

WHAT'S HAPPENING

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ENTOMOLOGY AND PLANT PATHOLOGY

Pasture Pests

By Russ Patrick

Grasshoppers and armyworms are being seen in a number of pastures across the state. One producer treated his pasture for grasshoppers but did not get any control. So I recommended the use of Mustang Max at the 4 ounce rate per acre with a non-ionic surfactant. This should provide good control. Keep an eye out for armyworms in pastures and bermuda grass fields. The fall armyworm may be transported up from the south on winds strong enough to bring them to our state. Fall armyworms can strip the foliage in pastures quite rapidly, so keep a close watch this time of the year.



Time to Pest-Proof Your House to Prevent Insects from Invading!

By Karen M. Vail

As we approach fall and temperature and day length start to decline, insects perceive stimuli to search for overwintering sites. For Multicolored Asian Lady Beetles (MALB), the stimuli to fly en masse for an overwintering site, your home, usually involves a dramatic drop in temperature, usually to near freezing, followed by a day or two when temperatures are greater the 65 degrees F. In 2004, the MALB invasion started on October 6th in Minnesota and occurred around October 20th in Knoxville. In subsequent years, we didn't experience a major MALB flight in Tennessee. In 2005, the peak flight never occurred. In 2006, the swarm was probably delayed because of the

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mild temperatures through mid-November followed by cold temperatures from mid-November to December. It just didn't get cold enough to trigger the swarm before temperatures turned too cold for the swarm to occur. Because we can't predict whether the beetles will perceive the correct stimuli to trigger a peak MALB flight, it is best to prepare for and prevent the MALB invasion into the home.

Management

Conduct Steps 1 through 3 by late September/early October, before MALB start their invasion.

1. Pest-Proof: seal entry points, keep window screens intact, screen vent openings, etc., before the beetles arrive. See our UT Extension SP 503C **Lady Beetles Invading Homes**, <http://www.utextension.utk.edu/publications/spfiles/sp503c.pdf>, PB1303 **Managing Pests Around the Home** <http://www.utextension.utk.edu/publications/pbfiles/pb1303.pdf> or University of Kentucky Cooperative Extension Service **How to Pest-Proof Your Home** <http://www.ca.uky.edu/entomology/entfacts/ef641.asp> for more specific recommendations on sealing entry points.

2. Research from North Carolina revealed that it is **vertical contrast**, such as black shutters against light colored walls, shadows cast by a chimney, white shutters against a dark background, that attracts MALB. Color of the house will not matter in attractiveness to the beetle. **If possible**, reduce vertical contrast on or near the structure.

3. Treat roof lines or soffits, vertical contrast areas, and entry points (**around** the following outdoor items: windows, doors, vents, pipe penetrations) with pesticides before the beetles arrive. According to Ohio State University results, professional products such as Demand CS (lambda-cyhalothrin), Suspend (deltamethrin) or Talstar (bifenthrin) provided 96, 95, and 84% effectiveness at 3 weeks post-treatment, respectively, when applied to vinyl siding. Products available to homeowners, such as Terro Ant Killer (0.2% permethrin w/PBO) and Bayer Advanced Home (0.1% cyfluthrin) provided 96 and 92% effectiveness at 3 weeks post-treatment. Retreatment in 3 weeks may be necessary, especially if beetles have not invaded yet and if rain has been common.

While camphor and menthol may be repellent to lady beetles, more research is needed to make the formulations last longer. Camphor cakes or crystallized camphor can be put in a knee-hi nylon stocking, the stocking knotted and hung outside of the house near known entry points; or cotton balls containing a few drops of camphor essential oil can be placed in the corner of the windows, but the oil will need frequent re-application (<http://ipm.osu.edu/lady/methods.htm>).

4. Remove dead beetles as they pile up because they may cause other MALB to aggregate.

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5. If the beetles make their way into the home, vacuum or try a light trap (see description below). Insert a knee-high nylon stocking into the extension hose or wand of a vacuum or dry vac and secure the stocking with a rubber band (see <http://ohioline.osu.edu/hse-fact/1030.html>). When the vacuum is turned off, remove the stocking so the rubber band will close around it, thus catching the lady beetles. You can then discard the contents of the stocking. Use a vacuum with a HEPA filter to prevent allergens from becoming airborne.

Refrain from using foggers indoors because they will not kill the majority of lady beetles which are hidden, they increase your exposure to insecticides unnecessarily and could supply dermestid beetles (carpet beetles, larder beetles) and other scavengers with food.

Trap Updates from Ohio State University (OSU). Commercial black light traps caught 90% of the lady beetles released into an OSU study room. The manufacturer, Southeastern Insectaries, (877-967-6777 or 478-988-9412, 478-988-9413(fax), sei@alltel.net, <http://southeasterninsectaries.com/photo5.html>) has upgraded its **indoor** light traps and suggests the traps are most effective when they doesn't compete with sunlight and, to a lesser degree, other light sources. Thus, they are best operated during the night with no or limited competing light sources or in dark spaces such as attics or crawl spaces. These traps are mobile and should be moved to the rooms with the most beetle activity. If the beetles can't see the light, it won't work. **The trap works better when the room is warm, about 75-85 degrees F. Temperatures around 68 degrees F will trap less beetles.** The manufacturer claims the traps are useful through all three nuisance periods — when the beetles are trying to enter the house, when they become active on warm winter days and when they are trying to leave the house in the spring. Cost of these light traps has decreased recently to about \$83 (180 degree trap) and \$99 (360 degree trap). These traps are **NOT** intended for outdoor use!

The OSU IPM Staff developed an inexpensive trapping device for use in homes. In their tests, the homemade trap caught about 70% of the released beetles in a room. During a presentation, Dr. Joe Kovach, OSU, mentioned that an incandescent bulb worked as well as a black light tube, but a black light incandescent bulb was not very effective. The homemade trap worked better if the funnel and collecting container (both plastic milk jugs) were painted black and dusted with talc. A descriptions of the homemade light trap listed above can be found at <http://ipm.osu.edu/lady/Lighttraps.htm> .

Sources:

Jones, S.C. and J. Boggs. 2001. HSE-1030-01 Multicolored Asian Lady Beetle. Ohio State University Extension. <http://ohioline.osu.edu/hse-fact/1030.html>

The Ohio State University Web Site, Multicolored Asian Lady Beetle
<http://ipm.osu.edu/lady/lady.htm>

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Suggested Treatment Method for the Multi-Colored Asian Lady Beetle (MALB). The Ohio State University Integrated Pest Management Program.

<http://ipm.osu.edu/lady/methods.htm>

Vail, K. 2004. Lady Beetle Update Spring 2004 - "The Game Is Won or Lost in October". In "What's Happening?" University of Tennessee Extension, Entomology & Plant Pathology - EPP #60, Volume No. 1 - March 5, 2004. <http://web.utk.edu/~extepp/whats/wh2004/Volume-1-04>

Corn

By Russ Patrick

I have been getting numerous calls about grain storage this season. Not only corn but wheat as well. We use the SLAM method for storage which means Sanitation, Loading, Aeration and Monitoring. If you don't use this method you will more than likely have insects infesting the grain. I would apply an insecticide to the inside and outer areas of the grain bin. Treat the wall, flooring and outside with Tempo SC Ultra. This is the best product we can use on an empty bin. Then use a grain protectant such as Crop Spray which contains pyrethrin. Actellic 5E can also be used but at a cost of 800 dollars per gallon may not be economically feasible. You can treat about 3500 bushels per gallon of Actellic 5E. The rate is 12 oz of Actellic in 5 gallons of water mixture per 1,000 bushels of corn.



This photo is of peaked grain which is not recommended.

When loading the grain please do not peak or mound the grain. This causes uneven aeration when you need it most. After filling the bin, monitor it every two weeks. With prices as high this year for corn, you cannot afford to feed it to the insects. Results from wheat bins used as demonstrations this year have shown that the use of Storcide II has done an outstanding job of preventing insects from damaging grain. We have about 15 demonstrations in three counties (Fayette, Haywood, Lake and Crockett) There have been no insects invading the grain. The baggies (7500 bushels) were treated with Storcide II as well and the insecticide have performed well.

A Massive Weed Identification Tool Developed in Australia

By Darrell Hensley

ENVIRONMENTAL WEEDS OF AUSTRALIA, was recently published by the Center for Biological Information Technology (CBIT) at Australia's Univ. of Queensland. This new tool which uses Logical User-Centered Interactive Design Methodology (LUCID). It takes aim at the problem by providing a massive visual-plus-text database of more than 1,000 plant species, and is intended to serve as a comprehensive tool for improving identification of weed infestations as needed to apply effective management methods. The interactive resource, on DVD, was compiled by S. Navie and S. Adkins and developed by the former Cooperative Research Centre for Australian Weed Management together with CBIT. It offers: detailed descriptions of weed species; links to website information; a search engine; a detailed cross-linked glossary; and loads of full color images. Visit:

<http://www.cbit.uq.edu.au/software/envioweeds> for more information.

Revised Comprehensive Pesticide Reference

By Darrell Hensley

The 14th edition of The Pesticide Manual has been completely revised and updated. This latest hard copy contains 881 main entries (38 new items, including 21 new molecules, 9 substances not previously listed, and 7 additional pheromones), plus well over 600 abbreviated entries for superseded products containing 1,360+ pages. Main entries for currently registered substances include nomenclature, chemical structure, commercial history, mode of action, toxicology, commercialization, applications, environmental fate, and more, varying in scope depending on the product. As with previous editions, the editor offers an unsurpassed reference in this most recent (late 2006) hard cover world compendium. The volume, said to contain "the most comprehensive information on active ingredients for control of crop pests in the world" includes a directory of companies. A handy page tabbing system aids navigation through the hefty volume. At the website <http://tinyurl.com/5t3ymq> interested viewers can click to view a sample of selected main entries. The notable manual is also available as a PC-CD ROM.

Plant Disease Management Report

By Darrell Hensley

The 2nd volume of the PLANT DISEASE MANAGEMENT REPORTS for 2008 offers well over 500 searchable one-, or two-page reports discussing the effectiveness of fungicides and nematicides, resistant (plant) varieties, and other biocontrols that defend against crop (field and horticultural) diseases. Each individual report provides a summary outlining trial conditions and results, plus trial data such as treatment rates, application timing, and observed efficacy of tested products. The compilation, published by Plant Management Network, and

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may be found at <http://tinyurl.com/5rh5ck>. This publication is said to be the basis for many recommended disease management practices and pest management decisions. Yes, it is what your extension plant pathologists use. The material found in this publication can be searched by keyword or section: the latter includes cereal and forage crops; citrus, tropical, and vegetable crops; field crops; ornamentals and trees; pome fruits; small fruits; stone fruits and nuts; turfgrass; and seed treatments for all crops.

35th Annual Tennessee Entomological Society Meeting Keynote Address, "Hemlock Woolly Adelgid - What We Have Learned."

By Karen M. Vail

You are invited to attend the Thirty-fifth Annual Meeting of the Tennessee Entomological Society (TES) to be held on October 9 and 10, 2008, at the Tennessee Department of Agriculture's Ellington Agricultural Center in Nashville, Tennessee. The meeting will be held in the TWRA Region II Office Building Conference Room.

Registration begins at 1:00 p.m. on Thursday, October 11 and the meeting opens at 1:30 p.m. with the keynote address given by **James "Rusty" Rhea**, US Forest Service, Asheville, NC. The title of his presentation is "Hemlock Woolly Adelgid - What We Have Learned." The keynote address will be followed by the student paper competition and regular contributed papers.

The meeting will resume about 8 am Friday with the TES Annual Business Meeting followed by more contributed papers. You won't want to miss the annual business meeting - that's when we announce the award winners and distribute the checks!

The registration fee is \$20 for regular members and \$1 for students (including student membership dues). A single day attendance fee is \$10. Membership dues are \$5 for regular members and \$25 for sustaining/corporate members.

Gene Burgess will assign pesticide recertification points once the program is finalized. If you're short a few points, this is an inexpensive way to obtain them.

Please remember the deadline for submission of titles is September 19, 2008 and to check the TES web page <http://eppserver.ag.utk.edu/tennentsociety/default.html> for upcoming meeting information and other TES news updates. Currently, the web site has been updated except for the program which won't be updated until sometime after September 19.

Nantucket Pine Tip Moth Control

By Darrell Hensley and Frank Hale

The Nantucket pine tip moth (*Rhyacionia frustrana*) is the most common pine pest in the Southeastern United States and causes significant damage to loblolly pine plantations. Tip moth larvae attack the developing shoots of young pines, slowing growth and causing stunting and stem deformation. Heavy tip moth infestations cause forks, crooks or multiple trunks, which devalues production timber. Young trees, particularly seedlings or saplings younger than five years old, typically receive the most damage from tip moths. Loblolly, shortleaf and Virginia pines are the most susceptible species to pine tip moths in Southern forests.

Research by the University of Georgia and International Paper showed that controlling pine tip moth in the first years after pine establishment results in substantial long-term growth gains and significantly better form

For control in forest stands, preventive measures such as planting more than one tree species, diversifying stand structure, fertilization, and weed control may help keep tip moth populations down.

Chemical control is a last resort and is usually only economically feasible in cases where damage is especially severe and unit value of trees is high (ie. seed orchards and Christmas tree plantations). Effective use of pesticides is dependent on precise timing for spraying, which should be carried out after eggs are laid up until second instar larvae are present. Pheromone-baited traps may be used to determine time of spraying. In Georgia, foresters spray ten days after the first adult moth is captured in pheromone traps. This should be repeated for each generation. Research by Haugen and Stephen (1984) on tip moth development in relation to temperature may be of some benefit for those who intend on controlling this pest.

Foliar applications of pesticides can provide good control and is relatively inexpensive. Use of biological insecticides, such as viruses or bacteria may also be feasible. There is potential in the future for control by disrupting adult communication and mating using synthetic pheromone components.

Now forest landowners have a new tool to prevent the spread of Nantucket pine tip moth and pine bark aphids. With full label approval from the Environmental Protection Agency, PTM™, an insecticide from BASF, is significant because it is the first insecticide that is effective for up to two years with only one treatment.

BASF's new product is a low-volume insecticide that should be applied during or shortly after planting for maximum protection. It is applied at 21 fluid oz (621 ml) per acre or 1.4 ml per tree. PTM is mixed with water and 0.5 fluid oz of the mixture is injected into the soil at least three inches below ground into the rooting zone of each tree. The insecticide is

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absorbed through the roots of young pines and kills tip moth larvae as they forage on the pine needles and shoots.

For more information on PTM, please visit www.vmanswers.com or contact your local BASF sales representative at 1-800-545-9525.

References:

Haugen, D.A. and F.M. Stephen. 1984. Development rates of Nantucket pine tip moth, *Rhyacionia frustrana* (Comstock) (Lepidoptera: Tortricidae), life stages in relation to temperature. *Environ. Entomol.* 13:56-60.

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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

Ornamental Pest and Disease Update

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

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.

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