

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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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

Final Issue of *North Carolina Pest News* for 2013

This will be the final issue of the *North Carolina Pest News* for 2013. The editor would like to thank all of the Extension specialists and county agents and directors that contributed articles and/or insect trap data for the newsletter this season.

Thank you for your interest in the *North Carolina Pest News*. Meanwhile, individual articles on insect and disease pests in North Carolina will be provided as *Pest Alerts* via electronic mail and the Internet at http://ipm.ncsu.edu/current_ipm/palert99.html.

FIELD AND FORAGE CROPS

From: Steve Koenning, Extension Plant Pathologist, and Jim Dunphy, Extension Soybean Specialist

Soybean Rust Update: September 20, 2013

Asiatic soybean rust was confirmed September 19 on a soybean sample from Cumberland County, North Carolina. Combined with the confirmed finds in Scotland and Cleveland counties, North Carolina, and Suffolk County, Virginia, essentially all the state's soybeans are within 100 miles of known rust. Samples received this week from Catawba, Columbus, Gaston, Granville, Hoke, Lincoln, Pasquotank, Robeson, Rutherford, and Wayne counties were all negative for rust.

We would consider that rust spores may well be in any soybean field in the state, but as dry as it is in much of the state, we wouldn't expect the disease to develop very rapidly. We would recommend spraying a fungicide on any soybeans in the state which have started blooming, which do not yet have full sized seeds in the top four nodes of the plant, and which appear to have a yield potential of 20 bushels per acre or more.

Rust has now been confirmed this year on soybeans in 110 counties or parishes in ten states (Louisiana, Florida, Alabama, Mississippi, Georgia, North Carolina, South Carolina, Arkansas, Tennessee and Virginia).

Resources for Soybean Rust in 2013

Some sources for more detailed information on Asiatic soybean rust are listed below:

USDA soybean rust web site: <http://www.sbrusa.net/>

North Carolina Agricultural Chemical Manual: <http://ipm.ncsu.edu/agchem/agchem.html>

Soybean Powdery Mildew

Soybean powdery mildew was identified by Mike Carroll in Craven County last week. Powdery mildew of soybean can cause a yield loss that can justify management about 50% of the time or less. Triazole fungicides that are used for control of rust are also excellent for management of powdery mildew. Most soybean varieties however are resistant to this disease.

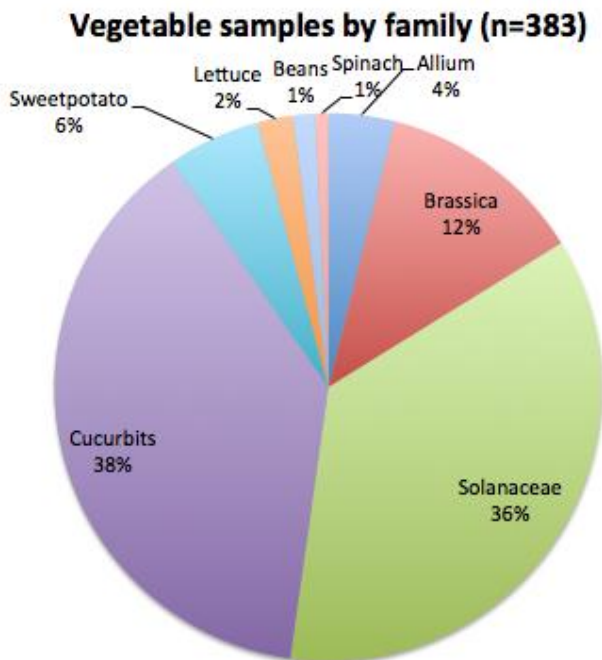
FRUIT AND VEGETABLES

From: Lina Quesada-Ocampo, Extension Plant Pathologist

Vegetable Disease Diagnostics Report

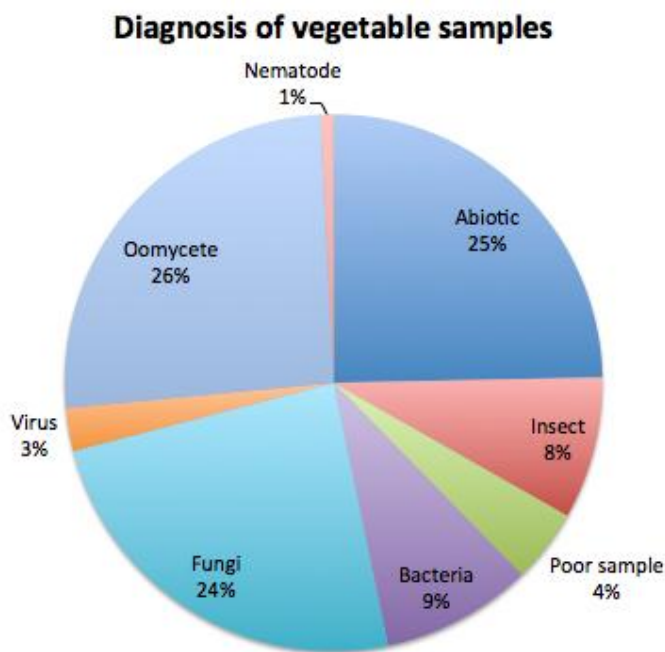
The Vegetable Pathology laboratory (<http://projects.cals.ncsu.edu/veggiepathology/>) at North Carolina State University has been working in collaboration with the *Plant Disease and Insect Clinic* (<http://www.cals.ncsu.edu/plantpath/extension/clinic/>) to diagnose vegetable diseases. We have compiled a report to provide our stakeholders with information of some of the trends we have observed so far this year.

The clinic has received approximately 330 vegetable samples this year, and our laboratory has independently provided diagnostics for 53 additional samples as part of our collaborator role with the cucurbit downy mildew IPM pipe (<http://cdm.ipmpipe.org/>). The following figure shows the percentages of vegetables grouped by type/family, and indicates that the vast majority of samples we diagnose are cucurbit and solanaceous crops, followed by brassica crops, sweetpotatoes, lettuce, beans and spinach.



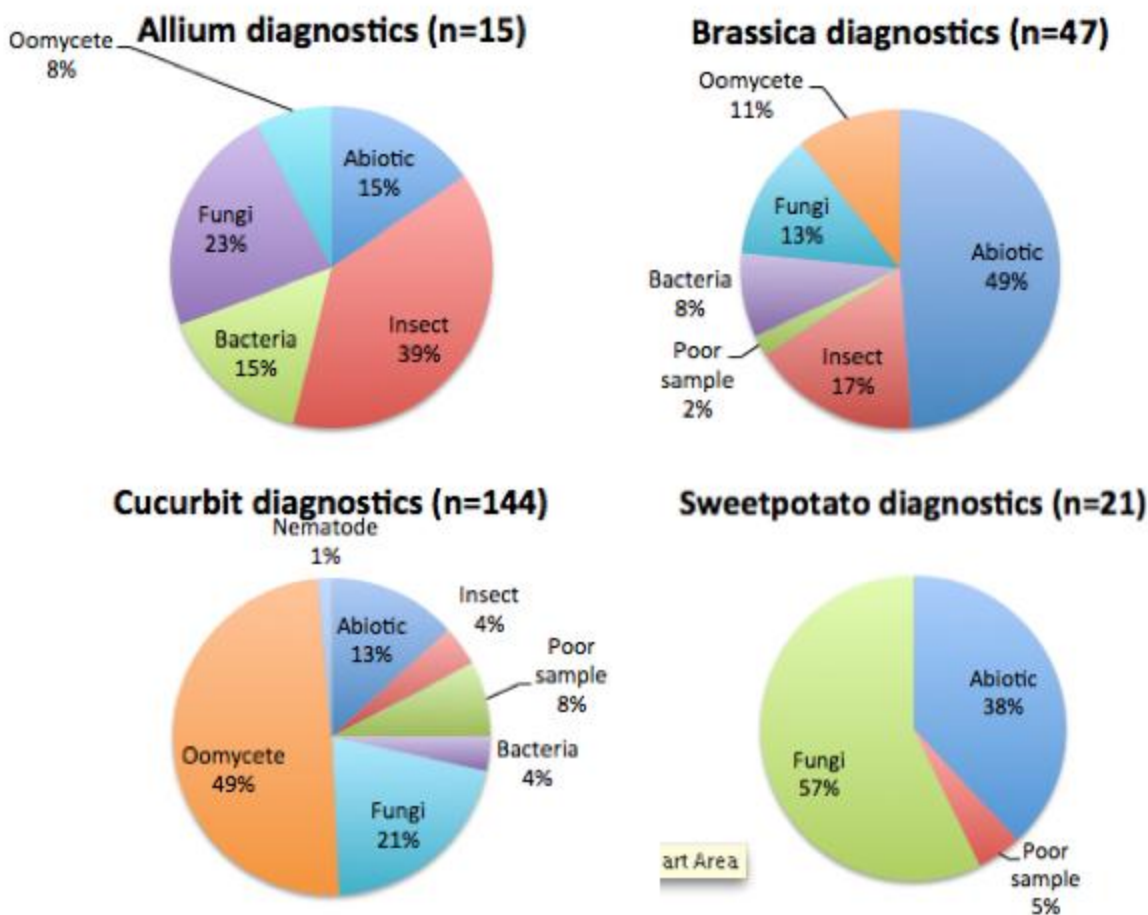
Vegetable samples by family or type diagnosed by the *Plant Disease and Insect Clinic* and the Vegetable Pathology Laboratory.

On the vegetable samples we cover at the clinic with the vegetable diagnostician, Shawn Butler, (<http://www.cals.ncsu.edu/plantpath/extension/clinic/about.html>) (all vegetables except for tomatoes and peppers) and our independently-diagnosed samples, we found that the most frequent diagnosis have been oomycete diseases (in order downy mildew, Phytophthora and Pythium), an abiotic cause (fertilization, soils, salts, water stress, injury, chemical burns, etc), and fungal diseases (in order Fusarium, gummy stem blight, and anthracnose). It is important to note that cucurbit downy mildew is highly represented in the oomycete disease group due to our work with this pathogen, but diagnostics of other downy mildews, Phytophthora and Pythium were still significant. We also indentified some bacterial diseases such as bacterial leaf spots and fruit blotch and a few virus and nematode-affected samples. Several samples submitted were affected by insect damage and no pathogens were found and other samples could not be processed due to poor quality of the sample. The following figure summarizes this information:



Diagnosis of vegetable samples

When we look more closely at the diagnostics by vegetable type of the crops we collaboratively diagnose with the clinic (all vegetables except tomatoes and peppers), we see differences in the most common diagnosis for these vegetables. The following figure shows the crops with more samples submitted (cucurbits, brassicas, sweetpotatoes and alliums). For allium crops, the most common diagnosis was insect damage, followed by fungal diseases. For brassica crops abiotic causes were the most frequent diagnosis, followed by insect damage and fungal diseases. For sweetpotato more than half of the samples were affected by fungal diseases and others by abiotic causes. In cucurbits, oomycete diseases were the most common cause of crop damage, and if we remove the cucurbit downy mildew samples, fungi are the main cause of cucurbit disease.



Diagnosis by vegetable type

Vegetable crops are most susceptible to disease when there is an underlying abiotic stress or injury, thus, having good soil, fertilizing and insect control strategies will results in a healthier crop.

Oomycete and fungal diseases that frequently affected crops this year include pathogens that are dispersed via air currents, and contaminated seed, soil, water or plant material.

For the airborne pathogens such as downy mildew, is important to use host resistance when available and a preventive spray program since there is little one can do to avoid exposing the crop to the pathogen.

For pathogens potentially being introduced into the field through contaminated seed or transplants such as gummy stem blight, is important to start with pathogen-free material, destroy any seedlings showing symptoms of disease and all neighboring seedlings, and protect the seed and transplants with fungicides if possible.

For pathogens potentially being introduced into fields through infested soil or irrigation water such as Phytophthora and Pythium, it’s important to take steps to determine if you have the pathogen present or not since they can survive in your soil for many years and have a broad host range, which limits the efficacy of crop rotation. If the pathogens are not present, do what you can to avoid introducing them by

cleaning your equipment after visiting a field. If you have the pathogen in your field take steps to determine if your irrigation water may be contaminated, if it is, consider using deep well water for irrigation or incorporating a filtering system. If your water is clean, but the pathogen is in your soil, crop rotation to non-hosts will help, as well as cultural practices (use of plastic mulch and drip irrigation), and preventative spray programs. Some growers have used fumigation in cases where inoculum levels of soilborne pathogens are high.

We will continue to publish news and alerts about diseases affecting North Carolina vegetable crops through the Extension Plant Pathology Portal (<http://plantpathology.ces.ncsu.edu/>).

Further information about disease control strategies for specific pathogens can be found in the *North Carolina Agricultural Chemical Manual* (<http://ipm.ncsu.edu/agchem/10-toc.pdf>).

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

ORNAMENTALS AND TURF

From: Steve Frank, Extension Entomologist

Fall Pest Cleanup

Fall is a good time for nurseries and landscapers to consider dormant oil applications for spider mite and scale management. It is also a great time to scout for these critters. After leaves drop you can get good coverage of trunks and branches where scales and mites are overwintering. Scouting is also easy in the fall because scales are often overwintering in their adult, or near adult stages, which are (a little) larger and easier to see. Without leaves it is also much easier to see the scales. Trees that have scales should be examined in spring to determine if live scales are still present and if further treatment is necessary. The squish test will give you a good idea if scales are alive. If you squish some scales with your fingernail and juice comes out, they are alive. If it is dry and crumbly they are dead. Most horticultural oils have a low and high rate listed that may even indicate that they should be used on growing or dormant trees respectively. On dormant deciduous trees you can safely use the high rate.

As a side note, I have seen a lot of wax scale on conifers and broad leaf evergreen plants. I probably see them a lot because they stand out so much. Right now most are juveniles about half the size of the adults.



Juvenile wax scales on hemlock in a landscape. Photo: S. D. Frank.

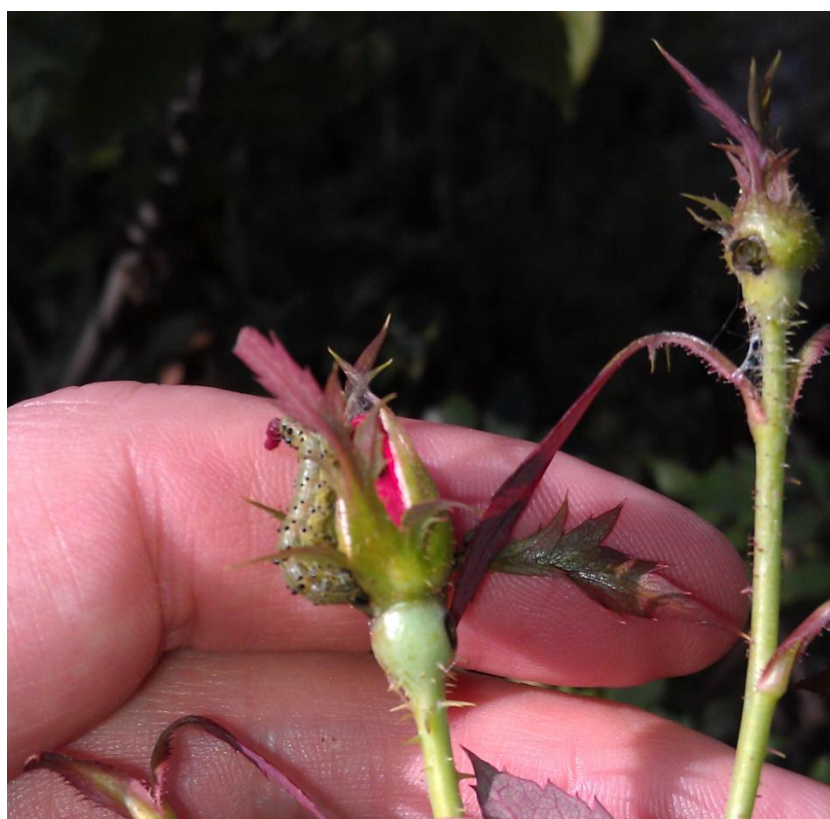
Rose Bud Caterpillars

This is not a species of caterpillar, but several generalists that will feed on rose plants and particularly the buds. Tobacco budworm and corn earworm are the most common culprits. They are active throughout the year and I found some on my knockout roses this week. This does not usually cause extreme damage, but can reduce flowering if you have a lot of caterpillars present.

There are many incidental and beautiful caterpillars out now such as the American Dagger Moth. I have catalogued some pictures and information on my blog: <http://ecoipm.com/>.

General caterpillar information may be found:

http://www.ces.ncsu.edu/depts/ent/notes/Ornamentals_and_Turf/shrubs/note07/note07.html



Noctuid caterpillar feeding on a rose bud. Note damage to bud on the right. Photo: S. D. Frank.

RESIDENCES, STRUCTURES AND COMMUNITIES

From: Mike Waldvogel, Extension Entomology

West Nile Virus Reported in Wilson County

Many of you probably saw the report that someone in Wilson County has died from West Nile Virus. At this time, North Carolina Department of Health and Human Services has not released details of the

name, gender, age of the individual. This is pretty much standard compliance with Health Insurance Portability and Accountability Act in the case of non-contagious diseases. Agencies typically do not provide additional information unless a member of the victim's family makes the information public (such as in an interview with the news media as in the case last August when a 84 year old Goldsboro man died from the disease).

Only about 1% of people who become infected develop severe illnesses and many people may not become sick at all. The symptoms of West Nile Virus can take 3 to 14 days to present themselves and so many people may not attribute their illness to the virus until it becomes severe. Among people that develop severe illness (i.e., excluding those individuals who exhibit minimal or no symptoms), the mortality rate ranges from about 3 to 15% with the rate being highest among the elderly (as likely the case mentioned above).

As we've seen in previous years, West Nile Virus occurs far less frequently in people in North Carolina as compared to other nearby states and it is far less frequent here than other mosquito-borne diseases such as Eastern Equine Encephalitis (EEE) and LaCrosse Encephalitis (LACE). EEE is more common in eastern North Carolina and we've had a number of equine-related cases in the state primarily with horses that were not inoculated against the disease. LACE is found primarily in western North Carolina, but we have had cases show up in other areas of the state and most of those are with children.

Birds are the "amplifying hosts" for the West Nile virus which basically means that infected mosquitoes transmit the virus to birds which are in turn bitten by other mosquitoes which acquire the virus and spread it to even more birds. Some mosquitoes species feed primarily on birds but the species that will readily feed on both birds and mammals are the ones that pose the risk of spreading the disease to people. The mosquito species that transmit West Nile Virus tend to breed in waste water collection areas and stagnating catch-basins. You can also find them breeding where water collects after storms and begins to stagnate with the abundant organic matter present. So, one obvious approach for residents is to make sure that they clear stagnating water sources on their property. It doesn't matter if this water is on a 1,000 acre farm or on a 0.1 acre home lot, water that collects and stagnates has the potential to become a mosquito breeding site. Across most of North Carolina, the Asian tiger mosquito remains our most common pest species and it will exploit similar pools of stagnating water on the ground and in man-made objects.

Although we have seen far less rain in recent weeks as compared to the spring and even early summer, any rainfall inevitably going to lead to a rise in mosquito activity as eggs deposited even weeks ago come into contact with impounded storm water in the areas described above and they begin to hatch. The first response by individuals should focus on disrupting those breeding pools rather than worrying about what to spray in their yard. These were some of the particular points I mentioned in an earlier email when we first saw EEE show up.

- Bird baths - simply flush them with a garden hose and you flush out the mosquito larvae in the process. Plus, the birds will appreciate the fresh water. For horse owners with water troughs near stalls or out in pastures, one option is to use a product such as "Mosquito Dunks" which contain the bacteria "*Bacillus thuringiensis israelensis*" which kills the mosquito larvae (not the adults). Although you can use them in outdoor water bowls for pets, it is far simpler (and better for your animals) if you "tip and toss" the water from the bowl and replenish it with fresh water **daily**.
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- Old cans, tires, etc. - empty them and get rid of them (legally, not simply tossed along the highway to become someone else's problem).
 - Outdoor flower pots - empty the water from the dishes/trays underneath them. Your plants have plenty of water without the overflow. This also helps reduce fungus gnat problems in the plant soil.
 - Remove all of that built-up debris from your gutters. The water and decaying material attract mosquitoes.
 - Rain barrels - if you collect water from your gutters or some other system, make sure the barrel is screened to keep out debris and mosquitoes
 - Tarps that cover your boat, grill, firewood, etc. also collect pockets of water that can remain for 1 to 2 weeks.
 - The bed of that '57 Ford pickup that you've been "restoring" for the last 25 years can collect water particularly if the tailgate faces uphill in your yard.
 - Kids' pools - if they're not being used by kids, they're probably being used by the mosquitoes (and maybe some toads) - empty them. The same thing applies to pools (in ground or above ground) that aren't maintained. This had been a particularly significant problem in recent years in other states with swimming pools on properties that had been abandoned or foreclosed.
 - Drainage ditches - they're meant to collect storm water runoff **temporarily**. Keep them free of debris so that water flows and has time to filter into the soil.
 - Decorative fish ponds can be a source of mosquitoes if they contain a lot of vegetation that provides hiding places for the mosquito larvae. "Mosquito Dunks" are an option here.
 - Tree holes - when limbs fall off trees, the remaining hole in the trunk can collect water. Flush that out or put a small piece of a mosquito dunk into it.

Another critical issue - personal protection

The majority of mosquito-borne disease incidences, whether they're human or equine, are due to a lack of personal protection. Horseowners need to spend the time and money to get their horses vaccinated against EEE. For us two-legged creatures, we simply need to take precautions when we're outdoors for work or recreation. If it's too uncomfortable to wear long-sleeved shirts and long pants, then cover all **exposed** areas of the skin with an insect repellent (see <http://insects.ncsu.edu/Urban/repellents.htm>). A few other important points about using repellents:

- Do not put repellent on skin that will be covered by clothing.
 - Children spend a lot of time outdoors, particularly when school is not in session. The greater the amount of time spent outdoors can increase the likelihood of getting bitten by a mosquito (and potentially a higher likelihood of being bitten by an infected mosquito). Before applying a repellent
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to a child, read the label carefully to make sure that it contains concentration appropriate for use on children.

- When using repellents on children - you should apply the product to your hands and then rub it on their arms, legs, neck, etc. If you allow your child to rub repellent on their arms and legs, they need to wash their hands immediately afterwards because they will inevitably forget and either rub their eyes or stick their fingers in their mouths.

People ask about yard treatments for mosquitoes. The idea is to treat mosquito resting spots on the lawn and surrounding landscaping. These treatments can help reduce mosquito populations and are certainly a choice for individuals to make. Some people ask about fogging their yards (e.g., with the hand-held or backpack fogging machines available at hardware stores). These pieces of equipment produce a fine aerosol mist. So, people need to bear in mind a few things if they decide to go that route:

- Spray when there is little (if any) wind. Otherwise, the chemical simply drifts off your property rapidly and may not kill as many mosquitoes as you expect.
- Remove or cover children's toys, pet water and food bowls, barbecue grills, etc.
- Avoid spraying flowering plants during the day when bees and other pollinators are out there. We're already losing enough honey bees and you don't need to contribute to the toll.
- Stay upwind of any application that you're doing and take precautions by wearing proper "PPE" (Personal Protective Equipment) - long-sleeved shirts, long pants, hat, goggles and preferably some respiratory protection.
- More importantly, watch out for drift off of your property. The chemical may end up on someone else's property whether that's private property or a park, school or some other public property. Your neighbor's may or may not be receptive to the chemical mist and you need to be aware in particular what is going on at the adjoining property so you don't contaminate people, pets, food, honey bee hives, etc.

And along that line - one other point that I've mentioned repeatedly over the years - mosquitoes have no concept of property lines. They are simply out there looking for a blood meal whether it's you or your neighbor. Chemicals may knock down mosquito populations right now and provide some "control". However, mosquito **management** is what is really needed and that requires a proactive community effort in order to succeed. "It takes a village" applies to mosquito management and you only need one "village idiot" to make that program be unsuccessful. Communication and Cooperation are as important (or more important) to make mosquito management work.

We have information on mosquito control on the web at <http://insects.ncsu.edu/Urban/mosquito.htm>.

Stink Bugs Causing a Stink

We are getting reports of brown marmorated stink bugs invading homes in the Triad and Foothills areas which probably means the same problem is likely occurring in the mountains as well. These stink bugs

feed on a wide range of fruit trees, ornamentals and field crops. At this time of year, the adults are looking for places to pass the winter and so they are aggregating on homes and finding their way inside. This is essentially the same issue we have seen the Asian lady beetle and more recently with the infamous kudzu bug (which is still hanging out in soybean fields and kudzu). For people who want to try insecticidal sprays, they can use products containing cyfluthrin, lambda-cyhalothrin, permethrin, tralomethrin and similar pyrethroid products and target the treatments to critical areas around windows, doors and other entry points. However, chemical control is marginal for a variety of reasons including the relatively short residual effect of these chemicals outdoors (they simply don't weather well). Second, it's simply impossible to effectively and safely treat all of the areas where these pests can invade. In some cases, the limitation is the location of the surface. Under the EPA's revised label requirements for the pyrethroids in particular, these products cannot be applied to vertical surfaces located over impervious surfaces (driveways, sidewalks, etc.) where there is a high likelihood of run-off into storm drains. Using a licensed pest control service may provide slightly better results because those companies have the equipment to treat more surfaces. However, many people have an expectation of no more invaders and that's simply not going to happen. This phenomenon is likely to continue for several weeks particularly as the temperatures drop and more critters head for warmer places. Indoors, physical removal is still the best approach.

INSECT TRAP DATA

From: Richard W. Rhodes, County Extension Director, Bertie County

Light Trap Data from Bertie County

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*****
                                Hexlana
                                TNT
                                Woodard
                                PBRs
                                *****
Date      BW  GSB  BW  GSB  BW  GSB  BW  GSB
*****
July 22   1   1   -   -   -   -   0   -
July 23   -   -   -   -   -   -   0   -
July 24   0   0   0   1   -   -   0   -
July 25   0   1   0   0   -   -   -   -
July 26   0   0   NR  NR   -   -   0   -
July 27   0   0   NR  NR   -   -   0   -
July 28   0   0   NR  NR   -   -   0   -
July 29   0   0   NR  NR   -   -   -   -
July 30   3   0   NR  NR   -   -   -   -
July 31   4   0   4   0   -   -   -   -
August 1  NR  NR  NR  NR   -   -   -   -
August 2   3   0   NR  NR   -   -   -   -
August 3   4   0   NR  NR   -   -   -   -
August 4   4   1   NR  NR   -   -   -   -
August 5   6   0   5   0   -   -   -   -
August 6  NR  NR  NR  NR   -   -   -   -
August 7   4   1   5   0   -   -   -   -
August 8   5   3   NR  NR   -   -   -   -
August 9   2   1   2   0   0   4   -   -
August 10 NR  NR  NR  NR  NR  NR   -   -
August 11 NR  NR  NR  NR  NR  NR   -   -
    
```

| | | | | | | | | |
|-------------|----|----|----|----|----|----|----|----|
| August 12 | NR | NR | 3 | 4 | 9 | 7 | - | - |
| August 13 | 5 | 6 | 9 | NR | 6 | 28 | - | - |
| August 14 | 3 | 6 | NR | NR | 5 | 7 | - | - |
| August 15 | 0 | 0 | NR | NR | NR | NR | - | - |
| August 16 | NR | NR | NR | NR | NR | NR | - | - |
| August 17 | NR | NR | NR | NR | NR | NR | - | - |
| August 18 | NR | NR | NR | NR | NR | NR | - | - |
| August 19 | 7 | 1 | 5 | 0 | NR | NR | - | - |
| August 20 | 0 | 0 | NR | NR | 2 | 2 | - | - |
| August 21 | 1 | 0 | NR | NR | NR | NR | - | - |
| August 22 | NR | NR | NR | NR | NR | NR | - | - |
| August 23 | 1 | 2 | 3 | 7 | NR | NR | - | - |
| August 24 | NR | NR | NR | NR | NR | NR | - | - |
| August 25 | NR | NR | NR | NR | NR | NR | - | - |
| August 26 | 0 | 0 | 1 | 0 | 7 | 8 | NR | NR |
| August 27 | 0 | 0 | NR | NR | 0 | 1 | NR | 10 |
| August 28 | - | - | - | - | 0 | 7 | NR | NR |
| August 29 | - | - | - | - | - | - | - | NR |
| August 30 | 4 | 5 | - | - | - | 7 | 3 | 12 |
| August 31 | - | - | - | - | - | - | - | - |
| September 1 | - | - | - | - | - | - | - | - |
| September 2 | 5 | 10 | 0 | 25 | - | - | - | - |
| September 3 | - | - | - | - | - | - | - | - |
| September 4 | 12 | 1 | 27 | 0 | - | - | - | - |
| September 5 | - | - | 25 | 5 | - | - | - | - |

BW = bollworms; GSB = green stink bugs;
 NR = No Report

From: Mike Carroll, Agricultural Extension Agent, Craven County

Light Trap Data from Craven County

Number of Adult Insects

| Date | BW | GSB | BSB | FAW | THW |
|----------|----------------------------|-----|-----|-----|-----|
| July 8 | ----- Date Initiated ----- | | | | |
| July 11 | 3 | 1 | 0 | 0 | 1 |
| July 12 | 2 | 0 | 0 | 0 | 0 |
| July 15 | 8 | 1 | 0 | 0 | 1 |
| July 16 | 7 | 0 | 0 | 0 | 1 |
| July 17 | 8 | 0 | 0 | 0 | 1 |
| July 19 | 8 | 0 | 0 | 1 | 0 |
| July 22 | 12 | 0 | 0 | 0 | 1 |
| July 26 | 20 | 1 | 0 | 0 | 0 |
| July 30 | 25 | 2 | 0 | 0 | 6 |
| August 1 | 16 | 0 | 0 | 0 | 2 |
| August 2 | 22 | 2 | 0 | 1 | 4 |
| August 5 | 26 | 3 | 0 | 2 | 3 |
| August 6 | 8 | 1 | 0 | 0 | 1 |

August 9 25 1 0 0 1
 August 12 30 1 0 0 1

BW = bollworms; GSB = green stink bugs; BSB = brown stink bugs;
 FAW = fall armyworms; THW = tobacco hornworms

Location of trap: Cove City
 Cooperators: R & W McCoy Farms and Cove City Fertilizer

From: Arthur R. Bradley, Jr., County Extension Director, Edgecombe County

Light Trap Data from Edgecombe County

 Number of Adult Insects

| Date | West Edgecombe | | | Coakley | | | Lawrence | | |
|-----------|----------------|----|----|---------|----|----|----------|----|----|
| | CEW | BS | GS | CEW | BS | GS | CEW | BS | GS |
| July 5 | - | - | - | 2 | 3 | 7 | - | - | - |
| July 8 | - | - | - | 1 | 2 | 20 | - | - | - |
| July 10 | - | - | - | 0 | 0 | 6 | - | - | - |
| July 12 | 0 | 1 | 1 | 2 | 0 | 6 | - | - | - |
| July 15 | 0 | 0 | 0 | 3 | 0 | 0 | - | - | - |
| July 17 | 0 | 0 | 0 | 4 | 1 | 8 | - | - | - |
| July 19 | 1 | 0 | 0 | 0 | 0 | 9 | - | - | - |
| July 22 | 0 | 1 | 0 | 0 | 2 | 10 | - | - | - |
| July 24 | 0 | 0 | 0 | 0 | 0 | 6 | - | - | - |
| July 26 | 0 | 0 | 0 | 6 | 0 | 0 | 1 | 0 | 1 |
| July 29 | 2 | 1 | 0 | 7 | 1 | 1 | 0 | 0 | 15 |
| July 31 | 14 | 0 | 0 | 5 | 0 | 0 | 1 | 0 | 6 |
| August 2 | 18 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 6 |
| August 5 | 28 | 1 | 0 | 10 | 0 | 0 | 0 | 0 | 6 |
| August 7 | 16 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 2 |
| August 9 | ND | - | - | 24 | 0 | 1 | 0 | 0 | 2 |
| August 12 | ND | - | - | 26 | 0 | 2 | 0 | 0 | 3 |
| August 14 | 8 | 0 | 2 | 16 | 0 | 1 | 0 | 0 | 13 |
| August 16 | 1 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 1 |
| August 19 | 0 | 0 | 1 | 26 | 0 | 0 | 1 | 0 | 0 |
| August 21 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 2 |
| August 23 | 0 | 0 | 2 | 6 | 1 | 0 | 0 | 0 | 2 |
| August 26 | 0 | 0 | 0 | 5 | 0 | 0 | - | - | - |
| August 28 | 0 | 0 | 1 | 11 | 0 | 0 | 0 | 0 | 0 |
| August 30 | 1 | 0 | 1 | - | - | - | - | - | - |

Abbreviations: CEW = corn earworms; BS = brown stink bugs;
 GS = green stinks bugs; ND = No Data

From: Arthur Whitehead, Jr., County Extension Director, Halifax County

Light Trap Data from Halifax County

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*****
                Hobgood                Dawson                Weldon
                *****                *****                *****
Date            CEW  GSB  BSB        CEW  GSB  BSB        CEW  GSB  BSB
*****
July 15         NR   -   -          NR   -   -          NR   -   -
July 17         0   0   0          NR   -   -          NR   -   -
July 19         NR   -   -          NR   -   -          NR   -   -
July 22         NR   -   -          NR   -   -          NR   -   -
July 24         NR   -   -          NR   -   -          NR   -   -
July 26         1   0   0          3   0   0          NR   -   -
July 29         NR   -   -          NR   -   -          NR   -   -
July 31         NR   -   -          NR   -   -          NR   -   -
August 2        NR   -   -          NR   -   -          NR   -   -
August 5         0   2   0          NR   -   -          5   1   0
August 7         0   6   0          26  1   0          5   1   0
August 9         0   2   0          49  7   0          7   0   0
August 12        0   2   0          NR   -   -          8   2   0
August 14        0   2   0          43  7   -          NR   -   -
August 16        0   4   1          4   0   0          NR   -   -
August 19        1   0   0          26  0   0          6   0   0
August 21        1   2   0          39  0   0          6   0   0

August 23        0   2   0          NR   -   -          NR   -   -
August 26        NR   -   -          14  1   0          8   0   0
*****
    
```

Abbreviations: CEW = corn earworms; GSB = green stink bugs;
 BSB = brown stink bugs; NR = No Report

From: Alan A. Harper, Lenoir County

Light Trap Data from Lenoir County

June

```

*****
                Number of Adult Insects
                *****
Date            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

Number of Adult Insects

| Date | HW | CEW | ECB | AW | AWC | GSB | BSB | TBW |
|---------|----|-----|-----|----|-----|-----|-----|-----|
| 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 |
| July 4 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 |
| July 5 | 0 | 0 | 1 | 0 | 1 | 4 | 2 | 0 |
| July 6 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 |
| July 7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| July 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| July 9 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| July 10 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| July 11 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 |
| July 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| July 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| July 14 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| July 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| July 16 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| July 17 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 |
| July 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| July 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| July 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| July 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| July 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| July 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| July 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| July 24 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 |
| July 25 | 1 | 2 | 1 | 0 | 2 | 2 | 0 | 0 |
| July 26 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 1 |

| | | | | | | | | |
|---------|---|----|---|---|---|---|---|---|
| July 27 | 1 | 3 | 0 | 0 | 1 | 1 | 0 | 1 |
| July 28 | 1 | 4 | 0 | 0 | 2 | 0 | 0 | 0 |
| July 29 | 0 | 10 | 0 | 0 | 2 | 0 | 0 | 1 |
| July 30 | 0 | 14 | 0 | 0 | 4 | 0 | 0 | 0 |
| July 31 | 0 | 27 | 0 | 0 | 4 | 1 | 0 | 1 |

August

Number of Adult Insects

| Date | HW | CEW | ECB | AW | AWC | GSB | BSB | TBW |
|-----------|----|-----|-----|----|-----|-----|-----|-----|
| August 1 | 0 | 38 | 0 | 0 | 4 | 1 | 1 | 0 |
| August 2 | 1 | 10 | 1 | 0 | 1 | 1 | 0 | 1 |
| August 3 | 0 | 23 | 0 | 0 | 2 | 0 | 0 | 0 |
| August 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| August 5 | 0 | 22 | 0 | 1 | 7 | 0 | 0 | 0 |
| August 6 | 0 | 27 | 0 | 3 | 5 | 0 | 0 | 1 |
| August 7 | 0 | 38 | 1 | 5 | 4 | 0 | 0 | 2 |
| August 8 | 0 | 34 | 0 | 0 | 1 | 1 | 1 | 2 |
| August 9 | 0 | 14 | 0 | 3 | 0 | 1 | 0 | 0 |
| August 10 | 0 | 10 | 0 | 0 | 2 | 0 | 0 | 0 |
| August 11 | 0 | 17 | 0 | 0 | 1 | 0 | 0 | 0 |
| August 12 | 1 | 10 | 0 | 0 | 2 | 4 | 0 | 0 |
| August 13 | 0 | 4 | 1 | 0 | 2 | 1 | 0 | 0 |
| August 14 | 0 | 6 | 1 | 0 | 3 | 1 | 0 | 0 |
| August 15 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 0 |
| August 16 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 0 |
| August 17 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| August 18 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| August 19 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| August 20 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| August 21 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| August 22 | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 0 |
| August 23 | 0 | 1 | 0 | 0 | 2 | 2 | 0 | 0 |
| August 24 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| August 25 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| August 26 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| August 27 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| August 28 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 |
| August 29 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| August 30 | 0 | 7 | 0 | 1 | 3 | 0 | 0 | 0 |
| August 31 | 0 | 1 | 0 | 0 | 3 | 3 | 0 | 0 |

September

Number of Adult Insects

| Date | HW | CEW | ECB | AW | AWC | GSB | BSB | TBW |
|-------------|----|-----|-----|----|-----|-----|-----|-----|
| September 1 | 0 | 2 | 0 | 0 | 2 | 1 | 0 | 0 |
| September 2 | 0 | 2 | 0 | 0 | 1 | 1 | 0 | 0 |
| September 3 | 0 | 6 | 0 | 3 | 2 | 0 | 0 | 0 |

| | | | | | | | | |
|--------------|---|----|---|---|---|----|---|---|
| September 4 | 0 | 9 | 0 | 0 | 2 | 0 | 0 | 1 |
| September 5 | 0 | 15 | 0 | 1 | 0 | 11 | 0 | 0 |
| September 6 | 0 | 14 | 0 | 1 | 6 | 8 | 0 | 2 |
| September 7 | 0 | 9 | 0 | 1 | 6 | 2 | 0 | 0 |
| September 8 | 0 | 9 | 2 | 0 | 6 | 0 | 0 | 0 |
| September 9 | 0 | 8 | 0 | 0 | 5 | 3 | 0 | 0 |
| September 10 | 0 | 12 | 0 | 1 | 9 | 12 | 0 | 0 |
| September 11 | 0 | 16 | 0 | 3 | 4 | 5 | 0 | 0 |
| September 12 | 0 | 9 | 0 | 2 | 2 | 8 | 0 | 0 |
| September 13 | 0 | 2 | 0 | 2 | 1 | 6 | 0 | 0 |
| September 14 | 0 | 4 | 0 | 2 | 4 | 1 | 0 | 1 |
| September 15 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 1 |
| September 16 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 |
| September 17 | 0 | 2 | 0 | 0 | 1 | 1 | 0 | 0 |
| September 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| September 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| September 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 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

From: Craig Ellison, Agricultural Extension Agent, Northampton County

Light Trap Data from Northampton County

Number of Adult Insects

| Date | Woodland | | | Conway | | | Galatia | | | Seaboard | | | Gaston | | | Jackson | | | | |
|-----------|----------|----|----|--------|----|----|---------|----|----|----------|----|----|--------|----|----|---------|----|----|----|---|
| | CEW | GR | BR | CEW | GR | BR | CEW | GR | BR | CEW | GR | BR | CEW | GR | BR | CEW | GR | BR | | |
| July 31 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 15 | 13 | 0 |
| August 2 | 2 | 1 | 1 | - | - | - | - | - | - | 14 | 10 | 0 | 20 | 1 | 0 | 12 | 31 | 0 | | |
| August 5 | 0 | 0 | 0 | - | - | - | 21 | 6 | 2 | 18 | 2 | 0 | 27 | 2 | 3 | 25 | 27 | 1 | | |
| August 7 | 0 | 0 | 0 | - | - | - | 8 | 0 | 0 | 12 | 0 | 0 | 16 | 0 | 0 | 40 | 9 | 0 | | |
| August 9 | 1 | 1 | 1 | - | - | - | 17 | 5 | 1 | 16 | 2 | 0 | 16 | 0 | 0 | 43 | 37 | 0 | | |
| August 12 | 1 | 0 | 0 | - | - | - | 3 | 2 | 1 | 12 | 2 | 0 | 6 | 1 | 0 | 45 | 43 | 2 | | |
| August 14 | 1 | 0 | 0 | - | - | - | 9 | 13 | 0 | 24 | 0 | 0 | - | - | - | 27 | 93 | 0 | | |
| August 16 | 0 | 0 | 0 | - | - | - | 0 | 0 | 0 | 2 | 0 | 0 | - | - | - | 2 | 2 | 0 | | |
| August 19 | 0 | 0 | 0 | - | - | - | 4 | 0 | 0 | 12 | 0 | 0 | - | - | - | 14 | 10 | 0 | | |
| August 21 | 0 | 0 | 0 | - | - | - | 3 | 1 | 0 | 6 | 0 | 0 | - | - | - | 4 | 12 | 0 | | |
| August 23 | 0 | 0 | 0 | - | - | - | 10 | 4 | 0 | 18 | 3 | 0 | - | - | - | 1 | 17 | 0 | | |
| August 26 | 0 | 0 | 0 | - | - | - | 1 | 0 | 0 | 4 | 0 | 0 | - | - | - | 2 | 2 | 0 | | |
| August 28 | 1 | 0 | 0 | - | - | - | 3 | 3 | 0 | 41 | 12 | 0 | - | - | - | 2 | 21 | 1 | | |
| August 30 | 0 | 0 | 0 | - | - | - | 8 | 11 | 0 | 3 | 0 | 0 | - | - | - | 10 | 27 | 0 | | |
| Sept. 2 | 0 | 0 | 0 | - | - | - | 17 | 9 | 0 | - | - | - | - | - | - | 3 | 53 | 0 | | |
| Sept. 4 | 0 | 0 | 0 | - | - | - | 19 | 7 | 0 | - | - | - | - | - | - | 6 | 6 | 0 | | |
| Sept. 6 | 0 | 0 | 0 | - | - | - | 8 | 1 | 0 | - | - | - | - | - | - | 10 | 7 | 0 | | |

CEW = corn earworms; GR = green stink bugs; BR = brown stink bugs

Locations: Woodland, Conway, Galatia, Seaboard, Gaston and Jackson
Monitored by: L. Culpepper, K. Edwards, Ben Harris, T. Flythe, D. Grant
and B. Bryant

From: Melissa E. Huffman, Agricultural Extension Agent, Onslow County

Light Trap Data from Onslow County

```

*****
                        Number of Adult Insects
*****
                        Green      Fall      Tobacco
Date      Bollworms  Stink Bugs  Armyworm  Hornworm
*****
July 1           0           0           0           0
July 3           0           0           0           0
July 5           0           0           0           0
July 8           0           0           0           0
July 10          0           2           0           0
July 12          0           1           0           0
July 15          0           0           0           0
July 17          6           2           0           0
July 19          6           3           0           1
July 22         11           8           1           0
July 24          8          15           1           0
July 26          8           6           0           0
July 29         25           5           0           1
July 31         21           8           0           2
August 2      ----- Data not collected -----
August 5         20          74           0           2
August 7         12           2           2           1
August 9         16           8           0           0
August 12        28          29           0           1
August 14         6          28           0           0
August 16        12           1           0           1
August 19         7           4           0           0
August 21         2           0           0           0
August 26         5           1           0           0
August 28         3           0           0           0
*****

```

Trap Location: Richlands; Cooperator: Richlands Farm, Inc.
Insect counts are from a single black light trap located
approximately 1 mile east of Richlands.

From: Scotland County Extension Center

Light Trap Data from Scotland County

```

*****
                          Number of Adult Insects
*****
          Gibson                John's                Laurinburg
*****                *****                *****
Date      BW  GSB  BSB  FAW      BW  GSB  BSB  FAW      BW  GSB  BSB  FAW
*****
July 17    0   0   0   -      11  14  34   -      0   0   0   -
July 19    4   6   5   -      12   7  20   -      0  11  44   -
July 22   16  21   0   -      12   5  14   -      1  11  13   -
July 24   44   7   0   -      25   6  17   -      1   2   6   -
July 26   22   2   0   -      44   1   1   -      5   0   2   -
July 29  118  13   0   -      54   3  12   -     15   7   2   -
July 31  114   3   0   -      94   8   9   -      0   0   0   -
August 2    0   0   0   -      66   5   4   -     12   2   6   -
August 5  268  39   1   -      53  23  53   -     20   2  16   -
August 7    -   -   -   -        -   -   -   -        -   -   -   -
August 9    -   -   -   -        -   -   -   -        -   -   -   -
August 12   -   -   -   -        -   -   -   -        -   -   -   -
August 14  20  13   1   -      19  16   2   -     23   7  28   -
August 16  15   1   0   -       6   0   0   -     21   4   9   -
August 19  18  12   0   -      32   8   4   -     11   2   2   -
August 21   9   8   0   -      12   0   0   -     11   5   6   -
August 23  15   9   0   -      14   4   3   -        -   -   -   -
August 26   3   2   0   -      34  13   8   -        -   -   -   -
August 28  13  11   0   -      23   7   3   -     20  16   1   -
August 30  31  26   0   -      38  26  10   -     32   5   6   -
Sept.  2    -   -   -   -      64  16   4   -    174  10   5   -
Sept.  4   64  12   0   -     112  18   3   -    216   6   1   -
Sept.  6    -   -   -   -     101  10   0   -    187   8   1   -
Sept.  9   24   3   0   -      54   1   0   -     89   0   0   -
Sept. 11    -   -   -   -      37   7   0   -    151   3   0   -
Sept. 13   64  15   0   -      31  27   0   -     76   8   0   -
Sept. 16   20   2   0   -       9   2   0   -     21   0   0   -
*****
    
```

BW = bollworms; GSB = green stink bugs;
 BSB = brown stink bugs; FAW = fall armyworms

From: Andrew Baucom, Agricultural Extension Agent, Stanly County

Light Trap Data from Stanly County

```

*****
                          Number of Adult Insects
*****
Date      CEW      BR      GR
*****
August 19    0        2        0
August 21    0        0        0
    
```

| | | | |
|--------------|---|---|---|
| August 23 | 0 | 0 | 0 |
| August 26 | 1 | 0 | 0 |
| August 28 | 0 | 0 | 0 |
| August 30 | 0 | 0 | 2 |
| September 2 | 0 | 0 | 0 |
| September 4 | 0 | 0 | 0 |
| September 6 | 0 | 0 | 1 |
| September 9 | 0 | 0 | 0 |
| September 11 | 0 | 0 | 0 |
| September 13 | 0 | 1 | 0 |
| September 16 | 2 | 0 | 2 |
| September 18 | 0 | 0 | 1 |
| September 20 | 0 | 0 | 1 |

CEW = corn earworm moths; BR = brown stink bugs; GR = green stink bugs

From: Dominic Reisig, Extension Entomologist

Light Trap Data from Tidewater Research Station

Number of Adult Insects

| Date | CEW | TBW | AW | SBL | BSB | GSB |
|---------|-----|-----|----|-----|-----|-----|
| July 5 | 0 | 0 | 0 | 0 | 0 | 0 |
| July 8 | 0 | 0 | 0 | 0 | 0 | 0 |
| July 10 | 0 | 0 | 0 | 0 | 1 | 1 |
| July 12 | 0 | 0 | 0 | 0 | 1 | 3 |
| July 15 | 0 | 1 | 0 | 0 | 6 | 2 |
| July 17 | 0 | 0 | 0 | 0 | 2 | 8 |
| July 19 | 0 | 1 | 0 | 0 | 6 | 3 |

Abbreviations: CEW = corn earworms; TBW = tobacco budworms; AW = armyworms; SBL = soybean loopers; BSB = brown stink bugs; GSB = green stink bugs

From: Tyler Whaley, Agricultural Extension Agent, Wayne County

Light Trap Data from Wayne County

Number of Adult Insects

Goldsboro

| Date | GSB | BSB | CEW | HW |
|---------|-----|-----|-----|----|
| July 14 | - | 2 | - | 0 |
| July 15 | 5 | 6 | 0 | 0 |

| | | | | |
|---------------|----|----|-----|---|
| July 17 | 9 | 19 | 0 | 0 |
| July 19 | 0 | 6 | 0 | 0 |
| July 22 | 2 | 5 | 0 | 0 |
| July 24 | 1 | 5 | 0 | 0 |
| July 26 | 1 | 1 | 1 | 1 |
| July 29 | 1 | 0 | 7 | 1 |
| July 31 | 9 | 1 | 15 | 0 |
| August 2 | 2 | 0 | 27 | 0 |
| August 5 | 5 | 2 | 40 | 0 |
| August 7 | 0 | 0 | 0 | 0 |
| August 9 | 4 | 1 | 16 | 0 |
| August 12 | 5 | 1 | 12 | 0 |
| August 14 | 10 | 2 | 20 | 1 |
| August 16 | 2 | 0 | 2 | 0 |
| August 21 | 7* | 2* | 20* | 0 |
| (5 day count) | | | | |
| August 23 | 4 | 0 | 4 | 1 |
| August 26 | 2 | 1 | 0 | 0 |

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

Cooperator: Willie Howell Farm (Goldsboro)

From: Norman E. Harrell, Agricultural Extension Agent, Wilson County

Light Trap Data from Wilson County

| Date | Number of Adult Insects | | | | | |
|--------------|-------------------------|-----|----------|-----|----------|-----|
| | Kenly | | Fountain | | Pender's | |
| | CEW | GSB | CEW | GSB | CEW | GSB |
| July 29 | - | - | 3 | 5 | - | - |
| July 31 | 1 | 0 | 2 | 6 | - | - |
| August 2 | 5 | 0 | 42 | 4 | - | - |
| August 5 | 7 | 0 | 33 | 2 | 0 | 0 |
| August 7 | 7 | 1 | 32 | 5 | 0 | 0 |
| August 9 | 8 | 11 | 32 | 16 | 1 | 3 |
| August 12 | 3 | 3 | 35 | 11 | 7 | 0 |
| August 14 | 1 | 1 | 15 | 5 | 17 | 1 |
| August 16 | 4 | 0 | 10 | 1 | 32 | 2 |
| August 19 | 2 | 1 | 15 | 3 | 37 | 2 |
| August 21 | 0 | 0 | 10 | 7 | 15 | 0 |
| August 23 | 0 | 1 | 9 | 0 | 7 | 0 |
| August 26 | 0 | 1 | 11 | 0 | 12 | 1 |
| August 28 | 0 | 2 | 8 | 5 | 4 | 0 |
| August 30 | 2 | 6 | 16 | 1 | 5 | 0 |
| September 2 | 3 | 3 | 1 | 10 | 3 | 1 |
| September 4 | - | - | 13 | 3 | 12 | 0 |
| September 6 | 1 | 1 | 16 | 0 | 37 | 0 |
| September 9 | 1 | 1 | 36 | 0 | 9 | 0 |
| September 11 | 3 | 0 | 26 | 1 | 20 | 0 |

| | | | | | | |
|--------------|---|---|----|---|---|---|
| September 13 | 3 | 0 | 57 | 2 | 4 | 0 |
| September 16 | - | - | 39 | 0 | - | - |
| September 18 | - | - | 22 | 0 | - | - |
| September 20 | - | - | 5 | 0 | - | - |

CEW = corn earworms; GSB = green stink bugs

Locations: Kenly, Fountain and Pender's Cross Roads
Monitored by: Norman Harrell, Barbara Smith and Adam Gardner

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.
