



KENTUCKY PEST NEWS

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ANNOUNCEMENT

GRAIN STORAGE INTEGRATED PEST MANAGEMENT MEETINGS THIS SPRING.

by **Sam McNeill, Extension Agricultural Engineer** and **Doug Johnson, Extension Entomologist**

The last two weeks of March will bring you an opportunity to learn the latest facts about on farm grain storage. These meetings will be provided through the combined efforts of the Universities of Kentucky and Tennessee and Purdue University. Agricultural Economists, Agricultural Engineers, Entomologists, Plant Pathologists, Producers and Industry representatives will be cooperating to produce these two meetings. Producers will learn the latest information, methods and materials to successfully maintain grain quality while marketing their stored grain.

The University of Kentucky and Purdue University will sponsor the first meeting on:
Thursday March 22, 2001, at the Henderson Community College (Henderson, KY) from 9:00AM - 2:00PM.

The Second meeting will be sponsored by the

combined efforts of the Universities of Kentucky and Tennessee. This meeting will be held on: Thursday March 29, 2001, at the Warren Co. (Bowling Green, KY) Extension office, from 9:00AM - 2:00PM.

Both meetings will have approximately the same program covering: Temperature Monitors, Economics of Grain Handling and Storage, Fumigation Tips, Monitoring Grain for Moisture and Insects, Grain Bin Safety, Aeration Fan Controls, Preventing Molds and Toxins in Stored Grain, Handling Identity Preserved Crops, and a Farmer Panel on Handling and Storage and MORE!!

The sponsors will apply for Commercial Pesticide Certification Continuing Education Credits for: Dealer, Seedsman, Agricultural Fumigation, and Research and Demonstration.

CORN

NEW SEED TREATMENTS FOR CORN: WHAT CAN BE EXPECTED by Ric Bessin

Two recently registered corn seed treatments are currently on the market and available for the 2001



growing season. These products, Gaucho and Prescribe, contain the active ingredient imidacloprid. These products differ in the amount of imidacloprid they contain on the seed (Gaucho has 0.161 mg ai/seed and Prescribe 1.34 mg ai/seed). Unlike other insecticide seed treatments for corn, imidacloprid is systemic and some protection beyond just seed protection is provided with these treatments. There are no known interactions with herbicides, so they are safe for the seed. While similar in nature, there are some important differences in pests controlled between these products due to rates of imidacloprid.

Both of these treatments provide effective control of wireworms. Gaucho provides this protection to the seedling, while Prescribe protects the seed and seedling stages. Both of these products will provide protection to the seed against seedcorn maggot. They both provide some protection from flea beetles, but Gaucho will protect seedlings from flea beetles through the first true-leaf stage while Prescribe will protect through the 5 leaf stage. Prescribe should also provide protection from white grub root pruning. These products do not control black cutworm, common stalk borer, or corn borers.

In addition to the pests listed above, Prescribe will also provide some protection from low to moderate populations of western and northern corn rootworms. Control may not be satisfactory under heavy rootworm pressure, in those situations, crop rotation or a soil applied insecticide is recommended. The level of control with these products is not to the level we expect with soil insecticides such as Force, Aztec and Counter. Typically in Kentucky, rootworms are seldom a serious problem because most of our corn is routinely rotated. Western and northern corn rootworms are only a problem of continuous corn in our state. Some producers are beginning to plant more continuous corn acreage. The risk of losses to corn rootworms increases the longer fields are kept in continuous corn. Generally, with good growing conditions, corn can tolerate low pressure from corn rootworms without yield loss. With moderate corn rootworm populations or when growing conditions do not favor rapid recovery from rootworm damage, then economic loss due to rootworms can be expected. Moderate pressure is considered that when unprotected corn would rate an average root rating of 4.5 or less on the 1 to 6 Iowa State University root injury scale. When unprotected corn

sustains a root injury rating of 3.5 or less, then economic loss is not expected.

Specialized equipment and precision application of the materials to the seed by commercial seed treaters is necessary. The materials are not applied to the seed in the hopper box, they are preapplied to the seed typically by the seed company.

SOYBEAN

SOYBEAN SUDDEN DEATH SYNDROME ENCOURAGED BY EARLY PLANTING by Don Hershman

A rash of extremely early planting last spring (mid-late April) is probably a major reason why there was such a problem with soybean sudden death syndrome (SDS) last summer. SDS, caused by Fusarium solani f sp. glycines (FSG), is a soil-borne fungus that infects the roots of soybean plants causes a root rot. Later in the season, the fungus produces one or more toxins which result in the foliar symptoms associated with SDS. The point needs to be made, however, that without the initial root infection, there would be no foliar symptom expression of SDS. In contrast, root rot can be extensive, but foliar symptoms may be minimal, depending upon the environmental conditions and the variety. Root infection, thus, is a critical phase of SDS and without it, there would be no SDS.

SDS researchers have consistently shown that root infection by FSG occurs primarily in the seedling/early vegetative stages of crop development. Also, that root infection is favored primarily by wet (not flooded, however) soil conditions and secondarily by "cool" soils. Wet and cool soils are highly conducive to soybean root infection by FSG. Naturally, the production situation which most coincides with wet, cool soils is planting seed on the front end of the planting season. In west Kentucky, that means planting seed from April 15 to May 5 (give or take a few days depending on the year). The production situation which is least associated with SDS is that of doublecrop soybean, which are planted in late June - early July. In this latter case, soil temperatures are usually high and soil moisture is usually not overly abundant.

Field observations and research data from Kentucky and elsewhere have confirmed that SDS is more

likely to be associated with early plantings rather than late planting. Unfortunately, there has been a trend in Kentucky towards earlier and earlier planting. The reasons for this are two-fold. First, many soybean producers are convinced that planting extremely early will give them the best chance of achieving maximum yields for a field. This is a very dubious belief and I do not think there is much scientific evidence to support it. The second factor which is encouraging very early planting, is related to the fact that planting has become such an efficient operation. The bottom line is that corn planting does not take as long as it once did. This is due to fewer tillage operations and bigger and more efficient tillage and planting equipment. One seed dealer told me last week that once the corn is planted, the farmers just “jump right in and start planting soybean”. This, I believe, is a highly dangerous situation. The increased levels of SDS in the Green River Area, in particular, is a red flag since this is the area in Kentucky where extremely early soybean planting is becoming the most prevalent.

The message I wish to leave you is this: Unless you have an excellent reason to plant soybean in late April/early May, do not do it unless; 1) there is no history of SDS on the farm or 2) you seek out and plant a soybean variety which resists SDS.

FORAGE CROPS

DISEASES THAT CAN CAUSE WINTERTIME STAND LOSS IN ALFALFA by Paul Vincelli

Natural attrition of stand occurs from the moment a newly seeded alfalfa crop emerges from the ground. Every year, fewer plants survive than in previous years. Fortunately, healthy alfalfa plants continue to grow, producing larger crowns and more shoots per crown, thus compensating for missing plants. Based on research in Kentucky and Missouri, UK agronomists consider the following as guidelines for adequate stand.

1. **Hay production.** A minimum of 25 *stems* per square foot from well-spaced, healthy crowns is adequate for economic hay production. This is a good guideline for stands of any age. For mature stands, a minimum stand density of 2.5 to 3 *plants* per sq ft (if those plants are evenly

spaced and the crowns are large and healthy) is desirable.

2. **Pasture** For grazing, a minimum of 15 stems per sq ft (or one plant per sq ft) from well-spaced, healthy crowns is adequate. Realize, however, that a less dense stand can still be very valuable and alfalfa densities below this would not automatically trigger a re-plant.

Occurrence

Stand loss during winter can occur as a result of several diseases. Mature plants with *Phytophthora* root rot often show no dramatic symptoms and only exhibit stunting and slow growth. Thus, it may not be obvious to the producer that there is a disease problem. However, these infected plants can die during the winter, resulting in substantial stand thinning in susceptible varieties.

Plants suffering from the crown rot complex also can predispose plants to winterkill. This is because upper half of the alfalfa taproot, where crown rot fungi invade and decay, is an important site for storage of reserves for winter survival.

We have also found that alfalfa can suffer stand loss thorough the winter when a stand seeded the previous spring gets a very poor start the first season due to such diseases as *Aphanomyces* root rot, particularly when combined with other stresses like foliar diseases or drought stress.

Finally, stands seeded in late summer are at risk for stand loss due to *Sclerotinia* crown and stem rot during the first winter. The typical pattern for that diseases is excellent emergence and growth the previous fall, followed by stand loss during the winter or early spring. Be aware that with *Sclerotinia*, one may not actually see the plants dying during the winter; they may simply become infected, die, and rot away before spring greenup.

Management

Producers can help minimize the risk of disease-related stand loss in winter by selecting high-yielding, adapted, disease-resistant alfalfa varieties when sowing. The UK Alfalfa Variety Trial Reports are, as always, an excellent source of information on variety selection. We recommend substantial levels of resistance to the following diseases: bacterial wilt, *Phytophthora* root rot, *Aphanomyces* root rot, anthracnose, and *Fusarium* wilt. Disease resistance information is provided in that report for each

variety tested, as well as its history of yield performance.

One cannot select alfalfa varieties with resistance specifically to crown rots, since those are a collection of diseases having similar symptoms but many causes. However, selecting adapted varieties and maintaining them under good agronomic practices can reduce the activity of crown rots. More information on these diseases is available in the UK Extension publication PPFS-AG-F-5, "Crown Rots of Alfalfa".

Although certain varieties are marketed as having some resistance to *Sclerotinia* crown and stem rot, UK research has shown that the levels of control these provide ranges from little to none under high disease pressure, which we often experience in this state. Thus, fields on farms with outbreaks of the disease should be evaluated carefully before fall-seeding in the future. For more information, see PPFS-AG-F-2, "Risk Factors for *Sclerotinia* Crown and Stem Rot in Fall-seeded Alfalfa".

All publications mentioned (and more!) are available on the Web at www.ca.uky.edu/agcollege/plantpathology/ppadeppt.html.

Thanks to Dr. Jimmy Henning and Dr. Garry Lacefield for guidance on agronomically acceptable stand densities for Kentucky conditions.

HOUSEHOLD INVADERS

BOXELDER BUGS AND ASIAN LADY BEETLES

By Lee Townsend

Boxelder bugs and Asian lady beetles have been very numerous over the winter. Large numbers of these insects invaded homes last fall, remained active over the winter, and are on the move now as temperatures warm and days get longer. These insects have been reproductively inactive so there has been no breeding indoors although it must seem that way to homeowners who have been inundated with them. These insects are ready to return outdoors and resume their lives. A good strategy is to allow them out by opening doors and windows to set them free. There is no

value in trying to kill those that are already outside.

There are lady beetle traps for sale as indoor collecting devices. One essentially is a cardboard box with a sticky inner covering that captures beetles which wander inside it. Although sold with a pheromone, there is no indication that the beetles respond to it. Studies in North Carolina failed to find a chemical attractant. If there are a lot of beetles in a building, some will wander in the trap and be caught.

H&T Alternative Controls, P.O. Box 1546, Perry, Georgia 31069 advertizes two models of black light traps for indoor lady beetle control. They retail from almost \$ 100 to \$125. The traps are designed to be placed in a corner or against a wall so that the attracting blacklight radiates outward toward the center of the room. Both traps are effective only at night in the absence of competing light sources, but can be used during daytime if the room is completely dark and unlighted by windows or other light sources.

H&T traps are not designed to kill lady beetles but rather to collect them for removal from the building. To remove beetles from the trap, simply brush any beetles into the lower container, separate the upper container and lamp from the lower container and discard the contents of the lower container by pouring them into a plastic bag. The H&T 120 and 360 are designed for use only on the inside of buildings or beneath a covered porch. They are not designed for use out of doors. I have no data on the effectiveness of these traps against lady beetles.

SHADE TREES & ORNAMENTALS

REPLANTING THE URBAN FOREST FOLLOWING BACTERIAL LEAF SCORCH by John Hartman

During recent years, bacterial leaf scorch, caused by *Xylella fastidiosa*, has been involved in the demise of sizeable numbers of trees along streets and in landscapes throughout Kentucky. Especially hard hit have been the mature pin oaks lining many urban streets. Homeowners having lost large street and yard trees to bacterial leaf scorch often ask for advice on trees to plant as replacements.

Where bacterial leaf scorch has been a problem, avoid species that are susceptible to bacterial leaf scorch. In Kentucky, the disease has been found on pin, red, bur, white, and shingle oaks; sycamores and London planes; sugar, red, and silver maples; and sweetgum. Other trees growing in Kentucky that are known to be susceptible elsewhere are American elm and red mulberry. To prevent catastrophic tree losses due to diseases or insects, one should increase the diversity of the urban forest by not planting the same kinds of trees that are already present in high numbers in neighborhoods, cities and towns.

The following is a list of trees that mature to a large size. These trees are not known to be susceptible to bacterial leaf scorch and thus might make suitable replacements for trees lost along streets, in parks and in yards. Some may have other drawbacks. Readers are urged to learn more about the habits of these trees and, if they are to be used as street trees, to ascertain whether or not they are permitted by the local municipal arborist or tree authorities. One good source of information, with illustrations, is a CD, "Large Trees for Kentucky Landscapes," written and developed by Robert Geneve and Christy Cassidy of the U.K. Horticulture Department.

Large trees not yet affected by bacterial leaf scorch.

Alder. European black alder, *Alnus glutinosa*, and cultivars.

Ash. Blue Ash, *Fraxinus quadrangulata*; white ash, *F. americana*, and cultivars; green ash, *F. pennsylvanica*, and cultivars.

Beech. European beech, *Fagus sylvatica*, and cultivars.

Black gum. Tupelo, *Nyssa sylvatica*.

Buckeye. Yellow buckeye, *Aesculus flava*.

Catalpa. Northern catalpa, *Catalpa speciosa*.

Cork tree. Amur cork tree, *Phellodendron amurense*, and fruitless male cultivars.

Elm. Lacebark, or Chinese elm, *U. parvifolia*; American elm, *U. americana* and Dutch elm disease resistant cultivars. Although bacterial leaf scorch has not been detected on American elm in Kentucky, it is present on them in Washington, D.C., so American elm might be risky.

Ginkgo. *Ginkgo biloba*, and fruitless male cultivars.

Hackberry. Sugar hackberry, *Celtis laevigata*; common hackberry, *C. occidentalis*.

Hickory. Shagbark hickory, *Carya ovata*; shellbark hickory, *C. laciniosa*; and pignut hickory, *C. glabra*.

Katsura. Katsuratree, *Cercidophyllum japonicum*.

Kentucky Coffeetree. *Gymnocladus dioica*, and fruitless male cultivars.

Linden. American linden, *Tilia americana*; littleleaf linden, *T. cordata*.

Magnolia. Cucumbertree, *Magnolia acuminata*.

Maple. Black maple, *Acer saccharum* subsp. *nigrum*. Although the disease has not been detected on black maple, the fact that it occurs on three other maples in Kentucky might make this a risky choice.

Oak. Chestnut oak, *Quercus prinus*; chinkapin oak, *Q. muehlenbergii*; sawtooth oak, *Q. acutissima*; scarlet oak, *Q. coccinea*; shumard oak, *Q. shumardii*; swamp white oak, *Q. bicolor*; and willow oak, *Q. phellos* have not been seen with bacterial leaf scorch.

However, the fact that it occurs on five other oaks in Kentucky would make any of these risky choices.

Osage Orange. *Maclura pomifera*, and fruitless male cultivars.

Sassafras. *Sassafras albidum*.

Tulip poplar. Tuliptree, *Liriodendron tulipifera*.

Zelkova. Japanese zelkova, *Zelkova serrata*, and cultivars.

TURFGRASS

YELLOW PATCH ON CREEPING BENTGRASS

by Paul Vincelli

Yellow patch was diagnosed on a creeping bentgrass putting green recently. Symptoms on creeping bentgrass are patches several inches to 1-1.5 feet in size of yellowish or light brown grass. Foliage is affected, but usually crowns are not, and so often the grass recovers with the onset of rapid springtime growth. The disease also attacks *Poa*

annua on putting greens, and it can be much more destructive on that grass, leading to dead patches. Generally cool, moist weather conditions favor the disease.

Prostar, Heritage, and Daconil (and certain related chlorothalonil products) are all labeled to control this disease. For preventive fungicide sprays, Prostar is a proven choice, given it's history of generally good to excellent results in published research. There is insufficient published research to anticipate the performance of Heritage and Daconil in a preventive mode. I am aware of no published data on the use of any of these products in a curative mode. Limited reports by superintendents I have worked closely with suggest that Heritage is a good choice for a curative spray, but research on this point is needed.