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FALL ARMYWORMS

FALL ARMYWORM SITUATION IN WEST KENTUCKY
by Doug Johnson

Capture of fall armyworm moths in the Princeton based IPM-pheromone baited traps have increased significantly. Last month I indicated in this newsletter that pastures in several Tennessee counties had suffered significant outbreaks of fall armyworm. At that time our counts were up slightly but then began to decline. This past week those captures increased significantly once again.

See: http://www.uky.edu/Ag/IPMPrinceton/counts/fall/fawgraph.htm

Counts for this Friday (05 Oct 07) were about 12 times the five year average for this date. This appears to be a west Kentucky population, as the traps in Lexington do not reflect this increase. While I can not say for sure that a fallworm outbreak will follow, certainly the risk has increased. With the temperatures we are currently experiencing, I expect that we will see larvae in about two weeks.

Wheat Concerns

While larvae (caterpillars) from the current moth flight will not be seen for a week or two (depending up temperature changes), there are fall armyworms present in some areas now. Calls from consultants and "ag-dealers" indicate that they and producers are wondering if they should control the caterpillars surviving on volunteer corn in fields that were / are going to be planted in wheat. This is a very good question.

1.) If the wheat has already been planted and will emerge soon, an insecticide application is your only control alternative. Wheat will tolerate considerable damage from fall armyworm, but there is no established threshold.

2.) If wheat has not been planted into the field, I do not think that the current crop of caterpillars that are surviving in the volunteer corn will be around when the wheat emerges. This is providing that the wheat is planted at the normally recommended time, using the Hessian fly-free date as a guide. For example, this would be Oct 15 for the southern tier of counties and up to Princeton, with progressively earlier dates as one moves north (See Hessian Fly in KY at: http://www.ca.uky.edu/entomology/dept/entfacts.asp).

From a purely "insect control" standpoint, it appears to me that controlling the volunteer corn would accomplish the same insect control, and might have some additional favorable agronomic impacts. However, it is important to understand that the corn must be killed quickly, in order to obtain insect control. I do not think mowing is an option. If the corn dies, the caterpillar's food source is gone and they will die, or perhaps try to move. I would NOT suggest this tactic if the field is heavily infested with fall armyworm and adjacent fields contain another host crop like, small grains, grass hay or alfalfa. This is particularly, important for new plantings. They are after all "ARMY" worms. They can move.

3.) Regardless of whether one tries to control the current fall armyworm population by destroying the volunteer corn or with an insecticide application, neither of these techniques will have any impact on the caterpillars that will result from egg laying that will occur in the future. This is why the current moth flight (and weather) may be important.

4.) Normally, weather is the main source of control for fall armyworm. It may turn out to be this way again this year. If the weather turns cool and we get a frost at a reasonable time, all of this will be over and done with and no control action would be required by producers. If the weather does not cooperate then the problem will persist.

This wheat planting season is at higher risk to fall armyworm than in most years for three reasons: 1.) a much larger than normal population of fall armyworm moths, 2.) considerable volunteer corn in fields to be planted to wheat, which serves as an attraction to the moths and a host for the larvae, 3.) very warm weather. The most important technique is to watch your fields for fall armyworm so that you will not be caught of your guard. Remember, this pest has a wide host range and will remain a threat until a hard frost (especially in no-till). Even if you are not yet seeing larvae (caterpillars), certainly you should keep your eyes open for this pest on any newly seeded grasses or alfalfa.

VEGETABLES

INSECTICIDE CHANGES FOR COMMERCIAL VEGETABLES
by Ric Bessin

There have been a large number of insecticide changes this past year. Those listed below will be incorporated into next version of ID-36 which is scheduled to be released in January 2008.

►NEW PRODUCTS

Radiant SC - spinetoram - IRAC group 5. This is controls larvae of Lepidoptera, Diptera, and thrips. Labels on a wide range of vegetables including asparagus, legume vegetables, cole crops, cucurbits, sweet corn, eggplant, peppers, potatoes, tomatoes, root crops, and leafy greens. REI of 4 hours.

Renounce 20WP (RUP) - cyfluthrin - IRAC Group 3. This is a broadspectrum insecticide labeled for use on brassica leafy vegetables, cucurbits, potatoes, tomatoes, peppers, eggplant, leafy vegetables, root vegetables, sweet corn, and dried shelled legume vegetables. REI of 12 hours.

Beleaf 50SG - flonicamid - IRAC Group 9C. Labeled for control of aphids, plant bugs, and greenhouse whitefly on head and stem brassicas, mustard greens, cucurbits, tomatoes, peppers, eggplant, leafy vegetables, and potato. REI of 12 hours.

Clutch 50WDG - clothianidin - IRAC Group 4. Labeled for control of Colorado potato beetle, aphids, and leafhoppers on potato.

►LABEL EXPANSIONS

Acramite 4 - New uses for potato**.**

Actara 25W - New uses include cole crops, cucurbits, eggplant, leafy greens, and tomato.

AgriMek - New uses include lettuce and spinach.

Avaunt - New uses include cucurbits and southern peas.

Baythroid XL - New uses for eggplant.

Dimilin 2L - New uses include some leafy greens,

Fulfill - New uses for asparagus.

Mustang Max - New uses include cucurbits, potato and sweet potato.

Rimon 0.83EC - News uses for cole crops.

NEW SEED TREATMENT FUNGICIDE REGISTERED FOR SWEET CORN
by Kenny Seebold

Syngenta Crop Protection has announced that the EPA has approved the use of Dividend Extreme on sweet corn for suppression of damping-off caused by *Pythium* spp. and post-emergence dieback, caused by fungal species such as *Rhizoctonia solani* and *Fusarium* spp. Dividend Extreme is a seed treatment, and is a mixture of mefenoxam (the same active ingredient found in Ridomil Gold) and difenoconazole. Difenoconazole is a triazole fungicide belonging to the class of compounds known as sterol-biosynthesis inhibitors; the combination of mefenoxam and difenoconazole creates a product with activity against a broad spectrum of plant pathogens.

The use rate for Dividend Extreme is 2 to 5 fl oz per 100 lb of seed. To apply, create a slurry by mixing the product in enough water to provide thorough and uniform coverage of seed with standard seed-treatment equipment. Agitate the slurry constantly during the treatment process, and allow seed to dry before bagging. Do not use pesticide-treated seed for food, feed, or oil.

WEATHER

EFFECT OF DRY WEATHER ON HERBICIDE PERSISTENCE AND INJURY TO ROTATIONAL CROPS

by Bill Witt, Jim Martin, and J. D. Green

The unusually dry weather this season has affected many things including the persistence of herbicides in soil. However, it remains unclear if the effects of dry weather will cause herbicides to persist at sufficient levels to cause injury to rotational crops. Based on observations from previous dry seasons, injury due to "herbicide carryover" has been minimal in Kentucky relative to other areas. The fact this year's drought has set records in duration and severity makes the current situation unique.

The following factors should be considered in making decisions for planting certain crops this fall or next spring:

1) Herbicide soil-life: Herbicides vary in their potential longevity in the soil as measured by soil half-life. Herbicides with a long soil-life have the greatest potential to persist in soil and injury rotational crops. Examples of such herbicides include: atrazine, chlorimuron (Canopy, Classic), clomazone (Command), imazaquin (Scepter), and imazethapyr (Pursuit or Lightning), simazine (Princep), and sulfentrazone (Spartan or Authority First).

2) Herbicide rate: Using the highest labeled rate of persistent herbicides increases the likelihood of injury to rotational crops. Fields treated with a total cumulative rate of 2.5 lb ai of atrazine per acre (pre + post application) have a greater chance of carryover injury than similar fields treated with a rate of 1.3 lb ai per acre. The following are examples of herbicides where labeled rotational crop restrictions are affected by rate.

a. Canopy: The rotational interval for corn, sorghum, alfalfa, forage grasses and tobacco are dependant on both herbicide rate and soil pH. Consult label for details.
b. Canopy EX: Rotational interval is extended for corn, grain sorghum, wheat, alfalfa, forage grasses, and tobacco when rate exceeds 1.65 oz/A.
c. Clarity, Banvel, [other dicamba products]: For be tween crop or post harvest applications, delay planting wheat 15 days per 8 oz of Clarity/A (up to 24 oz/A) or 20 days per pint of Banvel/A. [consult specific product label for other products containing dicamba].
d. FirstRate: Rotation to tobacco requires a 30-month interval and a successful field bioassay when rate exceeds 0.3 oz/A
e. Princep: A crop of corn (untreated with Princep) should precede the next rotational crop if rate ex ceeds 3 lb ai/A.
f. Spartan: Extend the rotation interval for grain sorghum to 18 months if rate exceed 8 oz/A.
g. Synchrony: Rotation interval for alfalfa is extended when rate exceeds 0.75 oz/A.

3) Sequential or Tank Mix Applications: A sequential application of two or more herbicides with the potential for a long-soil residual life may add herbicide residue in soils and increase risk of crop injury of rotational crops. This is particularly important for many ALS-inhibitors applied as preemergence followed later by a foliar treatment. An example would be using Canopy preemergence followed by a postemergence spray of Classic or Synchrony. Similarly, tank mixing atrazine and Princep together at high rates also increases the likelihood of injury to sensitive rotational crops.

4) Rotational Crop Sensitivity: The amount of herbicide that will cause injury is influenced by the rotational crop's sensitivity. For example, most soybeans can tolerate higher levels of atrazine than tobacco; consequently the potential for carryover injury is less of a risk with soybeans than tobacco.

5) Rainfall: The intensity and timing of a rainfall event relative to application can impact persistence of soil-residual herbicides and the chance of injuring fall-seeded crops. Generally, rainfall within the first two weeks after planting provides a soil environment that is conducive to herbicide degradation; however, if a long period without rainfall (4 weeks) occurs then the potential for herbicide persistence is greater. Rainfall this fall and winter may also impact decisions for next spring plantings. As a general rule, Kentucky's winters have ample moisture for herbicide dissipation. However, if soil conditions continue to remain dry, then special consideration may be warranted. The following are examples of herbicides where labeled rotational crop restrictions are affected by rainfall:

a. Balance PRO and Radius: In order to comply with rotational restrictions for alfalfa, forage grasses, and tobacco, 15 inches of cumulative rainfall is required.
b. Command: Injury to rotational crops may occur when conditions are extremely dry 4 months follow ing application.
c. Hornet: Wait 18 months to plant soybean or alfalfa if rainfall is extremely low and soil organic matter is < 2%.
d. Scepter: When less than 15 inches of rain occurs from 2 weeks prior to soil application through November 15, do not rotate to corn the following year

unless planting imidazolinone tolerant/resistant Clearfield) hybrids.

6) Soil Temperature: The temperature throughout the spring and summer are usually sufficient for normal degradation of herbicides. The brief periods of mild temperatures that usually occur in the fall and winter help limit carryover problems in Kentucky, when compared to other areas where soil remains frozen for several weeks or months. If temperatures this fall and winter dip below normal for a prolong period of time, then special consideration may be needed to determine what crops to plant next spring.

7) Soil pH: Triazines and many sulfonylureas tend to persist longer in soils with a high pH; whereas, clomazone is a specific herbicide that may persist longer at low pH. The following are examples of herbicides where labeled rotational crop restrictions are affected by soil pH:

a. Accent: Delay planting forage grasses or tobacco if soil pH exceeds 6.5.
b. Canopy: The rotational interval for corn, sorghum, alfalfa, forage grasses and tobacco are dependant on both soil pH and herbicide rate. Consult label for details.
c. Command: Injury to rotational crops may occur where soil pH is 5.9 or lower.
d. Steadfast: Extend rotational interval for forage grasses and tobacco when pH exceeds 6.5 and for sorghum when pH exceeds 7.5.
e. Stout: Extend rotational interval for sorghum when pH exceeds 7.5.

8) Date of Application: Delaying application into the summer months when conditions are less favorable for herbicide dissipation increases the risk of injury to rotational crops. The following are examples of herbicides where labeled rotational crop restrictions are affected by date of application:

a. Atrazine (and many premix products containing atrazine): If applied after June 10, plant only corn or sorghum the following year. When applying such pre mixes as Camix, Lexar, or Lumax after June 1, plant only corn or sorghum the following season. When applying Steadfast ATZ after July 1, plant only corn or sorghum the following season.
b. Classic and Synchrony: Extend rotational interval for alfalfa, clover, field corn, popcorn, sorghum, or tobacco if applied after August 1.

Soil Testing for Herbicide in Soil: Laboratory analysis for specific herbicides could be useful when making decisions on when to plant a rotational crop.

The University of Kentucky Regualtory Services offers a service for analyzing soil for triazine herbicides (atrazine & simazine) for interpretation of risk of injury to tobacco. Consult with your local county Extension office for specific details on collecting soil for triazine herbicides. There are also private companies that will analyze soil for atrazine and simazine as well as other specific herbicides. Two companies that analyze for herbicides are:

Waters Agricultural Laboratories in Owensboro KY
270-685-4039
http://watersag.com/Ownesboro.htm

A & L Laboratories Memphis TN.
Ph: 800-264-4522
http://www.al-labs.com/

SOURCES OF INFORMATION:
The herbicide label is the ultimate source on defining safe options for rotating crops.

The UK extension publication AGR-6 has a section for crop rotational guidelines for specific herbicides used in grain crops and tobacco. http://www.uky.edu/Ag/Agronomy/Weeds/agr6/6X-End-06/112Rotation-2006.pdf

Another source is the publication on "Herbicide Persistence and Carryover in Kentucky (AGR-139) http://www.ca.uky.edu/agc/pubs/agr/agr139/agr139.htm

SHADE TREES & ORNAMENTALS

DYING WHITE PINES - DECLINE OR ROOT DECLINE?
by John Hartman

This summer, white pines were observed in various states of decline and death in landscapes in several central Kentucky locations. In some cases, newly planted pines simply did not become established during their hot, dry first season in the landscape. In at least one case, Phytophthora root rot was prevalent in a white pine Christmas tree planting. However, in some landscapes, well-established previously healthy 10-20 year-old white pines were dying. White pine decline and white pine root decline were both observed this summer.

What causes white pine decline and white pine root decline?

- White pine decline disease is not infectious - it is asso ciated with compacted soils and with soils having a high pH or high clay content. Such soils occur in

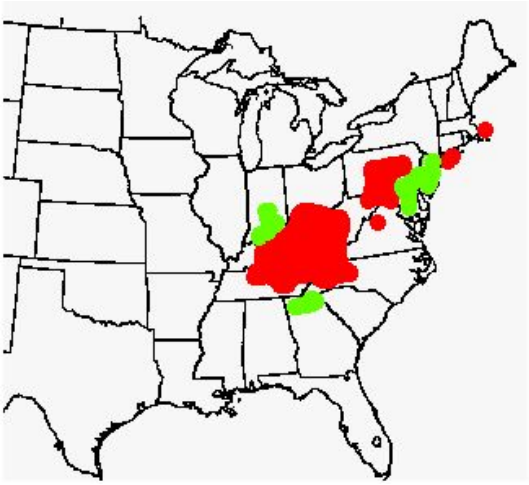
many urban and rural landscapes throughout Ken tucky except in portions of the eastern part of the state where white pines grow as a native species.
- White pine root decline disease is an infectious root rot, a progressive soilborne disease caused by the fungus *Leptographium procerum*, also called *Verticicladiella pro cera*. It can apparently occur anywhere white pines are grown, even on good sites.

Symptoms. White pine decline and white pine root decline symptoms are similar and both are common enough here that diagnosis could be confusing. From a distance, symptoms of gradual fading out and death of affected trees is very similar.

- White pine decline symptoms begin gradually, often appearing in previously healthy plantings after the trees become 15-20 years old. Thinning of the foliage, needle tip necrosis, and wrinkling of the branches, is observed and suggests desiccation. Trees gradually turn brown and die. In a planting, scattered trees in seemingly random locations may die while others nearby remain green.
- White pine root decline may begin with delayed candle emergence and elongation in spring. This can be fol lowed by poor shoot elongation, needle browning, and lower branch death. Declining and dead pines may show patches of resin at the base, and when the bark is removed from the trunk and adjoining buttress roots, a resin-soaked dark brown staining or streaking may be evident in the cambium and wood. Infected roots several feet out from the tree may show lesions with cam bial and vascular browning as these tissues are ex posed when cut. Unearthing the roots using an air spade or air knife allows close examination of the roots. In addition, many diseased trees show excess resin flow from parts of the trunk where diseased branches had previously been removed. In some of the cases observed, white pine root decline appeared first in the wetter parts of the landscape, but it can also oc cur on well-drained sites. Even before obvious decline symptoms appear, trees may show reduced growth for a few years preceding decline.

Disease management. White pines are native to some parts of eastern Kentucky where they grow in moist sites with acid, sandy, soils. In other parts of Kentucky, there are exceptional long-lived white pines growing out of their native sites and why these survive while others nearby decline is not known. Creating good growing conditions before planting white pines is a good practice. White pine root decline is not curable and may be difficult to prevent in some sites. The fungus is probably more widespread in white pines than obvious symptoms would indicate. White pine root decline is known to be more of a problem for pines that are growing in stressful circumstances such as root and trunk wounding, air pollution exposure, and infection by other root decay fungi. In addition, the fungus can be vectored by trunk and root collar boring weevil insects, but their exact role here is not well defined. However, if white pines are being planted in landscapes to last a long time, premature decline and death is a risk that must be considered in most Kentucky locations. The best advice is to provide white pines with good growing conditions.

DO YOU BELIEVE IN MAGICICADA (BROOD XIV), THAT IS?
by Lee Townsend



Brood XIV of the periodical cicada is scheduled to emerge over most of Kentucky and surrounding states in 2008. Emergence should begin about mid-May with egg-laying starting about two weeks later. According to a 1991 issue of Kentucky Pest News, the cicada was active in 87 counties over the eastern 2/3 of the state (see map). Populations varied greatly by location, even within a county. Damage from this insect is inflicted on tree branches and twigs when females start to lay eggs. In addition, there was a substantial increase in infestations of the woolly apple aphid at cicada wounds on apple trees in commercial and home orchards.

HOUSEHOLD

HEAD LICE SEASON
by Mike Potter

Head lice outbreaks are common this time of year, especially among children. Schools bring large numbers of people together in close, personal contact. Hats and coats are often shared or hung together in the same closet, permitting transfer of lice from child to child. Louse transfer

can also result from using infested combs and brushes, or resting one's head on upholstered furniture or pillows recently used by an infested individual.

Diagnosing the Problem- Head lice are bloodsucking insects that live exclusively on humans. They usually infest only the head, preferring the nape of the neck and the area behind the ears.
The first indication of head lice is itching and scratching caused by the bloodsucking habits of the louse. Further examination will reveal the white or grayish crawling forms (about the size of a sesame seed) and yellowish-white eggs (nits) attached to hair shafts near the scalp. The nits are sometimes mistaken for dandruff or shampoo residue, but will not wash off or be flicked off with a finger. All life stages are detectable with the naked eye, although a flashlight and magnifying lens are helpful. Bite or scratch marks are often seen on the scalp or neck.

People should be aware that there are factors, other than head lice, that can cause itching and irritation. Dry skin, for example, can cause irritation, producing the dermatological condition known as "winter itch". As skin loses moisture, itching results. A skin moisturizer or home humidifier is often helpful in these situations. (See ENT-50 *Invisible Itches: Insect and Non-Insect Causes*.)

Elimination and Prevention- The following actions are important for eliminating head lice and preventing their return. The steps should be done at the same time to avoid reinfestation.

1. The child or infected person(s) should be treated with a shampoo (pediculicide) formulated to control lice. Various products, most containing permethrin or pyrethrin, are available through pharmacists and physicians. Follow the directions on the package. If one family member is louse-infested, others should be examined also. More than half of infested children have another infested family member at home.

2. Remove all nits using a fine-tooth louse comb. Although this step can be tedious, *nit removal is crucial to eradication*. Louse control shampoos often do not kill all the nits, and surviving eggs will hatch within 7 to 10 days, continuing the cycle of infestation. Dead nits also may remain attached to hair, causing uncertainty about whether elimination has been achieved. Nit removal is easier while the hair is damp; adding conditioner also can make combing easier. Nits can also be picked out with fingernails or cut out with a small safety scissors.

3. All personal articles that have been in prolonged contact with the patient's head should be deloused. Laundering with hot, soapy water (125 degrees F for 10 minutes), or dry cleaning, will kill lice and nits on pillowcases, sheets, night clothes, towels, hats, etc. Combs and brushes should be soaked for at least 10 minutes in a pan of hot water.

Treatment of clothing or premises (floors, carpeting, etc.) with insecticides is generally not required nor recommended for the control and prevention of head lice. This is because the lice cannot survive more than a day or so off a human host (nits lose viability within a week). As an added precaution, furnishings used by infested persons may be vacuumed.

4. To reduce the spread of lice, children should be told not to share hats, clothing or brushes with their classmates. Each child should have a separate storage space for hats and other garments. If this is not possible, coats should be hung on hooks so they do not touch, or on the backs of students' chairs.

Managing Persistent Infestations- Despite the above efforts, there are times when head lice infestations seem to persist indefinitely. Persistent infestations may be due to improper use of the pediculicide shampoo (e.g. insufficient time on the scalp or failure to reapply after 7 to 10 days). Other times, not enough effort was spent combing out the nits, or infested family members were not concurrently treated.

In rare but increasing instances, the louse shampoo may have lost its effectiveness. Head lice resistance to pediculicides has been documented, especially to permethrin. Resistance to pyrethrin/piperonyl butoxide formulations appears to be less common. If resistance is suspected to the product you've been using, consult your pharmacist or physician for alternatives.

Managing a head lice outbreak in a school, nursing home, or other shared facility requires administrative support and prompt, coordinated action. Unless all affected persons are treated, the condition will persist and often spread to other individuals.

DIAGNOSTIC LAB-HIGHLIGHTS

by Julie Beale and Paul Bachi

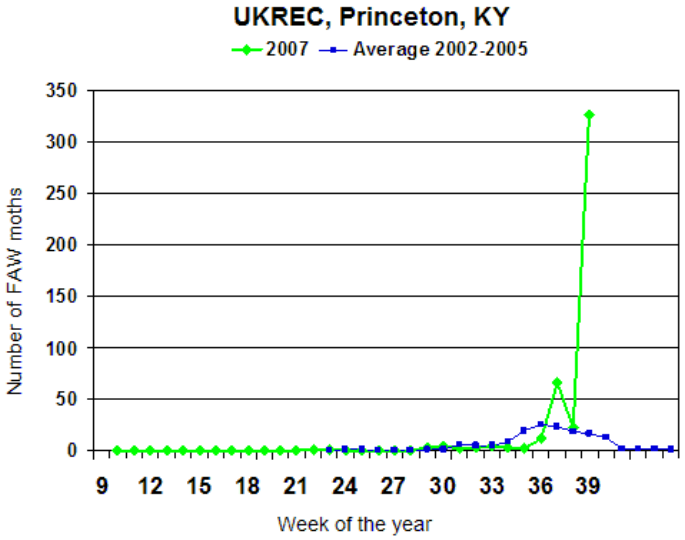
Over the past two weeks, we have diagnosed a few cases of black shank and hollow stalk and one case of blue mold on late season tobacco. On fruit and vegetable samples, we have seen crown gall on grape; scurf on sweet potato; and Fusarium fruit rot, anthracnose and powdery mildew on pumpkin. On ornamentals we have seen Pythium root rot on chrysanthemum; fertilizer burn on

pansy; black root rot on holly; Rhizoctonia root rot on dogwood; Phytophthora root rot on taxus; Hypoxylon canker on maple; normal fall needle drop on white pine; bacterial leaf scorch on oak; and drought stress/ transplant shock symptoms on many landscape plants, particularly spruce.

TRAP COUNTS
UKREC, Princeton KY
Kentucky
September 28-October 5, 2007

►***Princeton, KY***
Fall armyworm.....326

This season insect trap counts will be provided for locations in Kentucky and Tennessee.
View trap counts for past seasons and the entire 2007 season at –
http://www.uky.edu/Ag/IPMPrinceton/Counts/2006trapsfp.htm
View trap counts for Fulton County, Kentucky at - http://ces.ca.uky.edu/fulton/anr/
For information on trap counts in southern Illinois visit the Hines Report at –
http://www.ipm.uiuc.edu/pubs/hines_report/comments.html
The Hines Report is posted weekly by Ron Hines, Senior Research Specialist, at the University of Illinois Dixon Springs Agricultural Center.



Lee Townsend, Extension Entomologist

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UNIVERSITY OF KENTUCKY
College of Agriculture

Cooperative Extension Service

University of Kentucky
Entomology
S-225 Ag. Science Center North
Lexington KY 40546-0091