



KENTUCKY PEST NEWS

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ANNOUNCEMENT

WORKSHOP ON MICROSCOPIC IDENTIFICATION OF GRAY LEAF SPOT OF PERENNIAL RYEGRASS

by Paul Vincelli

Most readers who work with perennial ryegrass are aware of the emergence of gray leaf spot in the past decade as one of the most destructive turfgrass diseases known. Those of you with experience against gray leaf spot know how rapid and destructive the disease can be.

Fungicides remain our first line of defense against gray leaf spot, because all commercial varieties are susceptible and cultural practices can provide only limited control under high disease pressure. Because of the high cost of fungicides, many turf managers are interested in ways to use these important products more wisely and economically. My opinion is that at this time, there is no better way to optimize the use of fungicides than to scout your own swards for the disease and to microscopically verify the presence of the causal fungus in diseased tissues. Experienced turfgrass pathologists agree that microscopic verification is important because *it is often not possible to positively*

identify this disease based on symptoms alone.

Proper scouting can help you decide:

- when to spray
- when to switch to more costly, but more effective, fungicides
- when you can cut back on spraying
- whether to treat roughs

The University of Kentucky Cooperative Extension Service will hold a workshop for turf managers and other interested professionals on microscopic identification of gray leaf spot of perennial ryegrass. Details are as follows:

Date & Time: June 20, 2001, from 1:00-5:00

Location: The University of Kentucky campus in Lexington

Cost: \$900, Registration must be received by Monday, May 7

While the cost may seem high at first glance, registrants will actually be getting a lot for their money. Each registrant will receive a high-quality compound binocular light microscope (40-1000X magnifications, with halogen illumination and high contrast lenses), which you will learn to use during the workshop. In addition, each registrant will receive dissecting kits, lense

cleaning supplies and other laboratory materials, a notebook including color images, a 2X desk magnifier with built-in illumination, and a field magnifying glass.

Learning Objective: As a result of this workshop, you will be able to detect *Pyricularia grisea* (the causal fungus of gray leaf spot) in diseased turfgrass tissue. This skill will provide the foundation for a scouting and monitoring program for gray leaf spot.

If interested in attending, please contact Pat Yancey at pyancey@pop.uky.edu for a registration form. Registration is limited in order to provide a high-quality learning experience for those who attend. Interested Kentuckians should act soon, since out-of-state registrants will be accepted on April 20. Registration and payment must be received by Monday, May 7.

TOBACCO

FLOAT PLANT INSECT PESTS by Lee Townsend

Very wet media and algae are major factors that contribute to gnat problems, fungus gnats and shore flies, in greenhouses and float systems. Adults are the noticeable stage and are mainly an annoyance. The larval stages of the shore fly can damage small plants in the cells, producing holes in the leaves that resemble the feeding of slugs and small cutworms.

The presence of these insects is usually overlooked until there is a massive swarm of adults sitting on the plant leaves. Orthene sprays will eventually thin them out. It is difficult to control the larval stages because they are down in the algae or under the protective cover of the leaves. Preventive control is based on reduction of algal growth and keeping media from getting too wet.

Occasionally, fungus gnat larvae can be serious pests in greenhouses. Most are scavengers, feeding on decaying organic matter in the growing media. However, some species will feed on root hairs, enter the roots, or even attack the crown or stem of the plant. Infested plants generally lack vigor and may begin to wilt. Adults (gnats) can be seen running on the foliage before injury caused by the larvae becomes apparent.

Fungus gnats are small (1/8") black flies with comparatively long legs and antennae, tiny heads, and one pair of clear wings. Females lay tiny ribbons of tiny yellowish white eggs in the growing media that hatch within 4 days. The clear larvae are legless and have black heads. Larvae feed for

about 14 days and pupate near the surface of the medium. Adults live only about a week. Under greenhouse conditions, about 20-25 days are required to complete a generation.

Shore flies also are small gnats but have short antennae, red eyes, and heavier, darker bodies. A pair of smoky wings with several clear spots can be seen when looking closely at the insect. They are good fliers and can be seen resting on most any surface in the greenhouse. They resemble winged aphids but aphids have two pairs of wings and the distinctive, tube-like cornicles on the abdomen, and do not move as quickly.

The life cycle is similar to that of the fungus gnat. The yellow to brown larvae, which may be up to 1/4" long, differ in having no apparent head. Both larvae and adults feed mostly on algae growing on media, floors, benches, or pots. Some have been seen boring directly into the base of small plants. Damaged plants will easily break off at the soil surface. The adults may spread soil pathogens inside the greenhouse.

CORN

BURNDOWN CONTROL OF RYEGRASS IN NO-TILLAGE CORN PAYS DIVIDENDS FOR FUTURE WHEAT CROPS by James R. Martin, Extension Weed Scientist

Achieving good burndown control of ryegrass not only improves the chance of increasing corn yield, but may also may help in limit further increase or spread of this weed from seed produced from escaped plants. This could be good news for growers who plant wheat into no-till corn fields that have a history of ryegrass.

An attempt was made to evaluate the long-term benefits of burndown control of ryegrass in no-till corn. We used visual ratings of the amount of ryegrass that was re-infested with seed produced from plants that escaped burndown herbicide treatments. Plots that were sprayed last spring with Gramoxone Extra at 1.5 pt/A or Gramoxone Extra at 1.5 pt/A plus Atrazine at 3 pt/A provided only 33 to 57 % burndown control of ryegrass. Ryegrass plants that escaped these treatments produced enough seed that eventually re-infested about 70 to 78 % of the plot area.

Applying sequential sprays of Gramoxone Extra at 1.5 pt/A (early preplant followed by preemergence at planting with Atrazine at 3 pt/A), or a single application of Roundup Ultra at 3pt/A plus

Atrazine at 3 pt/A resulted in at least 90% control in no-till corn last season. The amount of ryegrass that was re-infested in plots treated last season with the sequential treatments or single spray of Roundup was 22 and 5%, respectively. While it is unlikely that achieving complete burndown control of ryegrass in a single season in no-till corn will eliminate the problem for the following wheat crop, it should limit the infestation level and further spread of this weed.

SOYBEAN

EXPECT LOWER SOYBEAN SEED QUALITY THIS PLANTING SEASON

by Jim Herbek, UK Grain Crops Specialist

Soybean seed quality is considerably lower this year; probably the worst in recent memory. Germination tests are commonly averaging 80-85% (10-15% below normal), but some seed lots have tested as low as 60 to 70%. Rapid maturity of soybeans last fall with hot, dry conditions at harvest often resulted in low seed moisture content at harvest. Dry seeds are highly susceptible to mechanical damage at harvest and handling which results in more split seeds, cracked seedcoats and damaged embryos which reduces the seed germination and vigor. Other problems which also contributed to lower soybean seed quality in some regions were an early frost that resulted in some immature seed and diseases that also reduced seed quality.

The low seed quality is a fairly widespread problem even within the commercial seed industry. Seed companies are finding it difficult to meet their seed germination targets of 90% and many have lowered their germination standard to 80% to meet the heavy demand for seed. Certain high-demand, low-supply varieties may be even tagged at 75% germination (with appropriate price discounts) to meet seed demands.

With the lower seed germination, growers should be aware that seed vigor is also low. Average vigor (stress) tests are averaging 10-20% below the germination test. In some cases, vigor tests are considerably lower with stress test scores of 50 to 60% or less. Whereas, the listed germination % is a "warm test" of the number of live, viable seeds; the vigor test is an indicator of the seed's ability to establish seedling emergence under stressful planting conditions (cold, wet soils; poor seedbed, crusting, etc.). Planting low quality seed under stressful conditions further reduces germination and emergence.

It is important to check the seed tag this year to determine the quality of the seed you have bought. If you have saved your own seed for planting, it is particularly important to get a germination test and also preferably a vigor test to determine if the seed is suitable for planting. Even if you had a germination test last fall after harvest, you need to get a germination test again this spring since the seed quality of soybeans has deteriorated even further during storage over the last few months.

With lower quality seed this year, consider the following:

- 1) Get soybean seed bought now, if you haven't already. Good quality seed of certain varieties will be in low supply.
- 2) Increase seeding rates to compensate for lower quality seed (75-85% germination test). To determine your adjusted seeding rate, divide your seeding rate goal by the % germination. For example, if your seeding rate goal is 6 seeds per foot of row and germination is 80%, then divide 6 seeds by 0.8 to get an adjusted seeding rate of 7 ½ seeds per foot of row.
- 3) Do not plant seed with germination below 70%. It would be better to find higher quality seed or you may end up with poor stands and incur additional costs for replanting.
- 4) Do not plant lower quality seed in stressful planting conditions because of the lower seed vigor. Plant only when soil temperatures are 65 degrees F or above.
- 5) Handle seed carefully to avoid further damage to the low quality, fragile seed.
- 6) There are pros and cons to treating this year's low quality seed. Seed treatments will help protect poor quality seed from soil-borne pathogens if planted under stressful conditions. They also can increase seed germination by 10-20% if infected with seed-borne diseases. However, seed treatments do little to increase germination due to mechanical damage. Seed treatment cannot turn low quality seed into high quality seed. It can only protect the quality that is already there.

PASTURE

BUTTERCUPS IN PASTURE FIELDS by J. D. Green

One of the first signs of spring is the yellow flowers that emerge from buttercup plants (*Ranunculus* spp.) Buttercups tend to thrive in low areas of fields, generally in soils that remain wet for long periods of time and in fields with poor stands of desirable forages. In fact, many fields that have heavy buttercup populations are fields that are

heavily grazed by livestock.

Buttercups are tufted perennials that produce shiny yellow petals. New buttercup seed are often produced at the time petals are showy. There are four different species of buttercups that may be found in Kentucky: small flower buttercup (*Ranunculus abortivus*), bulbous buttercup (*Ranunculus bulbosus*), creeping buttercup (*Ranunculus repens*), and tall buttercup (*Ranunculus acris*). Each of these species differ somewhat in their vegetative leaf characteristics.

Pasture management practices that improve growth of desirable plants help to compete against emergence and growth of this plant. Also, avoid excess overgrazing by animals. Mowing fields or clipping plants close to the ground in the early spring before buttercup plants can produce flowers may help reduce the amount of seed produced, but mowing alone will not totally eliminate seed production. If chemical control options are desired, Banvel (dicamba), WeedMaster (dicamba + 2,4-D), Crossbow (triclopyr+2,4-D), or Ally (metsulfuron) can be used in grass pastures. Legumes interseeded with grass pastures can be severely injured or killed by these herbicide products. Apply a herbicide in the early spring (February - March) when buttercup plants are small and actively growing, but before flowers are produced. For best herbicide activity wait until daytime air temperatures are greater than 50 F for two to three consecutive days. Consult the herbicide label for further information on grazing restrictions or other possible limitations.

For fields heavily infested with buttercup a variety of control tactics may be needed. Use a herbicide to help reduce the population of buttercup plants and use good pasture management techniques to thicken the stand of desirable forages.

GREENHOUSE CROPS

BEDDING PLANT DISEASES

by John Hartman

With peak spring flowering annual transplant sales occurring in the coming weeks, greenhouse bedding plant growers will want to continue their vigilance in recognizing and managing diseases. Bedding plant diseases often thrive in the greenhouse environment and they can quickly ruin the crops. The following discussion describes some of the more common greenhouse bedding plant diseases.

Bacterial spots and blights. Bacterial diseases are often introduced into the greenhouse on infected,

but symptomless plants. Warm, humid growing conditions with splashing water or insect activity to move the bacteria from plant to plant favor disease development. Bacterial blight of geranium causes leaf spots and blight, stem decay, and plant collapse. Some bacterial diseases result in circular or angular spots developing on the foliage. Copper-based fungicides may slow down the spread of disease, but bacterial diseases of bedding plants are best managed by excluding them from the greenhouse from the start. Once discovered, infected plants should be removed and destroyed. Overhead watering should be avoided.

Gray mold. Caused by the fungus *Botrytis cinerea*, gray mold is a common disease problem that affects many different kinds of greenhouse-grown bedding plants. *Botrytis* causes leaf and flower spots and blights, bud rot, stem and crown rot, and cutting rot. Infected tissue turns brown and decays. Under humid greenhouse conditions, the fungus produces large numbers of spores on infected tissues or on dead plant parts. Since high greenhouse humidity is needed for fungal sporulation and new infection, it is essential for growers to maintain good ventilation and air movement in the greenhouse and to not allow moisture to condense on the plants or on the underside of the greenhouse cover where it can drip on the plants. Sanitation, the removal of dead and dying leaves and plant parts lying on or under the greenhouse benches, is essential. Fungicides containing azoxystrobin, chlorothalonil, or thiophanate-methyl can help suppress gray mold on ornamental bedding plants grown in the greenhouse.

Powdery mildew. There are several different powdery mildew fungi that can produce the white powdery fungal signs of this disease on ornamental bedding plants in the greenhouse. Cool, humid conditions in the greenhouse favor the growth of powdery mildew. Infected leaves and shoots eventually die. Fungicides containing azoxystrobin and piperalin can be used for powdery mildew management on greenhouse ornamental bedding plants.

Virus diseases. Impatiens necrotic spot (INSV) and Tomato spotted wilt (TSWV) viruses are two viruses that can devastate ornamental bedding plants in the greenhouse. Both viruses have wide and diverse host ranges. Symptoms include spotting and death of leaf and stem tissue, leaf mosaic, ring spots, yellowing, stunting, and plant death. These two viruses are transmitted by thrips insects. To control INSV and TSWV, growers must exclude infected plants from the greenhouse (buy certified disease-free cuttings and plug plants), remove and destroy any infected plants that occur, and manage the thrips which vector the viruses. Other viruses such as Tobacco mosaic (TMV) and

Cucumber mosaic (CMV) can also affect ornamental bedding plants in the greenhouse. Because these viruses also attack tobacco and many vegetables, we do not recommend the production of ornamentals, tobacco and vegetables in the same house.

Root and crown rot diseases. In recent years, crown, stem, and root rots caused by the fungus *Rhizoctonia* have devastated flowering annuals in outdoor beds. In many cases, the plants came from the greenhouse already infected. Growers need to avoid contamination of the soil and excess soil moisture to prevent disease in the greenhouse. In the greenhouse, *Rhizoctonia* on ornamentals is suppressed by chemicals containing thiophanate-methyl or azoxystrobin. Water molds such as *Pythium* and *Phytophthora* cause damping-off, root and crown rot, and wilt and collapse of infected plants. These diseases are favored by wet soil conditions which occur when plants are over-watered or grown in a "float" system. It is essential that greenhouse soil (the growing medium) be pathogen-free and well-drained and flooding must be avoided. Chemical drenches for ornamentals containing mefenoxam or trifloxystrobin may also suppress these fungi, but only in well-drained soils. Bedding plants such as geranium, pansy, petunia, vinca, and viola are susceptible to black root rot caused by the fungus *Thielaviopsis*. Infected plants will be yellowed and stunted with blackened roots. For management, begin with pathogen-free soil and avoid plant stresses. Black root rot is difficult to control, but the chemicals thiophanate-methyl and triflumazole have some efficacy and are cleared for use on bedding plants.

Cultural and chemical controls. Cultural practices remain the first line of defense against diseases of bedding plants in the greenhouse. Growers must strive to:

- Exclude pathogens, by using clean, pathogen-free soils, pots, seeds, cuttings and plug plants.
- Use sanitation (remove diseased and dead plant material from the greenhouse) to reduce sources of inoculum.
- Manipulate the greenhouse environment (avoid wet soils, avoid humid air) to make conditions less favorable for disease.
- Manage insect vectors and even workers that can spread diseases.

For many diseases of ornamental bedding plants grown in greenhouses there are chemical control options. The materials listed here are not cleared for use on all ornamentals - growers must read the fungicide label carefully to determine which ornamentals are listed. **Most of these chemicals**

are not cleared for use on greenhouse vegetables, fruits, and tobacco.

SPRAY PROGRAM FOR TOMATO TRANSPLANT PRODUCTION IN A GREENHOUSE SYSTEM

By William Nesmith

Many of the tomato transplants used in commercial tomato production in Kentucky are produced in Kentucky in the many greenhouses that are available. A regular spray program is an important step in the production of transplants in a greenhouse system for use in commercial tomato production. Sanitation steps and strict management of heat and ventilation to maintain low humidity are also important. But, under Kentucky's highly variable weather conditions and with the facilities being used, there will still be periods of high humidity and wet plants, which will favor diseases, so environmental management alone is usually not adequate. During wet conditions, a spray program to prevent disease build up is especially important, and should begin no later than with the onset of the first symptoms. However, my experience has been that few growers can find those first symptoms, even if they are scouting the seedlings regularly, and that they are better served by a more regimented program of regular, weekly sprays that involve fixed-copper and one or more fungicides.

In Kentucky, the spray program is needed to aid in the control of the following diseases: Bacterial Diseases (Spot, Speck, and Canker), Stem Diseases (Botrytis Stem Blight/Canker and Sclerotinia Timber Rot), and the Foliar Leaf Blights/Spots (mainly Early Blight, Late Blight, and Septoria). Below is a spray schedule that, if followed , should greatly reduce losses to these diseases.

Kocide 101 is a copper-containing fungicide, that is labeled for the greenhouse site and tomato seedlings, and it will aid in the control of bacterial blights of tomatoes, plus help with some fungal diseases. It is labeled at 4 to 6 Tablespoons per 1000 sq ft of greenhouse area using no less than 3 gallons of water per 1000 sq ft to insure coverage. Application can begin as soon as seedlings emerge and be repeated at weekly intervals. I have rarely seen phytotoxicity with this chemical, but it does occur. Other formulations of fixed copper may also be labeled for the greenhouse and tomatoes, so consult their labels closely if you use them.

Mancozeb-containing fungicides are labeled for the greenhouse site and for seedlings, but the label is vague on starting times due to the potential of phytotoxicity. Mancozeb has activity against a

broad range of fungi, but not all, plus it will improve the control of bacterial diseases when used in combination with a copper-containing fungicides. Thus mancozeb can be tank-mix with Kocide once the seedlings are large enough to tolerate the mancozeb. Mancozeb can be used alone, also. Mancozeb will help control early blight, late blight, Septoria leaf spot, and gray leaf mold. The label does not give a specific rate for the greenhouse, so you have to calculate/interpellate from the field rate of 1.5 to 3.0 lbs/A. Our experience for the greenhouse has been to use 1 to 3 teaspoons/gallon using no less than 3 gallons of water per 1000 sq ft of seedlings to insure complete coverage, with some running down the stems. Mancozeb has the greater potential for phytotoxicity on small tender plants, so with the first sprays or with major rate changes, test it on a small sample of seedlings (spray half of the tray at several locations in the greenhouse) and wait three days before spraying the whole house.

Botran 75 W is labeled for tomatoes in the greenhouse, and it can be very helpful in the control of diseases caused by Botrytis and Sclerotinia. It is labeled at 1.0 lb/100 gallons (1 Tablespoon per gallon using 1 to 3 gallons/ 1000 sq ft of seedlings). **Do not mix it with other fungicides!** It is important to make this application as a fine spray, that covers stems as well as leaves. To avoid damage to small seedlings, however, do not allow excessive spray to pool at base of stems. Some phytotoxicity (burn) often occurs, but I have seen cases where the damage was acceptable when compared against the need to control epidemics of Sclerotinia. During periods of protracted cool wet weather, a lot of Sclerotinia inoculum can be coming into our greenhouses from nearby fields. This treatment can be repeated weakly, with up to 4 applications. Note: Benlate is no longer labeled for use in greenhouses.

I do not recommending the use of Exotherm Termil (a smoke form containing 20% chlorothalonil) on tomato seedling/transplant production, basically because it can cause serious injury with temperatures above 75F which we often experience. We do recommend this chemical for fresh-market tomato production in the greenhouse, however, after transplanting. Fresh market production in the greenhouse and transplant production are different, so do not become confused!

Hardening-off Sprays: Because copper-resistant strains of several tomato bacterial diseases are often present, I strongly urge growers to make one or more applications of Streptomycin during the hardening-off period (once the plants are moved outside the greenhouse but prior to transplanting in

the field). The labeled rates are Streptomycin 17 or 21% @ 1 lb/100 gallons of water or 2 teaspoons/gallon using 3 or more gallons per 1000 sq ft of seedlings, repeated at 4 to 5 day intervals. The reentry allows the plants to be handled within 12 hours, so this fits our production well, making one application the day they are placed out to harden and another four or five days later, close to transplanting. Also, we all need to be aware that the bactericide Streptomycin is not labeled for the greenhouse sites on any crop, and it is not labeled in the field for tomatoes. Consequently, there is only one place in tomato transplant production that this important bacterial control agent can be used legally - while the plants are outside the greenhouse hardening-off, and before transplanting into the field.

LAWN & TURF

CHANGES IN CHLOROTHALONIL LABEL FOR TURF DISEASE CONTROL by Paul Vincelli

Labels for products containing chlorothalonil have been changed significantly recently. These changes are a result of ongoing efforts to reduce overall exposure of the public to older active ingredients, thus bringing these materials into safety standards outlined in the Food Quality Protection Act. Chlorothalonil can be found in such products as Daconil, Chlorostar, and Manicure, and Concorde SST.

The following limitations are on newly manufactured Daconil Ultrex; equivalent changes on an active-ingredient basis are in effect for other formulations of chlorothalonil.

Seasonal Maximum for Daconil Ultrex

Site	Amount of product per acre per year*	Amount of product per 1000 sq ft per year
Putting greens	89 lb (73 lbs ai)	2.0 lb
Tees	63 lb (52 lbs ai)	1.4 lb
Fairways	32 lb (26 lbs ai)	0.73 lb

*ai = active ingredient

The product can be applied no more than twice each year at 14 lbs Daconil Ultrex/A (11.3 lb ai); this is equivalent to 5.1 oz/1000 sq ft. Otherwise, the maximum labeled rate is 8.8 lbs Daconil Ultrex/A (7.3 lb ai); this is equivalent to 3.2 oz/1000 sq ft. The minimum spray interval is 7 days (14 days at

the 14 lb/A rate).

In my research last year with dollar spot, brown patch, and gray leaf spot, performance of Daconil Ultrex at 3.2 oz/100 sq ft was comparable to the previously labeled 3.7 oz rate. However, not enough research has been done to know whether the lower rate will consistently provide the same performance as users came to expect with the previous use rate. Research will continue this summer at the UK Turf Center to address this question.

TREES

SOUTHERN PINE BEETLE OUTLOOK 2001 by Lee Townsend and Lynne Rieske-Kinney UK Forest Entomologist

The current southern pine beetle (SPB) outbreak has devastated pines in many areas of eastern and southeastern Kentucky during 2000 and samples of damage have been received from many parts of the Commonwealth, as well.

The stage for this outbreak was set by a number of factors, primary among them were:

- ! relatively mild winters during the past few years
- ! ice storms of 1998
- ! a serious drought during 1999 that severely stressed trees, especially in normally dry sites
- ! and a pine population that was at a very susceptible age (at least 15 years old) for insect attack.

This insect will attack all species of pine but prefers loblolly, shortleaf, Virginia, and pitch pine. In outbreak situations, tree species that are normally not preferred as hosts can be attacked, as well. Consequently, white pine have been hit hard, and on occasion, Colorado blue spruce has been attacked.

What are the prospects for 2001?

This winter (December 2000 - February 2001) (average temperature 33° F) has been colder than the previous four (38.4, 39.9, 40.1, and 38.3° F, respectively). However, temperatures need to be at or below 0° F, for several days to kill a significant number of developing beetles. The winter temperatures have not been low enough to have a major impact.

Simple competition among developing southern pine beetles in trees probably will have a larger effect. Beetles surviving in heavily infested trees frequently are smaller and produce fewer offspring. This can result in a decline in numbers in

ensuing years. However the biggest factor simply may be a lack of suitable pines (in the proper age category) due to heavy tree mortality. Frequently, a lack of suitable hosts also contributes to bark beetle crash after an outbreak in fringe areas like Kentucky, they simply have eaten up their food. Finally, natural enemies also will begin to kill a larger proportion of SPBs than they did earlier in the cycle.

This points to a probable downturn in the SPB populations, but the damage has already been done. The population is crashing under its own staggering weight. In spite of this, there is likely to be a significant beetle flight this spring. Severely infested trees can produce as many as 150 beetles per square foot of trunk surface. That can be 15,000 beetles from a 12" diameter - 50' tall tree. Even at 99% mortality from all that can go wrong, there will be a lot of beetles flying in search of suitable hosts.

What stages of SPB are present in infested trees now?

Eggs, larvae, pupae, and adults can be found in trees during the winter. There are several generations each year so there is no real synchrony to the life cycle. The winter here has stopped flight but adults will emerge and fly once temperatures climb above 55° F. Spring attack begins about the time dogwoods flower. Newly emerged beetles can move to nearby trees or they may fly some distance before attempting to colonize a tree.

What management alternatives are available?

In some instances, heavily attacked trees have been felled and removed or destroyed. This eliminates them as a source of beetles to attack nearby pines; however, infested trees remaining in the area will produce beetles that will fly this spring.

If trees have been felled but not removed, a coarse, low pressure trunk spray of lindane, Dursban (chlorpyrifos), or Astro (permethrin) to wet the bark of the entire trunk should kill many of the beetles ready to emerge. The trunk will need to be turned so that the entire surface can be treated. This treatment should be applied by mid-April.

SPB attacks in home landscapes, on golf courses, and other non-forest settings have killed many valuable trees. Trunk sprays, as described above, can provide some protection from infestation / re-infestation of surviving trees. Complete coverage (crown, stem, base) is essential for protection. While

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SPB adults will be flying over much of the spring and summer, the spring flight is most the synchronized and is the best target for a trunk spray.

Could this outbreak have been prevented?

Climatic factors, drought and mild winter, play a major role in SPB survival and set the stage for outbreak. There was no way to manipulate this. However, forest management practices to thin pine stands for optimum growth and removal of stressed trees that are prone to SPB attack could have greatly reduced the numbers of trees at risk in some areas.

DIAGNOSTIC LAB HIGHLIGHTS by Julie Beale and Paul Bachi

We have seen several wheat samples in the Diagnostic lab during the past week, including

samples showing cold injury and several cases of barley yellow dwarf virus. The majority of samples, however, have been woody landscape plants showing winter injury. Typical hosts include boxwood, rhododendron, holly and Alberta spruce. We have also seen holly with black root rot, scab on peach (old twig cankers), and sooty mold on various tree species. Greenhouse specimens have included impatiens necrotic spot virus on impatiens and Botrytis blight on begonia, geranium and angelonia.


Lee Townsend, Extension Entomologist

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