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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.

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In This Week's Issue . . .

See current and archived issues of the *North Carolina Pest News* on the Internet at: http://ipm.ncsu.edu/current_ipm/pest_news.html

ANNOUNCEMENTS AND GENERAL INFORMATION

North Carolina Flue-Cured and Burley Tobacco Tour

North Carolina Tobacco Tour is on July 15, 16 and 17, 2013 including stops at Cunningham, Upper Coastal Plain and Oxford Research Stations. For more information, contact Mina Mila at (919-513-1291) or Jane Long at (919-513-1343) or see program and registration information at: http://plantpath.cals.ncsu.edu/north-carolina-flue-cured-burley-tobacco-tour

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FIELD AND FORAGE CROPS

From: Jack Bacheler, Extension Entomologist

Big Bug Year on Cotton?

As is often the case in North Carolina, so far we still have generally high square retention rates in the western part of our cotton production area, but several cotton fields treated for plant bugs in the eastern part of our production region. Especially with our copious amount of rainfall over most of our state during the past two to three weeks, in the event of square retention rates of less than 80%, growers are advised to back up these counts with sweep net confirmations that plant bugs are the reason for square loss. I checked a number of cotton fields between Snow Hill and Wilson July 3. Even though all of these fields had experienced recent excessive water all of the upper square retentions were in the range of 94 to 100%. Because we have an enormous amount of plant bug host vegetation surrounding cotton fields this year, if we get a string of sunny weather and rapid drying down conditions in the coming week or two, we could see a significant movement of plant bugs into cotton fields. Also plant bugs are more readily attracted to lush cotton fields - and we've got plenty of that. In the pre-bloom period, a standard 15-inch diameter net will suffice for detecting plant bugs. Once blooming is underway and more plant bug nymphs are present, we'll be advising growers and scouts to switch to a 5-foot black beat cloth. We'll discuss this approach next week.

Stink Bugs

As a general rule, we tend to see fewer stink bugs and experience lower damage to cotton bolls during dry years. So our weather up to this point appears to favor stink bug development on field corn and weed hosts. Remember that we seldom see economic stink bug damage to developing bolls in North Carolina until about the second week of bloom, so we'll have more about stink bug management in the coming weeks.

Other Insects

Like last week, we are still getting some calls about spider mites in many cotton fields. Fortunately, also like last week, no fields treated for spider mites have been brought to our attention.

Cotton and Soybean Scouting Schools

Dominic Reisig and I are scheduling annual soybean/cotton scouting "schools". Each school will cover both cotton and soybean insect ID, biology, crop damage, scouting procedures and the use of correct thresholds. There will be both an indoor and a field component of these schools. The present line-up is:

July 12: Onslow County area. Onslow County Extension Center, 4014 Richlands. 9:30 to noon. Contact Melissa Huffman (melissa_huffman@ncsu.edu or 910-455-5873) for details.

July 16: Greene County area. Ruritan Center, 3659 Highway 903, Maury, NC. 9:30 to 11:30 a.m. Contact Roy Thagard, Jr. (roy_thagard@ncsu.edu or 252-747-5831) for details.

July 18: Bertie County area. Windsor Community Center, 201 S. Queen Street, Windsor, NC. 9:30 to 11:30 a.m. Contact Richard Rhodes (richard_rhodes@ncsu.edu or 919-794-5317) for details.

July 19: Northampton County. Extension Center, 9495 NC Highway 305, Jackson, NC. 9:30 to 11:30 a.m. Contact Craig Ellison (craig_ellison@ncsu.edu or 252-534-2831) for details.

July 19: Halifax County. Halifax Extension Center, 359 Ferrell Lane, Halifax, NC. 1:30 to 3:30 p.m. Contact Arthur Whitehead (arthur_whitehead@ncsu.edu or 252-583-5161) for details.

Beginning scouts are introduced to a cotton leaf! Image by Dan Mott.

From: Dominic Reisig, Extension Entomologist

Wet Weather, Cotton and Soybean Insects

A friend of mine, Owen Taylor, who maintains agfax.com/ thought that it was really interesting that more rain has fallen across North Carolina in the past month than the yearly total of where I was raised. Yes, it truly is like Mars compared to the swamp that is now the state of North Carolina. Jack Bacheler effectively covered the impact of this on cotton insects this week. I received one call where boll retention was around 80% from the cloudy wet weather. This was not due to plant bugs and many surrounding fields were 90% retention or better. North Carolina State University cotton agronomist Keith Edmisten maintains that this is an extremely rare occurrence in our state. Nonetheless you'll want to vigilantly scout your fields for plant bugs, since they might move into cotton now or when corn begins to dry down (did I just write dry down?).

I've been getting a number of questions on the impact of rain on kudzu bug. In general, rain can impact aphids, spider mites and worm pests by enhancing conditions for diseases that might kill them. Rainy weather creates great conditions for stink bugs, but the impact is very little on kudzu bugs.

You should be using the one nymph per sweep threshold on all full-season beans at this point, regardless of their height. I am not sure what this season might hold for kudzu bugs in double-cropped beans so we'll just have to wait and see. If you have early-planted beans, the kudzu bugs will likely be back! A spray now will have no impact on the upcoming migration from the next generation.

In the meantime, it would be a good idea to put together an insect management plan for August and September. I suggest using this article on corn earworm as a guide (http://www.nccrops.com/2013/05/28/thinking-ahead-to-corn-earworm-management-in-soybeans/).

Think about how you might rotate chemistries and timings to manage kudzu bug without flaring corn earworm and other worms. Pyrethroids are great for killing kudzu bugs, but if they are sprayed during flowering, they can often make earworm, looper and armyworm problems worse by killing beneficial insects.

FRUIT AND VEGETABLES

From: Kelly Ivors, Lina Quesada-Ocampo and Barbara Shew, Extension Plant Pathologists

Late Blight Isn't Late This Year . . . It's Early Again

Late blight has been confirmed on tomatoes in Watauga, Guilford and Wake counties and on potatoes in Watauga County by the Plant Disease and Insect Clinic at North Carolina State University (http://www.cals.ncsu.edu/plantpath/extension/clinic/) in collaboration with Dr. Kelly Ivors and Dr. Lina Quesada-Ocampo at the Department of Plant Pathology.

Tomato fruit and foliage and potato foliage were severely affected and blighted in the samples, probably due to the heavy rainfall we have experienced in the past few days, which favors disease. In Western North Carolina, late blight on tomato typically occurs later in the season when the risks for fruit loss are minimal; however, it is only rarely found on tomato outside of the mountain counties. Given the recent rain and weather conditions and the fact that the disease is present in the state earlier than expected, the disease will be harder to control season-long and could quickly spread to other areas. Active scouting and immediate action to protect tomato and potato crops in North Carolina from late blight is recommended.

The Department of Plant Pathology has developed the Extension Plant Pathology portal (http://plantpathology.ces.ncsu.edu/), which contains a pest news section (http://plantpathology.ces.ncsu.edu/tags/pest-news/), to get the latest updated information on new pest alerts. We are constantly adding content as necessary when diseases of significance show up.

If you think you have late blight in your tomatoes and/or potatoes please contact your local Extension agent (http://www.ces.ncsu.edu/local-county-center/) and send photos and/or physical samples to the Plant Disease and Insect Clinic. If late blight is confirmed in your samples by an expert, please send a report at the USAblight website (http://www.usablight.org/) to alert other growers. The USAblight website also contains information about disease identification and control.

During the last two weeks the pathogen appeared in Dickson County, TN (June 7); Morgan County, TN (June 10) but in a greenhouse crop, which is an unusual circumstance; Montgomery County, MD (June 20); Wayne Co, KY (June 22); Mercer County, NJ (June 28); Kent County, DE (July 1) and of course as within the last couple of days - Guilford County and Wake County, NC. This monitoring system is complemented with available recommendations in the *Southeastern U.S. Vegetable Crop Handbook*, as well as an updated factsheet (http://www.ces.ncsu.edu/fletcher/programs/plantpath/tomato-spray-guide/tomato-spray-guide-2013.pdf) that provides a proactive program to pre-empt late blight - especially during harvest.

For control recommendations and additional information, please refer to previous tomato late blight (http://plantpathology.ces.ncsu.edu/2013/06/pest-news-tomato-late-blight-alert-2/) and potato late blight (http://plantpathology.ces.ncsu.edu/2013/06/pest-news-potato-late-blight-alert/) alerts.

Late blight on tomato fruit. Photo: Lina Quesada, North Carolina State University Vegetable Pathology.

Late blight on tomato leaf. Photo: Lina Quesada, North Carolina State University Vegetable Pathology.

Late blight on back of tomato leaf. Photo: Lina Quesada, North Carolina State University Vegetable Pathology.

Late blight on potato leaf. Photo: Lina Quesada, North Carolina State University Vegetable Pathology.

Late blight on back of potato leaf. Photo: Lina Quesada, North Carolina State University Vegetable Pathology.

From: Lina Quesada-Ocampo, Extension Plant Pathologist

Cucurbit Downy Mildew Found in Sampson, Hertford and Martin Counties

Cucurbit downy mildew was found in cucumber in Sampson, Hertford and Martin counties and in butternut squash in Sampson County in the past five days. Growers should scout their fields twice per week and protect their crops. The continuous wet weather we have been experiencing will favor the disease. The forecast for cucurbit downy mildew risk in North Carolina continues to be high (http://cdm.ipmpipe.org/index.php?option=com_content&view=category&layout=blog&id=38&Itemid=61).

Cucurbit downy mildew dark sporulation on back side of cucumber leaf, note angular lesions bound by leaf veins. Photo: Lina Quesada, North Carolina State University Vegetable Pathology.

If you think you have cucurbit downy mildew in your cucurbits please contact your local Extension agent and send photos and/or physical samples to the Plant Disease and Insect Clinic. If cucurbit downy

mildew is confirmed in your samples by an expert, please make sure a report is sent to the cucurbit downy mildew IPM pipe website (http://cdm.ipmpipe.org/index.php?option=com_wrapper&view=wrapper&Itemid=65).

For control recommendations and who to contact for assistance please refer to the first North Carolina report from Wayne County (http://plantpathology.ces.ncsu.edu/2013/06/pest-news-5313/), or check our factsheets in English and Spanish (http://projects.cals.ncsu.edu/veggiepathology/disease_factsheets).

Follow us on Twitter and Facebook for more veggie disease alerts (https://twitter.com/QuesadaLabNCSU and https://www.facebook.com/QuesadaLabNCSU).

ORNAMENTALS AND TURF

From: Steve Frank, Extension Entomologist

Greenstriped Mapleworms

The greenstriped mapleworms were found in Raleigh this week. Some were pretty big so they have been out for a week or so. Its preferred hosts are maple trees, but it may also be found on boxelder and various oaks, especially when in close proximity to maples.

Adults will emerge from their pupae in late April or early May in the South in the form of a moth commonly known as the rosy maplemoth. In the Northern U.S. and Canada, adults emerge from May until July. The body of the moth is yellow on top and pink on the bottom with wings exhibiting yellow and pink colorations that vary in design. The larval form has a red or black head, pale-green body, and seven dark-green lines running the length of the body. There are two prominent horns on the second thoracic segment, two rows of short spines on the side of the body, and four larger spines on the terminal abdominal segments. Full grown larvae can reach 40 mm in length while adult moths can have a wingspan of 37 to 50 mm.

Adult mapleworms lay eggs on the underside of leaves on the outer edge of the tree canopy from May to June in the South and July in the North. These eggs hatch in approximately 10 days, releasing larvae into the canopy. Mapleworm larvae feed on tree foliage from the time of emergence until they are able to pupate. Larvae feed in aggregates up until the third instar at which point they begin to feed singly. It takes about one month for a larva to fully develop, at which point it will crawl to the ground to pupate. In the Southern U.S., adults will emerge in about two weeks and begin the second generation of the year. Only one generation occurs in the Northern U.S. and Canada. The mapleworm overwinters as a pupa in the soil typically under its host maple tree.

Surveying your tree canopy for leaf defoliation or caterpillars is one of the best ways to catch an infestation. Large populations of mapleworms can defoliate entire trees if gone unnoticed or without proper management. Rarely will the tree suffer long term damage, but loss in growth and branch dieback may occur. Most serious defoliation is likely to occur in the South.

Greenstriped mapleworms.

INSECT TRAP DATA

From: Alan A. Harper, Lenoir County

Light Trap Data from Lenoir County

June

Date	Number of Adult Insects							
	HW	CEW	ECB	AW	AWC	GSB	BSB	TBW
June 1	---------- Put up light trap ----------							
June 2	0	0	0	0	0	7	0	0
June 3	0	1	1	0	0	10	0	0
June 4	0	0	0	0	0	5	0	0
June 5	0	0	1	0	0	2	0	0
June 6	0	0	0	0	0	0	0	0
June 7	0	0	0	0	0	3	1	0
June 8	0	0	0	0	0	3	0	0
June 9	0	0	1	0	0	12	1	0
June 10	0	0	0	0	0	4	0	0
June 11	0	0	0	0	0	0	0	0
June 12	0	0	0	0	0	2	0	0
June 13	0	0	0	1	0	4	1	0
June 14	0	0	0	0	0	0	0	0
June 15	0	0	0	0	0	0	0	0
June 16	0	0	1	0	0	0	1	0
June 17	0	0	0	0	0	1	0	0
June 18	0	0	0	0	0	0	1	0

June 19	0	0	0	0	0	0	0	0
June 20	0	0	0	0	0	0	0	0
June 21	0	0	2	0	1	0	0	0
June 22	0	0	0	0	0	1	0	0
June 23	0	0	0	0	0	0	0	0
June 24	0	0	0	0	0	0	0	0
June 25	0	0	0	0	0	1	0	0
June 26	0	0	0	0	0	0	0	0
June 27	0	0	0	0	1	0	0	0
June 28	0	0	0	1	0	0	0	0
June 29	0	0	0	0	0	0	0	0
June 30	0	0	0	0	0	2	0	0
July 1	1	0	0	0	0	3	0	0
July 2	0	0	0	0	0	0	0	0
July 3	0	0	0	0	0	3	2	0

Abbreviations: HW = hornworms; CEW = corn earworms; ECB = European corn borers; AW = true armyworms; AWC = armyworm complex; GSB = green stink bugs; BSB = brown stink bugs; TBW = tobacco budworms

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.