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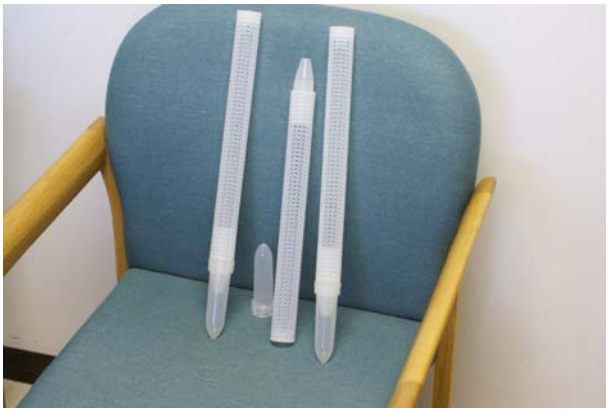
Stored Grain

By Russ Patrick

Presently, a lot of wheat has been harvested and stored. Turn on the fans and cool down the grain as soon as possible. Now is a good time to aerate the grain mass. Make sure the mass is level, so you will be able to completely air it out. It is time to put the insect grain probe detectors in the grain. It is best to use approximately three of the probes per bin. You can purchase probes from Great Lakes IPM. A pack of three cells costs $24 dollars. They are especially effective during this time of the year. When the mass is below 50F, insects do not move through the grain as they do when its warm or hot.



Corn and Insects

By Russ Patrick

A corn field was scouted in Fayette County. One southwestern corn borer larva was found.

This corn was approximately waist high. Corn earworms were also found, but small in numbers. In this situation, the corn borer may cause the bigger problem. If this field had been a Bt variety, the larva would have been dead. A few grasshoppers were observed, but they were not damaging the corn.

A few southwestern corn borers were found in corn in East Tennessee.

Note: There was a mistake in ISSUE 9. The photo labeled sugar cane beetle was incorrect. It was the southwestern corn borer. This mistake has been corrected on the web archive.

Inside this issue:

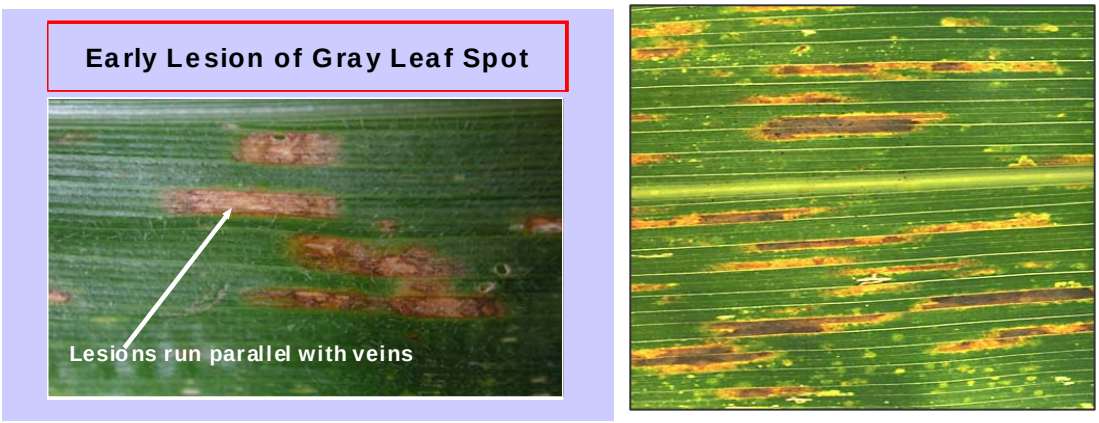
Tips for using Foliar Fungicides on Corn in 2008

By Melvin Newman, Ph.D.

Many corn producers are considering spraying their corn with a fungicide to control diseases. This interest has been spurred by higher corn prices, increase in gray leaf spot disease and favorable research at the Research and Education Center at Milan. Of course, not every corn field should be sprayed. If there is no disease or very little disease, the response will not be very great. On the other hand, if the disease potential is high, more increase can be expected compared to untreated corn. The more disease causing-factors that are present, the more likely a fungicide will increase yields.

The following are some important factors to consider:

1. Susceptibility of the corn Hybrid to gray leaf spot (none are totally resistant to all leaf diseases) is very important.
2. Continuous corn increases disease potential.
3. Tillage practices (no-till) that leave corn residues on the surface of the ground will increase disease potential. However, conventional tillage may also promote foliar disease, especially if fields are not rotated with other crops.
4. Later plantings tend to have more disease.
5. Irrigation will provide essential moisture for diseases to develop.
6. Dry weather before and after tassel will reduce disease development.
7. Periods of rainy weather throughout the growing season will increase the likelihood and severity of disease.
8. Severe gray leaf spot will weaken the stalks and may result in increased lodging.



Which fungicides should producers use? The strobilurin fungicides have given the best yield increases in research plots. Headline (pyraclostrobin), Quadris (azoxystrobin) and Quilt (azoxystrobin + propiconazole) have been tested and have given significant disease control and higher yields. Stratego (trifloxystrobin + propiconazole) is cleared for corn disease control, but we have not yet put it in our tests. A tank mix combination of a strobilurin fungicide and a triazole fungicide (Tilt) in a pre-mix (Quilt or Stratego) would be recommended when Southern Rust is expected to be a problem.

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When is the most effective time to spray a fungicide? For several years, research has demonstrated that corn should be sprayed just at the tasseling stage. If sprayed before tassel or later, when corn is in full silk, disease control and yield tend to drop off. If silks have turned brown, very little increase in yield may result.

How should the fungicide be applied? Most corn is too tall at tassel to be sprayed with a high cycle sprayer, so many will use aerial application. However, some ground sprayers are big enough and may cause very little damage.

How much water should be applied? For best disease control aerial applicators should use at least 5 gallons of water per acre with a fungicide adjuvant or COC. Ground applicators should use 15-20 gallons of water per acre with a fungicide adjuvant or COC. Nozzles that give smaller droplets in the range of 300 microns will give better coverage.

Fungus Among Us

By Darrell Hensley

Ganoderma is a type of mushroom, which is also referred to as Reishi. It has been well used and documented and has been reported to be used as a medicinal treatment throughout China for over many years. The Chinese refer to Ganoderma as “spirit medicine”. It has been used in the orient to promote longevity. In ancient times, this mushroom was reserved for the Kings, as it was relatively rare and hard to find. Reishi is used as an overall health tonic to treat many different ailments ranging from stress-related conditions to fatigue and sleep disorders. While it is great for people who suffer from any form of stress anxieties, the mushroom itself may be considered a miracle worker. However, for others it is an eyesore and many individuals become concerned when they see it growing from their favorite shade tree. Generally, the mushroom is observed after the tree has received severe damage or is dying. There are several species of Ganoderma mushrooms. Some Ganoderma species (such as *G. resinaceum*) are commonly found growing on partially dying or dead and decaying hardwood trees, usually forming a shelf type mushroom. Both species have a reddish-varnish-or lacquer-like coated spore forming structure.

I believe this is *Ganoderma lucidium* because of the distinctive stalk which is a common characteristic of this species.

This specimen was found in a crawl space of a house in West Knoxville.

This is a photo of shelf type Ganoderma observed on honey locust

Last Chance to Register for the Cogongrass Workshop

By Beth Long

A Cogongrass Identification Workshop will be held on Tuesday, July 22, 2008, from 10 a.m. to 2:30 p.m., located at the Ed Jones Auditorium at the Ellington Agricultural Center in Nashville. The Tennessee Exotic Pest Plant Council is organizing the workshop.

Dr. Dave Moorhead of the University of Georgia Warnell School of Forest Resources will be conducting the training. Training will include a brief introduction to cogongrass, plant identification, control treatments, equipment sanitation and inter-agency agreements.

Those working on the southern border of Tennessee are especially encouraged to attend. Extension personnel travel costs will be covered through a grant by Beth Long.

There is no registration fee, but you **must pre-register by July 1**. Call or email Anni Self at Anni.Self@state.tn.us or 615-837-5313 by July 1 to register for the workshop. Lunch will be provided!

Millipedes-Those Little Brown "Worms"

By Karen Vail

Image credit: M. Waldvogel,

Millipedes or "thousand-leggers" are not insects and belong to a class of arthropods called Diplopoda. Millipedes are worm-like, cylindrical animals with many body segments. Most of their body segments bear two pairs of legs, unlike centipedes which have only one pair of legs per body segment. Millipedes will coil up tightly when disturbed and some species secrete a foul-smelling fluid to protect themselves. Female millipedes can lay from 20 to 300 eggs singularly or in clusters in the soil. The eggs hatch in a few weeks, and the young molt seven to eight times before maturing to adults.

Image credit: M. Waldvogel, NCSU

Millipedes feed on decaying vegetable matter and are often found under stones, flower pots, heavily mulched shrub or flower beds, rotting logs, boards or similar debris where there is abundant moisture. Occasionally after rains, or during hot and dry weather or prior to cold weather, large numbers of millipedes may migrate into buildings. They can climb foundation walls and enter houses through any small opening. These pests are generally more troublesome in wooded or newly developed areas where decaying vegetation provides excellent food and breeding conditions.

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Management

Reducing Moisture and Removing Debris - A large indoor population usually indicates large numbers of millipedes or centipedes surrounding the structure. The most effective, long-term measure for reducing entry of millipedes and many other occasional invaders is to reduce moisture and hiding places near the foundation and to pest-proof the structure.

One study reported reducing millipede invasions into a structure by 93 percent using non-chemical procedures. Several techniques were used to reduce moisture levels in the lawn and areas surrounding the structure:

- lawns were dethatched,
- lawns were closely mowed and edged to allow it to dry more quickly,
- debris and mulch were pulled away from the structure to reduce hiding places, and
- grass was watered early in the morning to allow it to dry out later in the day.

There are other ways to reduce moisture and debris around structures.

- Move leaves, grass clippings and compost piles away from the structure because they provide food and habitat.
- Boards and rocks provide protection and moisture and should be moved away too.
- Prune tree limbs to increase air movement and sunlight penetration which dries their habitat.
- Make sure water drains away from the foundation and that down spouts and gutters are free of debris.
- Repair water spigots and prevent water from accumulating under drip lines from air-conditioning units.
- Reduce moisture in crawl spaces by adequately ventilating, and using polyethylene soil covers, dehumidifiers, drainage systems, sump pumps, etc.

Pest-Proofing

- Seal cracks and openings in foundation walls, doors and windows, especially basement windows.
- Install door sweeps on exterior entry doors, and apply caulk along the bottom outside edge and sides of door thresholds.
- Seal around pipe and utility penetrations into the structure.
- Other pest-proofing methods can be found in PB1303, *Managing Pests Around the Home* (http://www.utextension.utk.edu/publications/pests/default.asp#home)

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Inside - Pest Removal

Remove individuals found indoors with a vacuum, or broom and dust pan. As with other pests requiring high moisture, millipedes should die after being indoors for several days.

Outside - Pesticide Applications May Reduce Indoor Invasions

Apply pesticides to the perimeter of the structure and around potential entry points such as doors, windows, vents, pipe and utility penetrations. After heavy rains, such as when an inch of rain falls within an hour, one has to wonder how much of the insecticide from the perimeter treatment is left in place. Pesticides should not be relied upon for primary control of millipedes, but rather used as a supplement to pest-proofing and habitat manipulation. Wettable powders (WP) and microencapsulated (ME) products tend to have a longer residual on outside surfaces than emulsifiable concentrates or flowables. Most homeowners don't have access to MEs or WPs and thus may need to rely upon over-the-counter products that contain synthetic pyrethroids such as cyfluthrin (Bayer Advanced Home Indoor and Outdoor Insect Killer), bifenthrin (Ortho Home Defense Max Perimeter and Indoor Insect Killer) or lambda-cyhalothrin (Spectracide Bug Stop Indoor Plus Outdoor Insect Killer).

Modified from:

Vail, K.M., G. Burgess, R. Gerhardt and C. Harper [eds.]. 2001. PB 1673 General Pest and Rodent Control Pesticide Applicator Licensing Manual (GRC). pp. 130. The University of Tennessee Extension.

http://eppserver.ag.utk.edu/psep/secondlevel/thirdlevel/GRC/GRCindex.htm

Oi, F. and A. Appel. 1998. ANR-1075 IPM Tactics for Millipede Control. Auburn University, Cooperative Extension Service.

Waldvogel, M. 2004. Controlling Millipedes in and Around Homes. Insect Note - ENT/rsc-18. North Carolina Cooperative Extension Service.

http://www.ces.ncsu.edu/depts/ent/notes/Urban/millipedes.htm

New Products & Label Changes in Tennessee as of July 2008

By Gene Burgess

Insecticides & Miticides

Acephate 90 Soluble AI (acephate) -- control of insects in various crops (Arysta LifeScience)

Spintor 2SC AI (spinosad) -- naturalyte control or suppression for many foliage feeding insects (Dow AgroSciences)

Pilot 4E AI (chlorpyrifos), RUP -- control of various insects infecting various field crops (Gharda Chemicals)

Uncle Albert's Super Smart Ant Bait AI (disodium octaborate tetrahydreate) -- kills household ants (Green Star Group)

Mycotrol O AI (beauveria bassiana) -- control various insects indoor/outdoor nursery (Laverlam International Corp)

Green Thumb Outdoor Mosquito Fogger AI (permethrin) -- kills and repels mosquitoes (Maid Brands, Inc)

CheckMite AI (coumaphos) -- control of varroa mites and small hive beetles (Mann Lake Ltd)

Platinum 75 SG AI (thiamethoxam) -- control of certain insect pests infesting various crops (Syngenta)

Exile CS AI (lambda-cyhalothrin) -- insect control in, on and around building and structures (United Kingdom)

Nitro Shield AI (imidacloprid) -- seed protectant insecticide (Winfield Solutions, LLC)

Herbicides & Plant Growth Regulators

Grandslam 4xs AI (glyphosate) -- selective broad-spectrum weed control (Agri Packaging & Logistics Inc)

*Quinstar 4L*AI (dichloro) -- weed control in dry-seeded and water-seeded rice planting (Albaugh, Inc)

Cruse Control AI (dimethylamine salt) -- control weeds in various crops (Alligare, LLC)

Clincher SF AI (cyhalofop) -- selective postemergence grass weed control in rice (Dow AgroSciences)

Harmony SG AI (thifensulfuron-methyl) -- supplemental labeling for weed control in roundup ready soybeans (Dupont)

Simazine 90DF AI (simazine) -- control annual grasses and broadleaf weeds (Winfield Solutions, LLC)

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Fungicides, Rodenticides, & Other Pesticides

Eagle 20EW AI (myclobutanil) -- systemic protectant and curative fungicide for disease control (Dow Agrosciences)

Super Boll AI (ethephon) -- plant regulator for use on cotton and tobacco (Etigra)

Quali-Pro Chlorothalonil DF AI (chlorothalonil) -- fungicide to control various diseases (Farmsaver.com)

Fiberglass Bottomkote Act AI (cuprous oxide) -- season-to-season antifouling protection (International Paint)

OHP 6672 4.5F AI (thiophanate-methyl) -- control of spectrum diseases (OHP, Inc)

Adapted from TDA's July *Registration Review*.

Tobacco Scouting Reports

By Gene Burgess

McMinn County, Clint Crisp:

The fields scouted had been treated with Admire Pro (trey drench) or Orthene (transplant water treatment). One field also had a Orthene foliar treatment. Aphids had not reached economic threshold in any of these fields. However, flea beetles had reached an economic threshold level in one field. Some brown spot and perennial broad leaf weeds were found.

Anderson County, Amanda Maddux:

One field scouted had been sprayed on Monday, June 23 with Orthene and there were no bugs found on Wednesday, June 25. Morning glory, pigweed and horsenettle were found. There was environmental damage on some of the plants caused by the lack of rain and sunscald.

In a second field the only insects found were dead. Therefore, the farmer had most likely recently sprayed. Morning glory, pigweed and horsenettle were found. Signs of lack of rain and sunscald were present.

Plant & Pest Diagnostic Highlights

By Bruce Kauffman

We received 158 samples from May 31 to June 19, 2008 including 99 samples via the UT Diagnostic Web Site.

FIELD CROPS : Black shank of dark tobacco (KTD6), and suspected mechanical cultivation injury and/or drought stress of tobacco; potash and zinc deficiency of soybeans; gramoxone and/or holcus bacterial leaf spot and pythium root rot on corn.

FRUIT & VEGETABLES : Cedar apple rust leaf spot, fire blight, frog eye (*Botryosphaeria obtusa*) leaf spot and branch canker, solubor injury and aphid feeding on apple; high temperature leaf roll and flower drop, roundup injury, blossom end rot, herbicide and/or fertilizer burn, rhizoctonia and/or buckeye fruit rot (*Phytophthora* sp.), suspected phenoxy herbicide and/or cucumber mosaic virus leaf symptoms, and tomato spotted wilt virus of tomato; squash bug feeding and possible yellow vine decline and fertilizer imbalance of squash; phenoxy herbicide injury to tomato and pepper; lygus bug and/or phenoxy herbicide injury of okra; fertilizer burn and suspected pythium and/or fusarium root rot of green beans; suspected virus of peas; black rot of grape fruit clusters; leaf miner damage, bacterial leaf spot and brown fruit rot of peach; brown fruit rot of nectarine due to mechanical injury and/or tarnished plant bugs and/or stink bugs; root maggots girdling the lower stem and roots of cabbage and brussel sprouts; phytophthora stem and root rot of peach seedlings; fruit drop of apricot due to climatic problems and/or squirrel predation; fire blight of pear branches and leaves; possible early blight of tomato leaves; cercospora leaf spot and leaf scorch due to under or over watering of blueberry; obscure scale of pin oak twigs; aphids, wireworm and root collar feeding by maggots on Louisiana iris; redheaded ash borer on maple.

INSECTS, CRUSTACEANS & MITES : Aphids and sooty mold on birch; peachtree borer damage to cherrylaurel; spider mites of dwarf Alberta spruce; woolly adelgids on hemlock; clay-colored leaf beetle feeding on black locust leaves; cereal leaf beetles feeding on wheat; green lacewings and snowy tree crickets on tomato; variegated fritillary caterpillar on cacti; woolly bear caterpillar and/or flea beetle leaf damage to hosta; aphids on daylilly and tomatoes; leaf beetle damage to beans; thrips and/or high temperatures causing flower drop of half runner beans; psocids causing webbing on tree bark; granulated ambrosia beetle boring into sassafras stem; ash whitefly damage to ash leaves; harlequin bug on snapdragon; periodical cicada damage to white oak and ornamental pear twigs; boxelder bug nymph on a house plant; twospotted mite damage and rose sawfly caterpillar damage to rose leaves; European elm bark beetle in elm branches; springtails and annelid worms in earthworm beds.

Insects and other pests around the home : Springtails; odorous house ant reproductives; thrips; drugstore beetle; black carpet beetle; purseweb spider; ground beetle; brown dog tick; click beetle; shore flies; midges; May beetle; brown recluse spider; bats; termites; twice-stabbed stink bug.

ORNAMENTALS & TREES : Shot hole leaf damage (*Coccomyces* sp.) to cherry; leucostoma canker of serviceberry; seiridium canker and/or root decline due to excessive moisture of Arizona cypress; seiridium canker and/or botryosphaeria canker and pestalotiopsis twig and leaf blight of Leyland cypress; puffball fungi growing on container bark media; root decline of Bradford pear due to

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girdling roots or trees planted too deeply; possible endothia canker of branches and environmental stress on pin oak; cedar quince rust of pear and hawthorn fruit; anthracnose leaf blotch of red maple; suspected dicamba leaf damage to tulip poplar and red maple; leaf drop of tulip polar due to summer dormancy; mushroom *(Leucocoprinus breviramus*) growing on container media; cercospora leaf spot of hydrangea; seiridium canker of eastern redcedar; black spot of tea rose; older leaves with leaf spots dropping from rhododendron; entomosporium leaf spot of Washington hawthorn; anthracnose leaf spot of crabapple; diplodia branch blight of Mugo pine; twig canker and environmental stress of English laurel; iron chlorosis of red oak; powdery mildew of rose; wind breakage of elm limbs at bacterial wetwood infection sites; virus-like leaf symptoms of tulip poplar leaves; phytophthora root rot of helleri holly; coryneum canker of pin oak twigs; oak decline and mortality due to last year's hot, dry weather on red oak; fire blight of pear; bacterial leaf spot of English ivy; pythium root rot and fire leaf spot of Louisiana iris; pythium root rot of Siberian and Japanese iris; leaf reddening due to low food reserves and/or nutrient deficiency in dogwood; septoria leaf spot of Black-eyed Susans; botryosphaeria canker of forsythia; volutella canker of boxwood twigs; reduced flowering of oakleaf hydrangea due to last year's stress, plant competition and poor growing site; pestalotia needle blight and drought stress of cryptomeria; phyllosticta leaf spot and possible verticillium wilt of sugar maple; transplant shock and changing cultural methods of establishment of Japanese holly; environmental stress due to root loss and site conditions of oak; actinopelte leaf spot and iron chlorosis of pin oak; wood decay of lower trunk following injury on eastern white pine; root decline caused by over or under watering of spruce; pseudocercospora leaf spot of sweetgum; anthracnose and mycosphaerella leaf spots of ash.

TURF & FORAGE : Pythium root rot of bentgrass; dried out fescue sod due to reduced watering and/or poor maintenance in hot, dry weather; brown patch (*Rhizoctonia* sp.) and slime mold growth (*Physarum* sp.) of fescue; rust and ascochyta blight of bluegrass; head smut (*Ustilago* sp.) of bermudagrass.

Visit the UT Extension Web site at
http://www.utextension.utk.edu

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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.