are listed in the North Carolina Agricultural Chemicals Manual (for materials recommended for use in North Carolina) and the Southern Region Small Fruit Consortium Strawberry IPM Guide (for regional recommendations).

***More information***

Spotted wing drosophila monitoring recommendations for 2013 – NC Small Fruit & Specialty Crop IPM

More on spotted wing drosophila: How many traps should growers use? – Strawberry Growers Information Portal

Spotted wing drosophila biology – Spotted Wing Drosophila Portal

Identifying larvae that may be present in strawberry fruit – Strawberry Growers Information Portal

What should growers do if they find SWD infestations? – Strawberry Growers Information Portal

(Originally posted at: http://entomology.ces.ncsu.edu/2014/04/what-to-watch-for-how-should-north-carolina-strawberry-growers-plan-for-spotted-wing-drosophila/)

**Export-friendly Alternatives for Blueberry Fruitworm Treatments**

As blueberry bloom nears its end in most of North Carolina, growers are starting to consider management of petal fall pests. Chief among these are cherry and cranberry fruitworms. Both these caterpillars hatch from eggs laid on the surface of blueberry fruit and then feed inside berries. Petal fall insecticide treatments are the primary means of management for these two pests and timing is crucial for these applications because caterpillars are no longer vulnerable to control once they tunnel into fruit.

Regional recommendations for fruitworm control materials are available in the Southern Region Small Fruit Consortium Blueberry IPM Guide, and North Carolina specific recommendations are available in the North Carolina Agricultural Chemicals Manual. Two questions have been raised recently about fruitworm control materials:

> First, many of the recommended materials for fruitworms are also recommended for use against spotted wing drosophila (SWD). Because SWD is a much more significant pest than fruitworms, I strongly recommend that growers reserve effective SWD materials to treat that pest and do not use them against fruitworms.
>
> Second, residues of some of the recommended materials commonly used for fruitworms are not acceptable for export to Canada or other potential trading partners. It is hard to say if pesticide residues will be present at harvest from materials applied right after bloom, but some growers and marketers are cautious about these materials.

Two active ingredients not currently recommended for SWD and are acceptable for use in Canada are acetamiprid (Assail) and novaluron (Rimon). These may be reasonable choices for growers seeking fruitworm materials without concerns for Canadian export.

The USDA Foreign Agricultural Service's MRLDatabase (maximum residue level database) is the go-to resource for determining what pesticides are acceptable at what levels for international export markets. This tool is useful for answering the question of "What insecticides are acceptable where?"

Regardless of what material is used, it is important that any pesticide (including insecticides, fungicides, or herbicides) used around this time year be applied in a way to minimize bee exposure. This includes applying materials only to plants which no longer have blooms and applying in the evening when bees have ceased foraging. In fact, all pesticide labels will soon include pollinator protection information.

***More information***

Petal fall blueberry pests – Entomology Portal

Cherry fruitworm in blueberries – Entomology Portal

Cranberry fruitworm in blueberries – Entomology Portal

What insecticides are acceptable where? – Entomology Portal

Blueberry IPM Guide – Southern Region Small Fruit Consortium

North Carolina Agricultural Chemicals Manual

MRLDatabase – USDA FAS

The new EPA bee advisory box – EPA Pollinator Protection

(Originally posted at: http://entomology.ces.ncsu.edu/2014/04/export-friendly-fruitworm-treatments/)

## ORNAMENTALS AND TURF

From: Steve Frank, Extension Entomologist

### Rose Sawflies

I found these sawflies on knockout roses this week in Georgia. I also found some on my roses in Raleigh that were slightly smaller. They are probably the curled rose sawfly, *Allantus cinctus*, but I am waiting on a positive identification. In any case you can look for damage to leaves by these and other sawflies. Small larvae typically skeletonize the leaves. Larger larvae consume entire leaves. Scout for this damage and also for feces which are a sure sign of something feeding on your plants. If infestations are large a contact insecticides such as a pyrethroid or acephate can be applied. Conserve is also labeled for sawflies. Small infestations in home landscapes could be managed with horticultural oil or insecticidal soap.

**Tiny rose sawfly larva on knockout rose leaf. Photo: S. D. Frank.**

## Azalea Lace Bugs

Azalea lace bugs (*Stephanitis pyrioides*) are one of the most damaging pests of evergreen azaleas. They overwinter as eggs in azalea leaves and begin hatching in Spring. This is actually late compared to some other years, but I found the very first ones yesterday. I found them near HVAC units that blow hot air behind our administration building. This is my monitoring spot for azalea lace bugs because they always hatch here first. In addition the high temperature always leads to greater abundance and damage, too. This is a great example of how high temperature increases advances pest phenology and increases development rate leading to more generations per year.

**Azaleas planted next to HVAC equipment that blow hot air. The azaleas always get lace bugs first and worst. Photo: S. D. Frank.**

Control is best targeted early in the season when nymphs are present for two reasons. First, nymphs are easier to kill than adults and if you kill nymphs before they mature and lay eggs you have a better chance of clearing up the infestation. Second, the longer azalea lace bugs are on your plant the more damage they do. On evergreen azaleas this damage sticks around for a long time so plants may be permanently damaged. So scout your azaleas and get those lace bugs cleared up before damage occurs.

**Photo: S. D. Frank.**

### Juniper Scale Crawlers are Active

Juniper scale, *Carulaspis juniper*, attacks some of the most commonly used plants in ornamental landscapes including all *Juniper* species, but also cypress species and false cypress. There is one generation per year in which females fill up their armored cover with eggs in spring from which crawlers hatch and look for new feeding sites. Infestations can lead to foliage that becomes yellow or brown and generally less lustrous than normal. Large infestations can cause the tips of branches to die and the plant to become sparsely foliated. Isolated infestations can be pruned off of plants. Natural enemies will often keep scale below damaging thresholds. However, in environments where natural enemies are not abundant control may be necessary. Horticultural oil will smother crawlers. Other chemicals such as dinotefuran (Safari), acetamiprid (TriStar), and pyroproxifen (Distance) and others can be used to manage infestations. More information on armored scale management can be found at: http://www.ces.ncsu.edu/depts/ent/notes/O&T/shrubs/note157/note157.html.

**Heavy infestation of juniper scale on Leyland cypress. Adult females are white and round with a yellow center and resemble a fried egg. Photo: S. D. Frank.**

## RESIDENCES, STRUCTURES AND COMMUNITIES

From: Mike Waldvogel, Extension Entomologist

### The Clock is "Ticking"

Warmer temperatures bring about more outdoor activities whether it is in the yard or hiking trails or somewhere else that bring us into contact with nature. Warm temperatures also mean increased tick activity in these same areas. Tick populations start to increase significantly as we get into May, June and July. Probably few arthropod pests cause as much concern to the public as ticks (mosquitoes are right up there, of course). When most people think of ticks, they immediately focus on tick-borne diseases such

as Lyme Disease which is more prevalent in the northern states, but certainly is on the rise in North Carolina and can have severely debilitating effects if it is not diagnosed promptly. However, this recent incident is a sad reminder about the prevalence of Rocky Mountain Spotted Fever (RMSF) in North Carolina. In 2012, we had 584 cases of the RMSF with the peak occurring in June and July. The American dog tick is the primary vector (transmitter) of RMSF. The blacklegged tick is the primary vector of Lyme Disease in North Carolina.

Many people may be inclined to try outdoor chemical treatments and that is certainly their option (if the weather cooperates). They need to bear in mind that tick management requires a thorough (**not** excessive) application of the chemical. Unlike mosquitoes where the goal is to treat foliage where the mosquitoes are resting, ticks are often down on the soil itself and so a thorough coverage of the soil is needed to try to impact tick populations. With that in mind, your best options are going to be a garden hose sprayer attachment or a granular insecticide. Both need to be done when the grass is not excessively wet (the granules can get caught in the wet grass and not reach the soil surface where they are needed). Point #2 to keep in mind – you may "control" the tick population in the treated areas of your yard, but this does nothing to address the ticks in the weedy overgrown areas that remain untreated and may be home to rabbits, feral cats (not likely both at the same time), etc.

This is a good time to reiterate the good practices for protecting yourself (and your family) from ticks and **all** of the tick-related diseases.

- Go take a hike – but if you do, stick the open paths. If you feel the need to be adventuresome and head into the surrounding brush, you may subsequently feel some adventuresome ticks on you as well.

- Whether you are outdoors for work or recreation, keeping ticks off of you is important. One way is to wear light-colored clothing to make it easier to spot ticks making the ascent up your leg and preferably wear long pants and tuck the pant legs into your socks. The answer to the next question is simple – "Yes . . . people seeing you in your yard or on a hiking trail will think you look like a dork", but they may think that even if you don't have your pants legs tucked into your socks. Whether you wear shorts or long pants, apply a repellent to your socks and pants or in the case of shorts, only to **exposed** parts of your skin (**not** to skin covered by clothing).

- Check yourself and the rest of your family children over carefully after working or playing outdoors. That includes checking outdoor pets even if you do routinely use some flea and tick product on your pet.

- If you do find a tick that's feeding on you, remove it carefully with a pair of tweezers. If possible, keep the tick for identification (suggest that they keep it in a small jar filled with rubbing alcohol.

- Just because you find a tick on you, doesn't mean it's been feeding, particularly if it's still wandering around. Ticks attach their heads to your skin with a type of "cement" and then the feast begins.

- Also, just because the tick is identified as American dog tick or the blacklegged tick does not mean that is actually infected with Rocky Mountain Spotted Fever or Lyme Disease. People may rush to their doctor to get a blood test done. However, at this early stage a blood test isn't helpful because the tests rely on detecting antibodies that develop in response to the pathogen and it can take several

weeks for the antibody levels to reach detectable numbers. Also, some healthy people who have been exposed to RMSF may already have detectable levels. For that reason, blood tests are usually done twice a few weeks apart to look for a significant rise in antibody levels (indicating a likely infection rather than just a previous exposure).

Remind people that 20% or more of the people infected with the Lyme Disease pathogen do not develop the classic "bull's eye" rash that they just saw after doing a Google search. The CDC also reports that 10% of people infected with Rocky Mountain Spotted Fever do not develop the characteristic rash that we read about (and of course, rashes on children or adults can have many other non-disease causes). The best approach is to circle the date of the "tick encounter" on the calendar and if you develop flu-like symptoms, severe headaches or joint pain within the next 3 to 14 days, contact your physician immediately and mention the tick incident. Most doctors will take the cautious route and prescribe antibiotics which when taken early on usually take care of the problem.