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ANNOUNCEMENTS

2009 IPM TRAINGING MARCH 4
By Patricia Lucas

The 2009 IPM Training School will be held on Wednesday, March 4, at the University of Kentucky Research and Education Center in Princeton. Registration will open at 8:30 AM with the meeting starting at 9:00 AM and ending at 3:30 PM.
The program will open with an up-date on what is new in weed control for 2009 presented by Dr. Jim Martin. The morning will finish with presentations on Fungicide Use in Corn and Soybeans by Extension Plan Pathologies Dr. Don Hershman and Dr. Paul Vincelli. The morning will also include an update on UK Fertilizer Recommendations by Dr. Lloyd Murdock. Lunch will be provided and participants will be invited to view some the equipment used for small plot work at the University of Kentucky Research & Education Center. Dr. Sam McNeill and John Earnest , Agriculture Engineers, and John James , Department of Plant and Soil Science Research Analyst, will be discussing the equipment. The day will end with Dr. John Grove providing information on how to improve nutrient use efficiency in corn and soybeans and Extension Entomologist, Dr. Doug Johnson and Dr.Ric Bessin discussing corn and soybean insect issues.

The program is free of charge and lunch will be provided. **To guarantee a lunch, call MaryAnn Kelley at (270) 365-7541 extension 216 or e-mail plucas@uky.edu before March 3.**

The program has been approved for 5.5 CEU's for certified crop advisors (2-Pest Management, 1.5-Crop Management, 1.5 Nutrient Management and .5 Professional Development) and one specific and two general hours have been approved for pesticide applicators in categories 1A, 10 and 12.

TOBACCO

MANAGING DISEASES ON TOBACCO SEEDLINGS IN 2009
By Kenny Seebold

It won't be long before it will be time for many of our growers to prepare greenhouses and outdoor float beds and start producing tobacco transplants.

Higher production costs associated with increased prices of fuel and other inputs are among the problems faced by tobacco producers in Kentucky. Losses to disease in the float system could take an additional toll on our growers' bottom line. Planning and preparation now can lead to better disease control and better yields of transplants in the spring.

The float system is the most widely used means of producing tobacco transplants in Kentucky. This system is generally superior to traditional plant beds, but creates ideal conditions for some important diseases. Water in float bays favors diseases like Pythium root rot, while high plant populations and densely packed trays favor a number of leaf diseases on tobacco seedlings.

A preventive approach is a must to be successful against the pathogens that we encounter in the float system. The disease-conducive environment and limited number of fungicide tools dictate this type of approach. Here are some considerations in developing a preventive disease management strategy:

- Avoid the introduction of plant pathogens into the float system. Water from ponds or creeks can harbor fungi like *Pythium* or the black shank pathogen that devastate a float bed. Keep soil out of float bays – this can also cause certain plant pathogens to be introduced into the system. Produce your own plants, or buy from a Kentucky source if at all possible. Historically, blue mold has been introduced into KY from plug plants that originated in Florida. Those growers that still utilize the plug-and-transfer system should consider buying KY-grown plugs or those produced in northern areas. Contact your dealer or the UK Cooperative Extension Service for more information.

- Seed into clean, sanitized trays. New trays will not harbor plant pathogens, but re-used trays pose more of a risk. Trays can be sanitized by dipping or spraying trays with a 10% bleach solution. Afterward, cover trays and allow them to stand overnight, and follow up with a good rinse to remove bleach residue. Trays that have been used for several years will be difficult to sanitize effectively with bleach. Steaming older trays at 165-175 °F for 30 minutes is the most effective way to eradicate pathogens, but watch temperature and steaming time carefully to avoid damage to trays.

- Dispose of unused or diseased plants quickly and properly. Bury or burn the plants, or discard them at least 100 yards from float beds or tobacco fields.

- Keep your transplants as stress-free as possible. Avoid temperature extremes and keep fertilizer levels in recommended ranges. Plants that are under- or over-fertilized are more susceptible to diseases in general.

- Maintain good air movement through the use of side vents and fans. Keep the area around float beds weed-free. Good airflow promotes rapid drying of foliage, creating less favorable conditions for diseases.

- When clipping plants, use a high-vacuum clipper to avoid the buildup of leaf matter in float trays. Some pathogens use leaf debris as a food base to become established and then spread in the float system. Sanitize your mower regularly with bleach to avoid pathogen spread.

- Consider a regular fungicide program to control root and leaf diseases. Fungicides are cheap insurance considering the high value of your transplants. Consult ID-160, the 2009 Kentucky-Tennessee Tobacco Production Guide, for specific recommendations.

Disease-free transplants pay dividends down the road because they are more vigorous and less prone to attack by pathogens in the field. Proper management of diseases in the float system will help insure that your tobacco crop gets off to a good start.

CORN/SOYBEAN/SMALL GRAIN

SUPPLEMENTAL FOR HEADLINE® FUNGICIDE FOR "PLANT HEALTH": WILL IT IMPROVE CORN, SOYBEAN AND SMALL GRAIN HEALTH?

By Paul Vincelli, Don Hershman, and Chad Lee*
Departments of Plant Pathology and *Plant and Soil Sciences

A couple of weeks ago, we learned of a supplemental label for Headline® fungicide for use on several crops for "disease control and plant health". The impacted crops grown in Kentucky are corn, small grains (barley, rye and wheat), and soybean, as well as other edible legumes. Headline® and related strobilurin fungicides (Quadris®, Quilt®, and Stratego®) provide excellent control of certain fungal diseases of the above crops. In Kentucky, for example, use of these products to control gray leaf spot and/or northern leaf blight in corn, frogeye leaf spot and brown spot of soybean, and tan spot and leaf rust of wheat makes sense when the risk of disease is high. However, this new supplemental label makes claims that go way beyond disease control.

Claims Made on the New Supplemental Label

The supplemental label indicates that, through preventive applications of Headline® to crops, "The plant health benefits may include improved host plant tolerance to yield-robbing environmental stresses, such as drought, heat, cold temperatures, and ozone damage". The supplemental label also claims that "Headline can improve plant utilization of nitrogen and can increase tolerance to bacterial and viral infections. These benefits often translate to healthier plants producing greater yields at harvest, especially under stressful conditions."

The supplemental label also claims that additional specific benefits can occur, including:
Improved stalk or straw strength and better harvestability (barley, corn, rye, wheat);
Induced tolerance to stalk diseases (corn);
Better tolerance to hail (corn);
More uniform seed size (corn, soybean, and edible legumes);
Better seed quality (soybean and edible legumes).

Will "Plant Health" Be Improved?

Based on publically available research reports, we see very little evidence that Headline® or other strobilurin fungicides should be applied to any of the above crops for any reason other than disease control. To date, no data have been circulated in either the scientific or farm communities which suggest that any strobilurin product, including Headline®, can reliably live up to the claims made for stress tolerance under field conditions.

Claims of stress tolerance sound exciting but, based on the data we have seen, deserve to be viewed with cautious skepticism. There are certainly studies in the laboratory, the greenhouse, and occasionally in the field that show beneficial physiological changes in crops treated with strobilurin fungicides. But don't assume that the beneficial changes observed in those studies result in increased yield under field conditions. When a "greening effect" and/or yield improvement is observed in a treated crop (in the absence of significant disease pressure), it is assumed that stress tolerance and/or improved "plant health" (apart from disease control) is at work. This isn't necessarily true. In order for any real-world stress tolerance claims to pass muster, scientifically, it is necessary to conduct replicated field studies where the appropriate environment, plant, and crop measurements are made, and appropriate experimental controls are in place. We do not believe these data exist in sufficient quantity to support the above stress tolerance claims. Certainly, it is inappropriate to draw conclusions about stress tolerance based solely on crop appearance and yield. For example, we have observed the greening effect in field crops, but it often does not translate to higher yields. We have also observed occasional yield increases in crops (mostly soybean) following a fungicide application, when no obvious disease symptoms were present. But there are a large number of potential reasons why yields are improved in treated crops. Tolerance to one or more stresses is a possibility, but it is also possible that some soil-borne disease or disease complex is being controlled, but we cannot easily observe it. There are many other possible reasons and the only way to know for certain is to conduct the appropriate replicated, controlled field studies.

Let us look at an example from soybean from two replicated studies conducted at the Research and

Education Center where disease pressure was minimal and late season moisture stress was significant (especially in 2007). If Headline® application improves tolerance to drought stress (as per the supplemental label), then the application should improve yield in treated crops. But as can be seen in Table 1, soybean yields were not improved by Headline® in either year. Table 2 shows the results of a similar field trial for corn conducted on a Kentucky farm under drought conditions. You can see that Headline® provided no yield bump.

Table 1. Results of Headline® application (6.0 fl oz + induce at R3 stage) in soybean where disease pressure was insignificant, under late season moisture stress (UKREC, Princeton, KY, 2007-2008).

	2007	**2008**
Treatment	**Yield (bu/acre)**	**Yield (bu/acre)**
Check	24.5	51.5
Headline®	23.8	53.0
Statistical result (LSD, P=0.05)	No statistical difference	No statistical difference

Table 2. Results of Headline® application in corn where disease pressure was insignificant, under late-season moisture stress (Logan County, KY, 2007)

Treatment	**% gray leaf spot***	**Yield (bu/acre)**
Check	1.3	160
Headline®	2.0	155
Statistical result (LSD, P=0.05)	No statistical difference	No statistical difference

*Disease assessed on ear leaf at half milk line.

It is important to emphasize that the data in Tables 1 and 2 are merely examples. The above data are typical of what has been seen over and over in a large number of university-conducted trials conducted over the past several years in corn, soybean, and small grains. If Headline® regularly improves yields by imparting stress tolerance to crops in the absence of disease, then more complete and convincing proof needs to be made public. And in the world of science, claims based on evidence that has not been made public are treated with suspicion.

The claims about improved stalk health in corn are not unreasonable. Occasionally (and we stress the word "occasionally"), applications of strobilurin fungicides have been shown to improve stalk strength and/or reduce stalk rots in university-conducted field trials. However, in our experience, that improvement in stalk health relates to control of foliar diseases (gray leaf spot, for example). You see, if foliar diseases are aggressively attacking the plant during grain fill, then the corn plant will attempt to fill the grain by "cannibalizing" the reserves in its own stalk. That weakens the stalk and can result in more aggressive stalk rots as well as reduced stalk strength. So, if foliar diseases are killing the upper and middle foliage during grain-fill, then it makes sense that a fungicide like Headline® might sometimes improve stalk health, which it sometimes does. But note carefully: this benefit still relates to control of foliar diseases. And like we said above, strobilurin fungicides are very good for controlling foliar diseases like gray leaf spot and northern leaf blight of corn *if these diseases are present*.

What about a fungicide enhancing tolerance to hail? Actually, conducting a study that tests for this type of benefit is more complex than you may realize. You must have the right kind of experimental design or you could be misled by the results. The only study we are aware of that tests this claim with a valid experimental design is one conducted in 2008 by Dr. Carl Bradley and colleagues at the University of Illinois. In that study, researchers used a weed-eater to simulate hail damage. In that study, they found absolutely no yield benefit from Headline®, Quadris® or Quilt® when applied following simulated hail damage.

Is there a downside?

Producers should be aware that sometimes the late-season "greening" effect observed with strobilurin fungicides can result in higher grain moisture and therefore additional drying costs and a slower (more expensive) harvest. Conversely, if crop harvest is delayed until the desired harvest moisture content is reached, there can be a yield and/or quality penalty, depending on the crop. For example, delaying wheat harvest will result in delayed planting of

doublecrop soybean, which can lead to lower yields in soybean. In soybean, if harvest is delayed, pod and stem blight levels may increase, which can reduce the quality of grain destined for seed use. This may necessitate additional grain clean-out and/or the use of seed-treatment fungicides prior to planting next season. (Strobilurins, in general, do not do a good job in controlling soybean pod and stem blight). The bottom line is that fungicides applied to corn, soybean, and wheat will sometimes increase production costs.

Another concern specifically relating to the "plant health" issue is that the use of a fungicide when disease activity is too low to affect yield increases the risk of fungicide resistance. It is because anytime you expose a fungus to the fungicide, even when fungal activity is low, you increase the selection pressure on the fungus towards resistance. Resistance to strobilurin fungicides is an important concern worldwide, and the use of any strobilurin fungicide for "plant health" reasons increases the risk of developing strobilurin-resistant gray leaf spot. Use of strobilurins may also incite flares in certain insect and mite populations under field conditions, because fungicides can sometimes suppress fungi that kill these arthropod pests.

Bottom line

The strobilurin fungicides are very good for control of specific crop diseases (see product labels for a list), if they are present at high enough levels (or the risk is high enough) to reduce yields. However, applying a strobilurin fungicide for "plant health" or stress tolerance reasons alone—with little or no threat from foliar diseases—doesn't make sense to us, based on our extensive study of the best available information. Land-Grant University trials, thus far, generally do not support claims of reliable improvement in crop yield under stress conditions from an application of Headline®, or any other strobilurin fungicide. Nor have fungicide manufacturers provided sufficient field evidence in support of these claims. In fact, the vast majority of industry data show yield impacts (usually in side by side comparisons) associated with specific fungicide treatments, but provide no measurements of diseases or stresses. The upshot of this is that there is absolutely no way to know what the cause of apparent yield improvement is in the vast majority of industry studies. Thus, at this time, we do not feel there is a scientifically defensible basis for assertions of improved plant health/stress tolerance in the absence of the diseases the fungicide was originally developed to control.

FRUIT CROPS

MANAGE BLACKBERRY AND RASPBERRY ANTHRACNOSE AND CANE BLIGHT IN EARLY SPRING

By John Hartman

Blackberries, raspberries and black raspberries grown in Kentucky are susceptible to stem cankers caused by fungi. Crop yields are reduced due to cane infections girdling the stems leading to wilting and dieback or due to partial girdling of stems resulting in loss of vigor and reduction in fruit size and quality. Anthracnose and other diseases such as cane blight, spur blight, and Septoria cane and leaf spot may cause similar symptoms. Black raspberries are especially susceptible to anthracnose.

Figure 1. Oval, tan lesions such as these on a black raspberry stem harbor fungal spores which can cause new infections.

Symptoms. Anthracnose symptoms are most striking on canes but can also occur on leaves, petioles, flower buds, and fruit. In the spring, reddish purple spots appear on young canes. As the disease progresses, the spots enlarge into an oval shape and the tan to gray centers become sunken with purplish raised margins (Figure 1). Diseased tissue extends down into the bark and partly girdles the stem. By late summer or early fall, the diseased tissue often cracks. Within these lesions, spores are produced which are spread by running water, splashing rain, and wind. Canes weakened by

anthracnose are more susceptible to winter injury and eventually may die.

On leaves, anthracnose appears as small, irregular, yellowish-white spots. As spots enlarge, they may have a tan center with reddish margins. Spots sometimes drop out, giving a shothole symptom. Fruit infections are not common unless there is a high level of anthracnose in the planting. Infected fruit is typically dry and seedy.

Disease cause and life cycle. Anthracnose is caused by the fungus *Elsinoe veneta* which overwinters on the bark or within lesions on floricanes infected the previous season. In early spring, just as the canes are leafing out, fungal spores are produced on these diseased canes. These spores are blown, rain-splashed, or vectored by insects to young, rapidly growing, succulent shoots where new infections occur. Symptoms appear as small tan lesions in about a week. The primary damage to plants is caused by these early infections. Be aware that highly variable winter and early spring temperatures can caused injury to the stems of some raspberry and blackberry cultivars. These injuries can become points of entry for fungi causing anthracnose and cane cankers.

Apply liquid lime-sulfur or copper hydroxide in late winter/early spring, just as the buds are swelling and leaf tips are beginning to emerge. Fungicide applications are best made when new leaves are exposed only 1/4 to 3/4 inches; if they are larger, there is a risk of fungicide "burn." Later applications would require a half rate which would be less effective. See U.K. Cooperative Extension publication "Midwest Commercial Small Fruit and Grape Spray Guide 2009 (ID-94) for rates and timing. Carefully inspect bramble plantings; now or very soon may be the time to apply fungicides for managing these cane and stem diseases.

Plant clean, disease-free nursery stock. Cut out all diseased canes, cane "handles," and any infections observed on new plants.
Provide good air movement through the planting by removing weeds and spindly canes.

VEGETABLES

INSECTICIDE EFFICACY TABLE FOR VEGETABLES
By Ric Bessin

On the next page is an insecticide efficacy table for vegetable insects that can be used a part of the information needed to select an appropriate insecticide for a particular insect pest or group of pests. However, this is not the only type of information to be used by growers when deciding on a particular insecticide. In addition to the information in the table, growers need to be certain that the vegetable crop they are treating is allowed on the particular pesticide label. In some situations, growers may choose a slightly less efficacious insecticide when attempting to control two or more pest species, when pest levels are low, or to avoid a lengthy Pre Harvest Interval with the more efficacious material.

Ratings provided in the table are for comparison and are relative to other listed products. These assume that the insecticides are applied at the correct timing relative to pest vulnerability, at the correct rate, and with adequate coverage. In some instances certain pesticides are not rated for particular pests as they are not appropriate, do not provide significant control, or little or no information was available. For this reason, this table may evolve as more information becomes available.

Chemical class (IRAC)	Common name	Example Product	Flea Beetle	Colorado potato beetle*	Cucumber beetles	Corn earworm*	European corn borer	Fall armyworm	Cabbage looper	Imported cabbageworm	Diamondback moth*	Squash vine borer	Beet armyworm*	Stink bugs	Squash bug	Aphids*	Thrips	Maggots	Whiteflies*	Cutworms	Wireworms	White grubs	Spider mites*
1A	carbaryl	Sevin	+++	+	+++	+	++	+	+	++	+	-	-	-	-	-	+	-	-	+	-	-	-
	methomyl	Lannate	+	-	-	++	++	+++	++	++	++	-	+	++	++	+	++	-	+	-	-	-	-
	thiodicarb	Larvin	+	-	-	-	++	+++	-	-	-	-	-	+	-	++	-	-	-	-	+	+	-
1B	malathion	Malathion	++	+	++	+	+	+	+	++	+	+	-	+	+	+	+	+	-	+	-	-	+
	chlorpyrifos	Lorsban	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+++	+	-
	acephate	Orthene	-	-	-	-	+++	++	-	-	-	-	-	-	-	++	+	-	+	++	-	-	-
	diazinon	Diazinon	+	+	+	-	-	-	-	-	-	-	-	+	+	+	+	++	-	-	++	-	+
2A	endosulfan	Thionex	+	+	++	+	+	+	+	+	-	++	+	++	++	+	-	-	+	-	-	-	-
3	permethrin	Pounce	+	++	++	++	++	+	++	+++	++	++	+	++	++	+	+	-	+	++	-	-	-
	zeta cypermethrin	Mustang Max	++	+	+++	++	++	++	++	+++	+	++	+	-	-	-	++	-	+	++	-	-	-
	cyfluthrin	Baythroid/Renounce	+	++	-	++	++	+	++	+++	++	++	+	++	-	+	+	-	+	-	-	-	-
	lambda cyhalothrin	Warrior	++	+	+++	++	+++	++	++	+++	+	++	+	++	-	-	++	-	+	++	-	-	-
	esfanvalerate	Asana XL	+	++	++	++	++	+	++	+++	++	+	+	++	++	+	+	-	+	+	-	-	-
	gamma cyhalothrin	Proaxis	++	+	+++	++	+++	++	++	+++	+	++	+	++	-	-	++	-	+	++	-	-	-
	fenpropathrin	Danitol	+	-	++	++	+	+	-	-	-	+	+	+	+	+	+	-	+	+	-	-	++
	bifenthrin	Brigade/Capture	++	-	+++	++	+	+	+	+++	+	++	+	+	+	+	+	+	+	+	++	+	++
4A	imidacloprid	Admire/Provado	+++	+++	++	-	-	-	-	+	-	-	-	-	++	++	+	-	+++	-	+	+	-
	acetamiprid	Assail	-	+++	-	-	-	-	-	-	-	+	-	-	+	++	++	-	+++	-	-	-	-
	clothianidin	Belay/Clutch	+++	+++	-	-	-	-	-	-	-	-	-	-	-	++	-	-	-	-	-	-	-
	thiamethoxam	Platinum/Actara	+++	+++	++	-	-	-	-	+	-	-	-	++	++	++	+	-	+++	-	+	+	-
	dinotefuran	Venom	+++	+++	-	-	-	-	-	-	-	-	-	++	-	-	++	-	+++	-	-	-	-
5	spinosad	SpinTor	-	+++	-	++	-	-	+++	+++	+++	+	++	-	-	-	++	-	-	-	-	-	-
	spinetoram	Radiant	-	+++	-	++	-	-	+++	+++	+++	+	++	-	-	-	++	-	-	-	-	-	-
6	emamectin benzoate	Proclaim	-	-	-	+	+	++	++	++	++	++	+++	-	-	-	-	-	-	+	-	-	-
	abamectin	AgriMek	-	+++	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+++
7C	pyriproxyfen	Knack/Esteem	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+++	-	-	-	-
9B	pymethozine	Fulfill	-	-	-	-	-	-	-	-	-	-	-	-	-	+++	+	-	++	-	-	-	-
9C	Flonicamid	Beleaf	-	-	-	-	-	-	-	-	-	-	-	-	+	+++	-	-	++	-	-	-	-
11	Bt	Dipel	-	++	-	+	++	+	++	+++	+++	+	+	-	-	-	-	-	-	-	-	-	-
18	tebufenozide	Confirm	++	+	+	++	++	++	++	+++	+	+	+++	-	-	-	-	-	-	-	-	-	-
	methoxyfenozide	Intrepid	++	+	+	++	++	++	++	+++	+	+	+++	-	-	-	-	-	-	-	-	-	-
22	Indoxacarb	Avaunt	-	-	-	++	++	++	+++	+++	++	+	+++	-	-	+	+	-	-	-	-	-	-
23	spiromesifen	Oberon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+++	-	-	-	++
23	spirotetramat	Movento	-	-	-	-	-	-	-	-	-	-	-	-	-	+++	-	-	-	-	-	+++	++
25	bifenazate	Acramite	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+++
28	rynaxypyr	Coragen	-	-	-	+++	+++	++	+++	+++	+++	-	++	-	-	-	-	-	-	-	-	-	-
28	flubendiamide	Synapse/ Belt	-	-	-	+++	+++	++	+++	+++	+++	-	++	-	-	-	-	-	-	-	-	-	-

Key		
	-	Ineffective or insufficient data
	+	Somewhat effective
	++	Effective
	+++	Very Effective

* Resistance may exist in some areas

HOUSEHOLD

TINY VARIED CARPET BEETLES IN HOMES NOW
By Lee Townsend

The varied carpet beetle is a common sight in many homes during late winter and early spring. The adult is about 1/16 inch long; the body has an irregular pattern of white, brown, and yellow scales on its wing covers. In older adults the scales that form this pattern wear off so the beetles appear solid brown or black. These beetles are attracted to light and often are found on windowsills.

The larval stage resembles a very small red-brown hairy caterpillar. It can be found in drawers or crawling slowly across counter tops. VCB larvae are scavengers that feed on a variety of products including woolens, carpets, furs, hides, feathers, horns, bones, hair, silk, fish meal, rye or corn meal, red pepper, and cereals. They also may feed on accumulations of dead insects in wall voids, fluorescent light fixtures, and attics.

The vacuum cleaner is one of the best weapons to use against this insect. Rooms should be cleaned often enough to prevent the accumulation of hair, lint and other carpet beetle fodder. This is especially important in households that have pets indoors. Close attention should be given to carpets (especially under furniture), rugs, draperies, upholstered furniture, closets (especially where woolens and furs are stored), heat radiators and registers and associated duct work, corners, cracks, baseboards and moldings, and other hard to reach areas. Open containers of dried foodstuff and pet food should be regularly inspected for signs of carpet beetles and discarded if contaminated.

Crack and crevice treatments along baseboards with products labeled for indoor application against cockroaches and ants can be made after the areas have been cleaned.

BOXELDER BUGS AND SUCH
By Lee Townsend

It's not too early to see red and black boxelder bugs (adults and wingless nymphs) congregating on houses and buildings. They will move in and out of sheltered cracks and crevices to bask in the sun on warmer days. Some may wander inside but their general tendency will be to move outdoors to boxelder and maple as spring comes on. Other overwintering insects will become evident, too including lady beetles and cluster flies. These insects are a temporary nuisance so heroic control efforts are not necessary.

DIAGNOSTIC LAB HIGHLIGHTS

By Julie Beale and Paul Bachi

Recent samples in the PDDL have included injury from high soluble salts on greenhouse tomato transplants; low fertility on greenhouse annual flowers; yellow patch on perennial ryegrass and annual bluegrass; black root rot on holly; and sooty mold (due to an insect infestation) on maple.

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