

# WHAT'S HAPPENING

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## Ag Health Study Results

**By Gene Burgess**

EPA has developed a new Web page that describes information that the Agricultural Health Study (AHS) is providing to EPA about the relationships between pesticide exposure and possible health effects on farmers and their families. It also discusses how EPA is using this information to improve its understanding of the potential risks of pesticides and to strengthen our regulatory programs.

The AHS began in 1993 as a collaboration among federal agencies. Designed as a large, long-term, prospective epidemiological study, the AHS collects and analyzes data on the health and work practices of licensed pesticide applicators in Iowa and North Carolina. The study focuses particularly on the farmers' exposure to 50 chemicals, including many of the most widely used pesticides. The study also collects information on other possible agricultural exposures and many lifestyle factors.

EPA intends to use the information from the AHS in its regulatory processes. As EPA scientists survey the overall AHS findings, they will consider the results of the studies in the course of regularly scheduled registration reviews (at [http://www.epa.gov/oppsrrd1/registration\\_review/](http://www.epa.gov/oppsrrd1/registration_review/)) and take appropriate regulatory action using the Agency's established public participation process. EPA's Web page is available at <http://www.epa.gov/pesticides/health/ag-health.html>.

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## Subterranean Termites Swarming: Time to Call a Professional

By Karen Vail

With all the rain that's been falling in Tennessee, it's shaping up to be a good swarm season for termites and pest management professionals, but not such a good season for homeowners. Subterranean termites, the most destructive wood-feeding insects in Tennessee, feed on cellulose that is usually obtained from wood. Termites are very important because they help recycle dead, fallen trees back into the soil. They do not easily distinguish between a dead pine tree and pine lumber; therefore, their food may be in the form of a dead tree or the wood in a house. In the United States, the cost of treating and repairing damage caused by subterranean termites has been estimated to be between 1.2 and five billion dollars a year. Subterranean termite treatment may cost more than \$1000 per residence. Besides the expense, winged termites emerging by the thousands inside one's home can be quite traumatic. The thought of termites feeding undetected in your home, for most folks the largest investment of their life, isn't too settling either.



Native subterranean termite swarmer  
Credit: R. Schreffrahn, UF

### Q: Can I treat the house myself?

A: Most people are trying to protect the largest investment of their life, so why risk damage to the house and environment by a poorly or inappropriately applied treatment by an inexperienced homeowner? Ridding a home of termites requires special skills and a pest management professional is recommended. Knowledge of building construction and termite biology and behavior, and specialized and expensive application equipment (masonry drills, pumps, large-capacity tanks, soil treatment rods and more) and access to professional termiticides are reasons why a pest management professional is needed. Professionals may use specialized detection tools, such as moisture meters, acoustic emissions detectors, microwave tools, thermal imaging, canine termite detectors (termite sniffing dogs), fiber optics and others. *"Do-it-yourself" termite baits ... sold at retail stores or bought over the internet will seldom eradicate an existing termite problem (Potter 2004b).*

### Q: How do I choose a pest control company?

A: One of the most important steps to obtaining control of a termite infestation is procuring the services of a trained and experienced pest control professional. Use the following items as a guide in selecting professional help:

- Ask for referrals from trusted acquaintances who were satisfied with their termite treatment. Call at least three of these pest control companies and ask for price quotes, the chemical to be used and how the company plans to treat your house.
- If a company conducts an inspection, ask for copies of the inspection letter and map. Keep these records.

## Subterranean Termites Swarming: Time to Call a Professional - Cont'd

- Read the contract carefully. Different options are available. Some companies will offer to re-treat if there is a failure, while others may provide an additional damage repair clause. Read both sides of a contract to understand what you are getting.
- An annual renewal fee for inspections is usually offered. It is usually a good idea to contract for this service.
- Study the bids, a description of the work to be done and details of any guarantees and then make your decision.
- Be wary of prices that seem too low. Highly specialized equipment and training is needed to control termites and a low bid may mean low quality.
- In most cases, the materials to be used for termite control are only available to a certified applicator. The certified applicator should possess a certification card and a charter number should be present on a company's truck to indicate the Tennessee Department of Agriculture has licensed the owner.

Do not feel pressured into signing a contract immediately. Termite damage occurs slowly. The amount of damage caused by taking an additional day, week, or month to make an informed decision is insignificant.

More information on termite biology and management can be found in the sources for this article:

Potter, M. 2004a. Entfact-639: Termite Baits: A Guide for Homeowners. University of Kentucky Cooperative Extension Service. <http://www.uky.edu/Agriculture/Entomology/entfacts/struct/ef639.htm>

Potter, M. 2004b. It's Termite Season. Kentucky Pest News. University of Kentucky Cooperative Extension Service. March 29, 2004 vol. 1014 [http://www.uky.edu/Agriculture/kpn/pdf/kpn\\_1014.pdf](http://www.uky.edu/Agriculture/kpn/pdf/kpn_1014.pdf)

Potter, M. 2004c. Termites, pp. 217-316. *In* A. Mallis S. Hedges [ed. dir.], Handbook of Pest Control, 9<sup>th</sup> edition, GIE media, Inc.

Potter, M. 2006. Protect Your Home from Termites. Kentucky Pest News. University of Kentucky Cooperative Extension Service. April 3, 2006 vol 1086: <http://www.uky.edu/Agriculture/kpn/kpnhome.htm>

Vail, K., H. Williams and J. Yanes. 2001. Subterranean Termite Control. The University of Tennessee Agricultural Extension Service. <http://www.utextension.utk.edu/publications/pbfiles/PB1344.pdf>

Vail, K., E.E. Burgess, and C. Pless. 2006. PB 1703 Wood-Destroying Organisms Pesticide Applicator Training Manual Licensing Category: WDO. The University of Tennessee Agricultural Extension Service. <http://eppserver.ag.utk.edu/psep/secondlevel/thirdlevel/WDO/WDOindex.htm>

## Tennessee Pest Control Board Ruling

**By Gene Burgess**

The Tennessee Pest Control Board voted on the following requirements for individuals who clean and/or process seeds for a fee and those who treat seed only:

Individuals who clean and/or process seeds for a fee -- If the individual currently holds an AGE, Agriculture Ground Equipment, license and Category 1, Agricultural Pest Control, certification, they only need to obtain a Category 4, Seed Treatment, certification. This will satisfy the legal requirement without having to obtain a special license in Seed Treatment.

Individuals who treat seed only -- They are required to obtain a certification in Category 4, Seed Treatment, and apply for a special license in Seed Treatment.

## TDA @School Attendance Registration

**By Gene Burgess**

The Tennessee Department of Agriculture now has a @School attendance registration online for pesticide applicators attending meetings for points. It allows you to register your school's attendees live, via the internet and automatically generates the paper form, which is sent to TDA. You need an internet-connected computer and a printer at your school's registration desk. Your secure login and password is sent to you from TDA with the confirmation letter of your point assignment. To use the @School system, point your computer's browser to <http://agriculture.state.tn.us/atschool/default.aspx>

This will not replace the sign-in and reporting Extension is doing on SUPER for recertification points. We will continue to use SUPER when sending the Commercial Applicator Recertification Rosters to TDA.

## Weevils in Alfalfa

By Russ Patrick



Weevil Damage

Alfalfa weevils have been poking their heads out. Steve Burgess reported infestations of alfalfa weevils in Carroll County this week. What stage will you find at this time of year? Larval. Can they damage the plants to yield losses? Yes, they can. Treatment should be made if 50% of the terminals are infested with alfalfa weevils. Warrior, Mustang Max or Sevin XLR may be used for control. Remember, read the label prior to purchase or application of any product.



Alfalfa Weevil Larva



Alfalfa Weevil Adult

## New Insecticides for Controlling Vegetable Pests

**By Frank A. Hale**

Things are quickly changing in pesticide chemistry. There is a financial incentive for agrochemical companies to produce pesticides that are safer to beneficial organisms, wildlife, people and the environment. If a product being developed is determined by the EPA to have a very favorable toxicological profile and meet certain criteria, it can be given a Reduced-risk status. This can easily speed up the registration time by a year. Getting a product to market a year earlier saves the company money and allows the company to get a jump on the competition. Before a profit is made, the company must make back the cost of development that could exceed \$70 million.

While older chemistries of insecticides are relatively inexpensive and have provided a good level of broad spectrum control over the years, there are good reasons to integrate these new products into your vegetable pest control program. One of the primary reasons is the improved control possible for hard to control pests such as Colorado potato beetle, leaf-miners, thrips, whiteflies, and the various armyworms. Many of the new products are more specific in what they control and tend to be easier on beneficial arthropods (insects, spiders, mites etc.). This conservation of beneficial arthropods allows for a certain level of natural control.

Many of these new insecticides primarily target lepidopterous caterpillars (moth, butterfly, skipper). One example of a very specific insecticide is methoxyfenozide (Intrepid 2F). This product has virtually no effect on any Order of insects or other arthropods except Lepidoptera. This conservation of beneficial arthropods makes it an ideal tool for integrated pest management. Intrepid 2F is in the Diacythiazine Class of insecticides and has been placed in the mode of action (MOA) Group 18, Biopesticide Insect Growth Regulators. Feeding typically ceases within hours of ingestion and within several days, lepidopterous caterpillars undergo an incomplete and developmentally lethal premature molt. This insecticide is recommended for control of a number of pests in the 2009 Southeastern U.S. Vegetable Crop Handbook. On tomatoes alone, Intrepid 2F is recommended for control of armyworm, cabbage looper, hornworms, tomato fruitworm (same as corn earworm and cotton bollworm), tomato and pinworm.

Another insecticide of note is indoxacarb (Avaunt 30 WDG). It is in the new Oxidiazine Class of insecticides and is placed in the novel MOA Group 22 A, Voltage-dependent Sodium Channel Blockers. This MOA blocks the movement of sodium ions into certain nerve cell ion channels, resulting in paralysis and death of the pest species. It is a Reduced-risk pesticide with minimal impact on beneficial insects and mites.

## New Insecticides for Controlling Vegetable Pests - Cont'd

The insecticide spinosad (SpinTor 2SC) is in the Spinosyn Class and MOA Group 5, Nicotine Acetylcholine Receptor Agonists. It is labeled for control or suppression of lepidopterous caterpillars, leafminers, and thrips. It is currently labeled for asparagus, cole crops, corn, cucurbits, fruiting vegetables, leafy vegetables, and other listed crops. It is soft on most beneficial parasitoid and predaceous insects. Spinetoram (Radiant) is the newest insecticide in the Spinosyn Class. Radiant is more effective (thrips etc.) and the residual control last a few days longer than SpinTor. While Radiant is replacing SpinTor in the 2009 Handbook, SpinTor is still a good insecticide and cost less.

A new Class of Insecticides, the Anthranilic Diamides, is represented by chlorantraniliprole or rynaxypyr (Coragen). It has a novel MOA (Group 28, Ryanodine Receptor Modulators). It has contact activity but is most effective through ingestion of treated plant material. It also conserves certain beneficial arthropods. Coragen can be applied to the soil (drip chemigation) for systemic root uptake or sprayed on the foliage where it exhibits translaminar movement throughout the leaves. It is labeled for use on Brassica (cole crop) leafy vegetables, cucurbit vegetables, fruiting vegetables, and non-brassica leafy vegetables. Coragen is labeled for many lepidopteran caterpillars including the difficult to control diamondback moth, various armyworms, Colorado potato beetle, *Liriomyza* sp. leafminers (suppression only of two listed species) and suppression of silverleaf whitefly nymphs.

Flubendiamide (Synapse WG) is in the same insecticide class and MOA group as Coragen. It is labeled for control of lepidopteran caterpillars only, is easy on beneficial arthropods, provides a good residual (10-11 days) and has a one day pre-harvest interval on cucurbit vegetables, fruiting vegetables, leafy vegetables, and Brassica (cole) leafy vegetables. Spray coverage is important and for chemigation, it should only be used through sprinkler type irrigations systems, including center pivot, lateral move, side roll, or overhead solid set.

Novaluron (Rimon 0.83 EC) is in MOA Group 15, Benzoyl Urea Insect Growth Regulator. It is labeled on apples, potatoes, sweet potatoes, and head and stem Brassica vegetables. Vegetable pests listed for control include various lepidopterous caterpillars, Colorado potato beetle, and suppression of whiteflies, lygus bugs, stink bugs, thrips, and vegetable weevil.

Emamectin benzoate (Proclaim 5 WDG) is in MOA Group 6, Chloride Channel Activators; interferes with the GABA nerve receptor of insects. It is a semi-synthetic second generation avermectin insecticide with no documented cases of cross-resistance with other insecticide classes. Unlike the other mentioned insecticides, it is a Restricted Use Pesticide. It is a selective insecticide for listed lepidopterous caterpillars on fruiting vegetables (not cucurbits), Brassica (cole) leafy vegetables, and leafy vegetables (except Brassica).

## Stored Grain: Bags and Upright Metal Bins

**By Russ Patrick**

A number of growers will be using grain bins this year as they did in 2008 to store their wheat and corn. If you have any grain stored at this time, please turn on the aeration fans and cool down the grain mass. Cooling, reduces moisture levels, therefore reducing mold and insect infestation.



Indian meal moth larvae

In bag tests we conducted earlier this year, the treated bags were all offloaded to market and sold with no insect problems. These were previously treated with Storcide II and some were treated with Diacon II.

Producers have a choice among three insecticides that may be mixed together. These include Crop Spray or Pyrenon which may be mixed with any of the other stored grain insecticides.

Red flourbeetles are difficult to control, however Storcide II mixed with Crop Spray should provide adequate control.

For the Storcide II label, please visit: [http://](http://www.agrian.com/pdfs/Storcide_II_Grain_Bin_And_Warehouse_Insecticide_(070505_Notification_120805)_Label.pdf)

[www.agrian.com/pdfs/Storcide\\_II\\_Grain\\_Bin\\_And\\_Warehouse\\_Insecticide\\_\(070505\\_Notification\\_120805\)\\_Label.pdf](http://www.agrian.com/pdfs/Storcide_II_Grain_Bin_And_Warehouse_Insecticide_(070505_Notification_120805)_Label.pdf)

For the Crop Spray, please visit: <http://www.fightthebite.net/download/labels/pyronyl.pdf>

For the Diacon II, please visit: <http://www.entech.cc/diacon.pdf>



Checking for temperature and moisture in wheat bags

## Improving Cotton Stands

**By Melvin Newman**

Adverse weather at planting time makes it more likely that seedling disease pathogens will infect germinating seed and roots. As a result, the loss from seedling disease can be significant. Of course, we cannot do anything about the weather. However, there are things that can be done now and at planting time to reduce the risk of replanting and yield loss. Knowledge of all the factors that prevent damage from seedling disease can help increase profit. In Tennessee, research and demonstrations have shown an average increase in profit of more than \$100 per acre from the use of seedling disease control methods.

**Some practices that producers should do before planting:**

- (1) Obtain planting seed with the highest *cold germination* possible. The cold germ test is better than the usual warm germination test for determining the vigor of a seed lot. The cold germination test will vary from year to year depending on the conditions at harvest, but time and money spent on finding the best seed will pay big dividends. Producers should try to get at least 65-75% cold test germination on the seed lot that they will be using. Some cotton varieties may have better seedling vigor than others. The higher the cold germ the better.
- (2) Producers should check the fungicide *seed treatment* already present on the seed that they might be purchasing. In most cases, there is nothing that a producer can do about the fungicides on the seed, but might help the producer decide if there is a need for additional seed treatments (overcoat treatment or hopper-box) or to what degree the producer might use an in-furrow fungicide
- (3) *Soil fertility* can play a big factor in seedling diseases. In general, there will be less damage from seedling disease if the available potash level is high or very high. In addition, acid soil is conducive to more seedling disease. Most agronomists suggest a soil pH of about 6-6.5.
- (4) Cotton *nematodes* can also cause additional stress and induce more seedling disease. Producers should sample their fields just after harvest for the presence of Reniform or Root-knot nematode. If nematodes are found, either rotation with corn or grain sorghum or use of a nematicide should be considered. If nematicides are called for, producers should gear-up ahead of planting time so that the planting operation is not slowed down. Fumigant nematicides require bedding-up and usually a two-week waiting period before planting. Granular nematicides can be applied in-furrow at planting time and are fairly easy to use. A one-year rotation with a non-host crop like corn will reduce Reniform nematodes to a much lower level, but they can build back up in just one season when cotton is planted back.

**At planting practices:**

- (1) *Soil temperature* at planting time is extremely important. Cotton seeds germinate and grow off much better at 65-68 degrees or higher. Low soil temperatures create conditions that will slow seed germination and seedling emergence, thus extending

## Improving Cotton Stands - Cont'd

the vulnerable period for infection. Many soil-borne pathogens are active at lower temperatures.

- (2) *Soil moisture* is almost as important as temperature. When soils are saturated with moisture for prolonged periods, seeds and seedlings are adversely affected. These conditions are ideal for the growth of several soil pathogens. Producers wanting to plant early in cold, wet soil might find themselves in a much worse situation than if they had just waited for better conditions. A favorable 5-day forecast could be of great value when considering a planting date.
- (3) The *disease history* of each field should be evaluated to determine if it has had a stand-establishment problem. Factors such as *soil-type, poor drainage, low soil pH, and low organic matter may cause seedling disease* to be more severe.
- (4) In many cases, the use of a *soil-fungicide* or an additional seed treatment can reduce seedling diseases significantly and improve over-all yield. *Rhizoctonia* is the most common pathogen in most cotton fields but *Pythium* can be a problem when soils are cold and wet. Care should be taken to choose the right fungicide for the situation. Generally, it is a good practice to use an in-furrow fungicide that will prevent damage from both types of fungi. But, many times as the soils warms up later in the planting season the *Pythium* fungicides can be reduced or completely eliminated from the in-furrow treatment. *Rhizoctonia* on the other hand can hit seedlings under almost any conditions. When producers use a systemic insecticide seed treatment or a granular nematicide, they also need an in-furrow fungicide to protect from diseases and from the possibility of phytotoxicity to the young plants. Seedlings with healthy roots are better able to utilize insecticides and nematicides and can better metabolize soil-applied herbicides.
- (5) *Hopper-box* or overcoat fungicides are additional seed treatment fungicides that aid in germination and control of some seedling diseases. Many times when planting conditions are favorable and seed quality is good, seed treatments already on the seed or a slurry or dust treatment of a recommended fungicide will do as good as an in-furrow soil treatment. But, when planting early into cool, wet soil or when conditions turn bad, it is always better to go the extra mile and use a full rate of in-furrow fungicide.
- (6) The type of *tillage* also plays an important factor in whether to use an in-furrow fungicide. A no-till, or stale, seedbed has a tendency to be cooler and wetter early in the season than a conventional seedbed. Planting on or near the old cotton stubble may also provide a ready source of plant disease organisms. These suggestions for seedling disease control may sound like a broken record, but producers should remember the rough planting seasons that we have had in some years. A little planning and preparation on the front end of planting can go a long way in producing high yields at harvest. Once the seed is in the ground, there is little a producer can do to prevent seedling diseases. Producers should check with their local county Extension agents for more detailed recommendations. (additional information and recommendations can be found by clicking on [www.utcrops.com](http://www.utcrops.com) under [cotton diseases and nematodes](#).)

## New EPA Online Database

**By Darrell Hensley**

The Environmental Protection Agency (EPA) released a new online database known as the Aggregated Computational Toxicology Resource (ACToR) chemical database. This new database, provides information on more than 500,000 man-made chemicals from over 200 public sources and can now be accessed at <http://actor.epa.gov/actor>. The database allows access to hundreds of data sources at one website. ACToR was developed to support the ToxCast program of the EPA National Center for Computational Toxicology. ACToR was used to analyze toxicity information on almost 10,000 chemicals regulated by EPA and to identify data gaps that can be addressed by ToxCast. This will greatly help the agency prioritize future testing of chemicals. Acute toxicity data is available for 59 percent of the surveyed chemicals, detailed testing information is much more limited.

Source: <http://www.eponline.com/articles/71342/>

## Invasive Plants Field Guide

**By Darrell Hensley**

A newer full-color publication, *INVASIVE EXOTIC PLANTS OF NORTH CAROLINA*, was recently made available online. This new publication provides technical information and identification of 74 plant species found in the named region that pose varying levels of threat to wildlife habitat, natural areas, and in some cases, agriculture. The editor/compiler C. Smith has included an extensive informative text including: initial introduction and expansion in range; description and biology; habitats susceptible to invasion; and prevention and control, plus several full-color illustrations of each included species. The 2008, 189-page publication is freely available online at: <http://tinyurl.com/c83c56> and includes lists of native plants and seeds, the U.S. federal noxious weed list, references, and other information.

## New Test for Ricin Detection

**By Darrell Hensley**

Ricin is a poison found in the castor bean plant *Ricinus communis*. Castor beans are easy to grow in the south, however they can be extremely toxic to people and many animals. One major use of castor bean plants is to aid in deterring moles from garden areas. Individuals who grow castor beans generally place plants around garden areas. As the plant grows, toxins are released through the roots which inhibit insects, the major food source of moles. However another use for Castor beans could be for bioterrorism. Recently, scientists have developed a fast and super-sensitive new test for ricin. The new method, described in research recently published in *Analytical Chemistry*, takes only 3 minutes to detect ricin and is 100 to 1,000 times more sensitive than tests previously available. The new test could be packaged in a small, portable kit. Scientists reported that the test can detect one billionth of a gram of ricin, and could potentially help minimize the number of false alarms..

(Source: <http://www.sciam.com/blog/60-second-science/post.cfm?id=battling-bioterror--a-new-test-for-2009-04-13>)

## Plant & Pest Diagnostic Highlights

### By Bruce Kauffman

We received 111 samples from March 25 to April 14, 2009, including 56 samples via the UT Diagnostic Web Site.

**FRUIT & VEGETABLES :** Sun scorch and cold damage of leaves of tomato; bacterial blossom blast (*Pseudomonas syringae*) of apple, pear, and cherry; decline of apple trees due to weather-related problems; possible claybacked cutworm feeding damage to radishes and potatoes; superficial (non-fungal) fruit damage to strawberry; peach leaf curl infection of peach; viral infection and/or phenoxy herbicide injury to tomato; mite and thrips damage to tomato leaves; possible deficiency of strawberry plants; fungus gnat problem of pepper plants.

**INSECTS, CRUSTACEANS & MITES :** Possible peachtree borer damage to English laurel; wooly apple aphids and galls on apple seedling stem and roots; mite eggs on rhododendron leaves; mulberry whitefly on Foster holly leaves; dogwood borer and/or flatheaded appletree borer damage to apple; aphid and/or soft scale feeding secretions and sooty mold on Leyland cypress; hemlock borer damage to eastern hemlock following possible stress caused by hemlock woolly adelgid, elongate hemlock scale and drought; spiny witch-hazel leaf gall aphid on birch; aphids on English ivy; mite and azalea lace bug damage to azalea.

**Insects and other pests around the home :** Varied carpet beetles; carpenter ants; black springtails; fire ants; foliate orbweaver spider; cutworms (army cutworm ?); termite reproductives and workers; foreign grain beetles and/or hairy fungus beetles; bark crab spider; clover mites; female trapdoor spider; moth flies; flat and/or rusty grain beetles; ticks; American cockroaches; boxelder bugs.

**ORNAMENTALS & TREES :** Sooty mold (*Scorias spongiosa*) on aphid secretions on beech limbs; root disease of English laurel; mechanical scraping damage to rhododendron leaves; winter injury to boxwood and English laurel ('Schip' laurel) leaves; phytophthora root rot of boxwood, white redbud, 'Fire Power' and 'Gulf Stream' dwarf nandina, yew, white dogwood, Leyland cypress, 'Blue Pacific' juniper and arborvitae; possible nutrient deficiency, fungal leaf spots and possible drought branch dieback of Foster holly; botryosphaeria canker of rhododendron; root dieback of 'Encore'azalea due to over watering or under watering; possible pH problem, nutritional deficiency, poor site, poor planting job and inadequate maintenance of rhododendron; stunted tulips due to site problem and/or improper handling following purchase; drought-caused decline of magnolia; dead flowers due to possible frost damage, nutrient deficiency and/or drought stress of 'Nellie R. Stevens' holly; hypoxylon canker, a hackberry bark beetle (*Phloeotribus dentifrons* ?) and drought stress of hackberry; winter injury, possible low pH, low fertility and/or over watering or under watering effects on boxwood; possible fungal canker, root disease or weather-related dieback of kitayama cedar; anthracnose leaf spotting and blotches of English ivy leaves; alternaria leaf spot of dianthus; possible seiridium canker of Leyland cypress; morel or false morel mushrooms; possible pH problem and overly wet soil causing reddening of azalea leaves; botrytis mold and/or pH problem of geranium; rose rosette disease of rose;

## Plant & Pest Diagnostic Highlights-Cont'd

site stress of newly-planted arborvitae; root decline and decay of corkscrew willow; cedar-quince rust of 'Moonglow' juniper; possible tree stress and bark beetle attack of eastern white pine; black root rot of 'Helleri' holly; sooty mold fungi on maple trunk.

**SMALL GRAINS** : Fertility and/or double application of herbicide causing leaf tip yellowing of wheat.

**TURF & FORAGES** : Aeration and percolation problems with a thick organic layer in 'Dominant Plus' Bentgrass; rhizoctonia and pythium foliar diseases of 'Penncross' creeping bentgrass; ganoderma root rot fungus present in lawn on buried woody material.

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**OTHER UT NEWSLETTERS WITH PEST MANAGEMENT INFORMATION**

**Fruit Pest News**

<http://web.utk.edu/~extepp/fpn/fpn.htm>

**Tennessee Crop and Pest Management Newsletter**

[http://www.utextension.utk.edu/fieldCrops/cotton/cotton\\_insects/ipmnewsletters.htm](http://www.utextension.utk.edu/fieldCrops/cotton/cotton_insects/ipmnewsletters.htm)

**Ornamental Pest and Disease Update**

<http://soilplantandpest.utk.edu/publications/ornamentalnwsltr.html>

**School IPM Newsletter**

<http://schoolipm.utk.edu>

**Tennessee Soybean Rust Hotline - 877-875-2326**

**USDA Soybean Rust Web Site**

<http://www.sbrusa.net>

**This and other "What's Happening" issues can be found at**

<http://eppserver.ag.utk.edu/Whats/whatshap.htm>

**Entomology and Plant Pathology Web Site**

<http://eppserver.ag.utk.edu>

**Precautionary Statement**

To protect people and the environment, pesticides should be used safely. This is everyone's responsibility, especially the user. Read and follow label directions carefully before you buy, mix, apply, store or dispose of a pesticide. According to laws regulating pesticides, they must be used only as directed by the label.

**Disclaimer**

This publication contains pesticide recommendations that are subject to change at any time. The recommendations in this publication are provided only as a guide. It is always the pesticide applicator's responsibility, by law, to read and follow all current label directions for the specific pesticide being used. The label always takes precedence over the recommendations found in this publication.

Use of trade or brand names in this publication is for clarity and information; it does not imply approval of the product to the exclusion of others that may be of similar, suitable composition, nor does it guarantee or warrant the standard of the product. The author(s), the University of Tennessee Institute of Agriculture and University of Tennessee Extension assume no liability resulting from the use of these recommendations.

Programs in agriculture and natural resources, 4-H youth development, family and consumer sciences, and resource development. University of Tennessee Institute of Agriculture, U.S. Department of Agriculture and county governments cooperating. UT Extension provides equal opportunities in programs and employment.