RUTGERS
New Jersey Agricultural
Experiment Station

Landscape, Nursery & Turf Edition
August 12, 2010

PLANT & PEST ADVISORY

A Rutgers Cooperative Extension Publication

Dormant turf and scorched tree. Photo by Rich Buckley

INSIDE

Renovation and Seeding of Turf

James A. Murphy, Specialist in Turf Management

This has been (still is) a very difficult year for many turfs. As a result, some areas of turf have gone dormant but it is increasingly evident that some areas have suffered severe damage, which will need some form of repair and rejuvenation. If your location has received some rain in recent weeks, the dormant areas should now be showing signs of re-growth. If re-growth is absent or sparse, then repair is probably necessary. I have observed that many severely damaged turf areas occur where the topsoil is very shallow (< 4 inches deep) and the subsoil is severely compacted. Such soil conditions were unable to provide enough water to the turf over sufficiently long enough period of time for the turf to develop physiological dormancy. As result, the grass plants died instead of going dormant. There are also cases where insects and/or diseases also contributed to death.

In any case, plans for repair and rejuvenation efforts need to take place as soon as possible since the prime seeding and sodding period is only a couple weeks away.

From a broad viewpoint, there are two general approaches to consider: 1) overseed the turf or 2) renovate the turf. Approach #1 makes more sense if you simply want to re-establish some turf cover with minimal effort and do not have underlying problems needing correction. Approach #2 is more effort but has more reward in terms of better appearance and ultimately a more durable and persistent turf.

Regardless of the approach you choose, you should have the soil tested (if you haven't already) to make sure pH, nutrients, and organic matter content aren't part of the problem in growing the turf. If you need a lab for this, the URL for the Rutgers Soil Testing Lab is www.njaes.rutgers.edu/soiltestinglab.

Either approach will require some form of aeration/cultivation/tillage to tear up the dead organic debris that was the turf before it died. Tillage will help incorporate any recommended amendments and expose bare ground (soil) that needs to be in contact with seed or sod for repair to be successful.

With approach #1, the objective should be to core-aerate and stir as much soil as possible into the surface organic debris of the former turf. First, apply any recommended amendments, then core-aerate a lot to create holes about 2 inches apart. It is useful to chop up the aeration-cores with a verti-cutter or de-thatcher. Next, spread the seed thorough-

See Turf Renovation of page 2

Turf Renovation from page 1

ly over the area being repaired. Use enough seed that you can actually see the seed fall into the core-aeration holes; most repair failures occur because not enough seed was applied during overseeding. A minimum of 4 pounds per 1000 square feet is recommended; tall fescue overseeding should probably apply 8 to 10 pounds per 1000 square feet. Rake the seed thoroughly into the soil after overseeding.

As for the selection of species, there are a number of choices for turfgrasses in our climate. Seed blends of perennial ryegrass typically work best for overseeding. Although perennial ryegrass establishes easily from seed, you will need to use more advanced varieties to result in more stress tolerant turf. Overseeding mixtures containing some Kentucky bluegrass and/or tall fescue can also be used but the immediate effects will most likely be from the perennial ryegrass in the mixture. Use seed mixture with low percentages (or none) of perennial ryegrass if your goal is to have these other species ultimately dominate in the turf. Most people think Kentucky bluegrass is the most attractive grass; however, this species is best to re-establish from sod (too slow from seed). Tall fescue is considered more stress tolerant but it is not quite as attractive as Kentucky bluegrass. Tall fescue can be established from seed or sod but it is not as easy to establish from seed as is perennial ryegrass. We do not recommend the varieties of tall fescue named 'Kentucky 31' or 'Fawn' for turf. These varieties are more useful as for pasture/forage and do not form a dense attractive turf. Turf managers and home owners will ultimately be frustrated with 'Kentucky 31' or 'Fawn' because of the more frequent mowing requirement. Moreover, many people will be tempted to apply a lot more fertilizer to these varieties to improve density and color of the turf. Fine fescues are another choice especially if you are ultimately interested in lower maintenance turfs. Unfortunately, high quality varieties of fine fescue seed are hard to find and sod is even more difficult to find.

Regardless of the species of grass you choose, you probably need to go to a professional wholesale/retail supplier/landscaper for high quality seed. Typically, big box stores provide seed that is low priced and low to moderate quality, although you can find some better quality seed if you look for it. Also, you can purchase some moderate to high quality varieties of seed at www.seedsuperstore.com.

For approach #2 - if you believe the topsoil is very shallow (< 4 inches) and the subsoil is compacted, this would be a good time to try and correct/improve that problem. First, apply any soil amendments recommended by the lab (fertilizer and/or compost are likely recommendations) and then till those into the soil as deep as feasible. Some landscape contractors have the tillage tools needed for this type of tillage - a heavy duty reverse rototiller is most commonly used. The soil will need a moderate water content (but not wet) for the tillage to go deep into the soil, so some pre-wetting with irrigation may be useful if natural rains aren't enough to moisten and soften the ground.

After amending and tilling, the loosened soil will need to be firmed with light rolling before seeding or sodding. Don't roll if the soil becomes soaked with rain, allow it to dry first. In fact, rain may do a lot of the re-firming for you. Apply a starter fertilizer to the re-firmed soil and rake-in lightly before seeding or sodding. Note that you should use 1/2 rates of fertilizer if you amended the soil with high quality compost or the soil has an inherently high organic matter content.

If you seed, rake lightly again after seeding to work the seed into the soil. If you sod, lightly roll the sod after it is placed to put the sod in good contact with the soil. Applying some type of mulch barrier after seeding is helpful in conserving water and improving seedling emergence and turf development.

Apply water immediately after seeding or sodding and don't let the seed, seedlings, or sod dry out. Light watering one to three times everyday are better at first. Change the frequency of watering to every 2 or 3 days after roots are 2 or more inches deep. Hopefully, irrigation won't be needed any later than mid October.

Plan to reapply 1/4 or 1/2 rates of fertilizer every 2 to 4 weeks to encourage a steady spread and thickening of the grass. Repeat fertilization until the turf development achieves 90 to 100% soil cover. Rapid cover of the soil is important to prevent soil erosion and minimize the invasion of weeds. Fertilization can be cut back dramatically once ground cover approaches 100% and the grass plants have healthy green appearance. Fertilization should not produce an extremely lush, dark green color or force too much growth. Cut back on fertilization rate and/or extend the fertilization frequency if leaf growth is so rapid that the turf requires mowing more than once per week.

As for timing, now is the best time to get started. If you can get the site prep done, you can seed or sod as early as 15 August. Ideally, you don't want to plant much later than 15 September in northern New Jersey and 30 September in southern New Jersey.

For more information, see the factsheets FS108 Renovation of turf and FS584 seeding of Turf available on the web at:
http://njaes.rutgers.edu/pubs/subcategory.asp?cat=5&sub=39
or contact your county extension office:
http://njaes.rutgers.edu/county. ❑

Late Summer Treatments for White Grub Control

Albrecht M. Koppenhöfer, Ph.D., Specialist in Turfgrass Entomology

In areas that have not been treated preventively and that you consider as at risk based on previous history of grub infestations or high adult population observed in June/July you should check on grub populations around mid-August before damage may start showing up. The simplest way to 'sample' is to just pull on the grass in several spots. If there is a lot of grub feeding going on, the root system will be weakened and the grass will be accordingly more loosely attached to the ground. However, if the grubs are still small and the conditions not too hot and dry, the grass will still be well rooted. Accurate determination of grub presence can be done only through examination of the upper 3-4" of soil under the turf. Turf/soil plugs can be sampled with a standard golf course hole cutter (4.25" diam ~ 0.1 ft^2) or cutting a sample with a flat-blade spade (~ 0.25 ft^2). The plugs are broken up and examined on the spot. Because of the grubs' patchy distribution, several samples need to be taken in a grid pattern. Then determine the number of grubs per sample and if possible also the species (based on raster pattern near tip of abdomen) and transform into 'per ft^2'-values.

In landscape turf, 10 grubs per ft^2 is generally considered as the damage threshold for most of our common white grub species (**oriental beetle**, **Japanese beetle**, **northern masked chafer**). However, grass species, management type, and climatic conditions affect the threshold level. Well-maintained tall fescue should be able to tolerate at least 30 per ft^2 without any signs of damage because of its deep root system and ability to regenerate roots at higher temperatures. Perennial ryegrass, on the other hand, is the least tolerant grass species, and 10 grubs per ft^2 can certainly cause damage. Irrespective of turf type, appropriate irrigation during late August into October will increase the turf's tolerance to grub feeding.

If soil sampling has revealed white grub populations, areas with densities above treatment thresholds or ongoing damage may need to be treated. This curative control approach works best if applied while the grubs are still smaller (i.e., mid-August to early September). Later applications tend to be less effective and the results more variable. Monitoring and sampling will help you optimize application timing and allow you to restrict treatments to areas that actually have high grub populations. Curative treatments applied in spring (late April through May) are generally the least effective and rarely justified because the grass can usually outgrow most grub populations at this time.

To suppress grub populations apply clothianidin (Arena), carbaryl (Sevin), or trichlorfon (Dylox, Advanced Lawn 24 Hour Grub Control). For thatchy lawns either dethatch before application or use trichlorfon which binds weakly to organic matter. Trichlorfon is also the fastest acting insecticide and may be the best choice for very late applications or if damage is impending or has already occurred. For early curative applications, clothianidin may be the best choice due to its much lower toxicity and smaller effect on non-target species (arthropod predators and parasites as well as wildlife). If Asiatic garden beetle prevails in an area, do not use carbaryl and use clothianidin at the highest label rate; trichlorfon is effective at normal rates. Use of chlorantraniliprole (Acelepryn), imidacloprid (Merit, Enforce, Imidacloprid), thiamethoxam (Meridian), or halofenozide (Mach 2) is generally not recommended for curative control. While they may still provide good overall control of the more susceptible white grub species, their speed of kill may be too slow to prevent impending turf damage.

For optimal control, the soil should be moist prior to applications. But do not apply to water saturated soil as the insecticide will not be able to move to the target zone. Irrigate with 0.25 to 0.5" (depending on soil type and moisture) of water after applications are made to move the active ingredient into the target zone.

Nematode products for grub control contain the species *Heterorhabditis bacteriophora* (Nemasys G, Terranem, Heteromask). Nematodes also are more effective when applied earlier (i.e., mid-August to early September) because the smaller white grub larvae appear to be more nematode-susceptible and the nematode offspring emerging from the larvae killed by the originally applied nematodes can kill additional larvae. These nematodes can be very effective against Japanese beetle, but are less effective against other common white grub species. To increase nematode efficacy, the soil in the treated areas should be kept at moderate soil moisture for at least 1 week, better even 2 to 3 weeks.

The product Milky Spore is based on a strain of the bacterium *Paenibacillus popilliae* isolated from Japanese beetle larvae; it is ineffective against other white grub species. Milky disease kills white grubs slowly (2–6 weeks), but once established in a white grub population, the spores released from the killed larvae can persist for many years, potentially providing long-term suppression. However, there is little evidence that Milky Spore effectively suppresses Japanese beetle populations.

For more details on white grub biology, monitoring, and management check the recently extensively updated Rutgers Cooperative Extension fact sheet FS 1009 (An Integrated Approach to Insect Management in Turfgrass: White Grubs). ❑

Plant Diagnostic Laboratory Highlights

Richard J. Buckley, Director, Plant Diagnostic Laboratory

Golf Turf

Most years, the dog days of August bring a slowdown in turf submissions. This year seems to be the exception in every way and we are still seeing a handful (50 yesterday!) of plugs every day. As we have been reporting since mid-July, **acute temperature and moisture stress** and all that goes along with it are the primary problems. Annual bluegrass just doesn't like it so hot. Most of the Poa I've seen lately looks as if it spent some time in my vegetable steamer. In fact, one superintendent told me yesterday that every blade of Poa on his greens was dead. Despite the specter of unemployment, it is almost a magical situation for this gentleman because now he has a chance to seriously deal with his root zone issues and get a good crop of bentgrass going.

Although this might be the worst summer for golf turf in my career, there are some folks out there with pretty good greens. The question one might ask is "why is their grass so nice, when mine is so bad?" Optimal conditions in terms of root zone, irrigation systems, equipment, staff, and bentgrass varieties aside, what did it take to maintain good turf this season? In contrast, the problems with infrastructure, lack of personnel, chemical budgets, and poor equipment that almost always lead to subpar turf were exacerbated this year with the heat. Temperature and moisture stress will certainly point out your weaknesses. At any rate, it is my opinion that those folks with the foresight and freedom to diverge from their playbook and back off before the heat took effect are the ones with puttable greens today. Thoughtful irrigation practices, higher cutting heights, good root zone management, and reasonable chemical inputs are important facts of life, but the superintendent with the ability to understand what turf science teaches and adapt it to their personal situations according to the current weather condition is the winner this year. That being said, a reasonable relationship with your clientele – golfers and greens committee alike – is also an essential part of the puzzle. If you've currently got a disaster on your hands, take comfort in knowing that you are not alone. Our laboratory has had over 700 golf turf samples since July 4th! Maybe your grass will get worse before it gets better, but the underlying weaknesses in your management program, infrastructure, or relationships that the summer stress so nicely pointed out can be repaired. And remember, no matter what you do, the annual bluegrass will always come back!

With all the talk of abiotic stresses we do still see some disease out there. The short list includes **summer patch**, **brown patch**, **dollar spot**, **fairy ring**, **slime mold**, **bacterial wilt**, **take all**, **pythium blight**, and **pythium root dysfunction/root rot.** I don't mind saying that it is kind of fun to see the assortment of pathogens at work! By the way – folks are calling about **gray leaf spot** – so far no disease in the lab. If you manage lots of ryegrass; however, the disease window runs into October, so keep your eyes wide open.

Landscape Turf

Are you wondering if your lawn is dead or dormant? Maybe take a small plug inside your shop/kitchen and place it in a plastic bag or container with a moist paper towel. Then watch for the green up…..hope for the green up?

Ornamentals

The lab is pretty quiet in the ornamental realm at this time. Spring and fall are when we get most of our samples of trees and shrubs. We are starting to get some oaks with **bacterial leaf scorch**, which is typical of this time of year. Otherwise, the issues in ornamentals are similar to those on the putting green – environmental, site related, and cultural. I think we will all be glad to see the end of summer! ❑

Late Summer Turfgrass Renovation with Drive

Stephen E. Hart, Ph.D., Specialist in Weed Science

Due to the drought and heat stress we have experienced over the past weeks many non-irrigated turfgrass sites have become heavily infested with crabgrass. In some cases these infestations are so severe that total renovation may be warranted in August/September. However, if desirable turfgrass is still present, an alternative to total renovation is the use of Drive herbicide in mid/late August followed by overseeding. Drive is highly effective in suppressing or "burning back" large multi-tillered crabgrass that has initiated seedheads. Drive will have very little activity on large crabgrass that has not gone into its reproductive phase.

For optimum activity Drive should be applied with a methylated seed oil spray adjuvant. Two formulations are available: Drive 75 DF and a new liquid formulation Drive XLR8 1.5 L. In some of our research we have observed more consistent crabgrass control with Drive XLR8. Tall fescue and perennial ryegrass may be immediately seeded prior to or following application. For Kentucky bluegrass, reseeding should be delayed for 7 days after application. Drive can be tank-mixed with broadleaf weed herbicides but then reseeding needs to be delayed for 3 to 4 weeks. There are several combination products such as Q4, Quincept, and One Time containing quinclorac (the active ingredient in Drive) and broadleaf weed herbicides such as dicamba and 2,4-D. ❑

Ozone Injury in NJ Landscapes

Ann B. Gould, Ph.D., Specialist in Plant Pathology

Polluted air occurs when products from human activities (burning of fossil fuels and industrial manufacturing) contaminate the atmosphere. Plants affected by air pollutants may exhibit a range of symptoms depending on the pollutant and the plant species itself. Many times, symptoms on the foliage may not be obvious, but a significant impact to plant growth or yield may occur. Damage may be the result of a single (**acute**) exposure to a high concentration of a given pollutant, or may be due to longer-term (**chronic**) exposure to lower concentrations.

Some of the more common air pollutants include ozone (O_3), hydrogen fluoride, sulfur dioxide (SO_2), nitrogen oxides (NO_x), ethylene, and peroxyacetyl nitrate (PAN). Of these, ozone appears most commonly in New Jersey landscapes, primarily during the summer months.

Air pollutants are classified as "primary" or "secondary" pollutants. **Primary pollutants** (also called point-source pollutants), such as hydrogen fluoride, sulfur dioxide, and nitrogen oxides, are released directly into the air from the source. Vegetation facing the pollution source will commonly sustain the most damage. In addition, these compounds may combine with water in the air to form acid (pH lower than 5) precipitation (as fog, rain, or snow). **Secondary pollutants**, such as ozone and PAN, are formed high in the atmosphere as exhaust from internal combustion engines combine with sunlight. Such pollutants filter down to cause damage to exposed plant tissues. Ozone, PAN, and smoke combine to form "smog."

Ozone

The pollutant that most commonly causes injury to vegetation in New Jersey is ozone, particularly during hot and humid summer days. Ozone is formed in the troposphere when nitrous oxides and hydrocarbons released from incomplete combustion undergo chemical reactions in the presence of sunlight. Injury to vegetation from ozone can occur at long distances from the hydrocarbon source. As a result, ozone injury is becoming more prevalent each year in rural as well as in urban areas.

Ozone, an oxidant, enters leaf tissue through the gas exchange pores called stomates, causing the chlorophyll pigment to degrade. In deciduous trees, ozone damage is manifest as small flecks or stipples on the upper leaf surface between the larger veins. These flecks range in color from white to bronze to orange-red. In some species, both leaf surfaces (bifacial) appear affected. In conifers, yellow flecks (1/8- to 1/4-inch in diameter) frequently occur on affected needles. Yellow bands that girdle the needle may also form, causing the tip of the needle to turn brown and die.

Prolonged or repeated exposure to air pollutants such as ozone may result in foliar discoloration or necrosis and decreased growth and vigor of vegetation. Within any plant group, there is often a wide variation in sensitivity. In general, herbaceous plants are more sensitive to ozone than are woody plants. White pine can serve as an "indicator plant" since most plants within this species are highly sensitive to this pollutant. A list of plants tolerant or sensitive to ozone is found in Table 1.

Table 1. Sensitivity of vegetation to ozone.

Plants sensitive to ozone		Plants tolerant of ozone
ailanthus	mulberry	birch, European white
alder	oak, white	boxwood
ash, green	petunia	Douglas-fir
ash, white	pine, Austrian	locust, black
boxelder	pine, Scotch	maple
boxwood	pine, white	pine, Japanese black
carnation	poplar	pine, red
catalpa	privet	oak, red
chrysanthemum	snowberry	spruce, blue
crabapple	spirea	spruce, Norway
grape	sweetgum	walnut, black
honeylocust	sycamore	
larch	tuliptree	
lilac	willow, weeping	
linden	zelkova	
maple, silver		

In general, deciduous species develop symptoms more rapidly than conifers, but they do not accumulate toxic levels of pollutants from year to year because affected leaves are shed. Although conifers develop symptoms more slowly, they can accumulate pollutants to lethal levels because affected needles may persist for several years. Ultimately, the type of injury that results from pollution depends on the pollutant, its dose (concentration x time), the time of year, the plant species involved, the genetic make-up of the vegetation, and the age of the foliage affected.

To diagnose pollution injury, compare the affected vegetation with other vegetation in the vicinity. Generally, more than one species of plant will be affected. Visually examine the plants and compare the symptoms with those described in the literature. A trick I use to diagnose ozone is to look for two symptomatic leaves where one leaf lies directly on top of the other. Ozone is a pollutant that comes from the upper atmosphere; if the portion of the bottom leaf covered by the top leaf is asymptomatic, then my suspicion of ozone pollution is confirmed. ❑

Diseases of Turfgrass

Bruce B. Clarke, Ph.D., Specialist in Turfgrass Pathology

General

Algae, **anthracnose**, **brown patch**, **dollar spot**, **copper spot** and **Pythium blight** are all prevalent on golf and landscape turf at this time. In particular, dollar spot has been extremely active on golf and landscape turf during the past few days, with susceptible turf being covered by a thick white mass of mycelium. Reduce the leaf wetness period by dragging affected areas to knock off dew in the early morning hours and maintain adequate nitrogen to help reduce disease severity and allow fungicides to more effectively control dollar spot outbreaks.

Brown Patch

This disease, caused by the fungus *Rhizoctonia solani,* has been very severe on tees, greens, and home lawns in many parts of the state due to the hot, humid weather. To reduce the incidence and severity of **brown patch,** avoid heavy (> 0.25 lb N/1,000 sq ft) applications of water soluble nitrogen during hot weather, irrigate between midnight and 8 AM to reduce the period of leaf wetness, and spray turf with Armada, Banner, Chipco 26GT, chlorothalonil, Compass, ConSyst, Curalan, Disarm, Eagle, Endorse, Headway, Heritage, Insignia, mancozeb, Medallion, Prostar, Spectro, Tartan, thiophanate-methyl, Trinity, Triton, Touche or Tourney per manufacturer's recommendations

Fairy Ring

This disease, caused by a group of fungi known as *basidiomycetes,* is visible on many golf greens and home lawns at this time. Symptoms typically appear as continuous or interrupted rings of dark-green turf. Mushrooms, which may be associated with fairy ring, have also often been present. Although fungicides are not effective against all species of the fungi that cause fairy ring, Bayleton, Endorse, Headway, Heritage, Insignia and ProStar have provided good control in many university tests. For best results, maintain adequate soil moisture and fertility to mask symptom expression. Spike affected turf prior to irrigation and the application of fungicides to enhance water movement into the soil profile. The use of surfactants before fungicide application may enhance efficacy and aid in symptom suppression.

Gray Leaf Spot

Gray leaf spot, caused by the fungus *Pyricularia oryzae,* has been reported in Southern and Central Jersey during the past few weeks. Symptoms start as tiny, brown leaf and stem lesions within a 1 to 2 inch patch. In severe cases, the leaves twist and curl in a "J-shape" and lesions may extend the entire width of the blade. As the disease progresses, patches coalesce into large (one to two feet diameter) areas of blighted turf. Extensive foliar blighting can occur during warm (75-85^{0}F days and 60-75^o F nights), wet weather. Newly established seedings are more susceptible to infection than mature plantings. Cultivars with improved resistance to gray leaf spot include: 1G2, 1G2, All*Star 3, Apple GL, Charismatic II GLSR, Dart, Derby Xtreme, DP-1, Exacta II GLSR, Fiesta 4, GL-2, Harrier, Manhattan 5 GLR, Palace, Palmer IV, Palmer V, Panther GLS, Paragon GLR, Prelude GLS, Primary, Protégé GLR, Regal 5, Repell GLS, Revenge GLX, Secretariat II GLSR, SR 4600 and Stellar GL. See www.turf.rutgers.edu research section for the current gray leaf spot and other fact sheets.

When conditions are conducive to disease development the pathogen produces abundant one to two-celled, pear-shaped spores (conidia). To suppress this disease, avoid high rates of nitrogen (i.e., do not apply more than 0.25 lb N per 1,000 sq ft) during July and August and avoid extended periods of leaf wetness (i.e., do not water between 6 PM and midnight). Fungicide studies have shown that Armada, Compass, ConSyst, Disarm, Headway, Heritage, Insignia, Spectro, Tartan, and thiophanate-methyl have been most effective when applied on a preventive basis every 14 to 28 days beginning in mid-July. Chlorothalonil and the DMI (sterol-inhibiting) fungicides (e.g., propiconazole), may provide effective control when disease pressure is moderate. Isolates of *P. oryzae* resistant to the QoI (Strobilurin) fungicides and strains with reduced sensitivity to the DMI's have been reported in New Jersey, so tank mix or alternate fungicide chemistries to reduce the potential for fungicide resistance.

Pythium Blight

Pythium blight continues to be reported on golf and landscape turf. Since **Pythium** thrives in low or poorly drained areas, especially when it is humid and the night temperatures are above 68^{0}F, we should see more of this disease if the "hot, muggy" weather continues this summer. For best results, improve drainage, water in the morning hours, avoid over fertilization, and apply Alude, Banol, Chipco Signature, Disarm, Headway, Heritage, Insignia, Koban, Magellan, mancozeb, Prodigy, Quell, Segway, Subdue MAXX, Terrazole or Vital Sign according to the manufacturer's recommendations.

Summer Patch

Summer patch has started to become more apparent on susceptible turf due to the extremely hot, humid weather. This disease, caused by the root-infecting fungus *Magnaporthe poae*, can be quite troublesome on Kentucky bluegrass, annual bluegrass, and fine fescue turf. To control existing infections, apply 0.25 lb. ammonium sulfate/1,000 ft^2 and immediately water into the thatch to arrest the infection and to avoid foliar burn during hot weather. The use of fungicides such as Armada, Banner, Bayleton, Compass, Disarm, Eagle, Headway, Heritage, Insignia, Rubigan, Tartan, Trinity, Triton, or thiophanate-methyl in 4 to 5 gal of water/1000 ft^2 may

See Turf Diseases on page 7

Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged above normal, averaging 75 degrees north, 78 degrees central, and 78 degrees south. Extremes were 96 degrees at Pomona on the 6th, and 54 degrees at Charlotteburg on the 8th. Weekly rainfall averaged 0.19 inches north, 0.00 inches central, and 0.07 inches south. The heaviest 24 hour total reported was 0.53 inches at Belvidere on the 4th to 5th. Estimated soil moisture, in percent of field capacity, this past week averaged 73 percent north, 56 percent central and 44 percent south. Four inch soil temperatures averaged 73 degrees north, 76 degrees central and 75 degrees south.

Weather Summary for the Week Ending 8 am Monday 8/ 9/10

	RAINFALL			TEMPERATURE				GDD BASE50		MON
WEATHER STATIONS	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	%FC
BELVIDERE BRIDGE	.53	21.52	.55	88	56	74.	2	2158	399	67
CANOE BROOK	missing									
CHARLOTTEBURG	.03	27.14	4.88	92	54	74.	4	2192	811	61
FLEMINGTON	.00	23.12	1.77	93	55	77.	4	2413	608	69
NEWTON	.20	23.67	3.19	88	55	74.	3	2135	533	67
FREEHOLD	.00	22.12	1.39	94	57	79.	5	2596	666	57
LONG BRANCH	.00	22.76	2.02	93	61	77.	3	2419	568	44
NEW BRUNSWICK	.00	22.86	2.08	95	56	79.	5	2567	552	62
TOMS RIVER	.00	19.73	-1.62	93	58	77.	5	2465	617	36
TRENTON	.00	18.67	-1.17	93	60	79.	4	2721	617	31
CAPE MAY COURT HOUSE	.02	17.64	-.76	94	57	76.	0	2235	257	33
DOWNSTOWN	.03	18.35	-1.10	92	57	78.	3	2574	459	35
GLASSBORO	.00	22.95	2.53	89	60	77.	2	2677	589	32
HAMMONTON	.30	18.04	-2.43	94	59	78.	3	2737	647	39
POMONA	.00	18.17	-.44	96	60	78.	4	2642	692	35
SEABROOK	missing									
SOUTH HARRISON	.00	20.39	-.10	91	62	79	NA	2745	NA	NA

* missing some data

WES KLINE -- GDD BASE 40 PINEY HOLLOW

LAST WEEK 244 (ENDING 8/2/10)

THIS WEEK 265 (Ending 8/9/10)

Turf Diseases from page 6

aid in recovery but most of the damage has already been done. If fungicides cannot be applied with this much water, irrigate them into the thatch immediately with 1/16 to 1/8 inch of water. Aerification (when symptoms are not present) and improved drainage will also aid in disease suppression. Soil pH should be maintained at or slightly below 6.0 for optimum disease control.

Yellow Ring

This disease, caused by the fungus *Trechispora alnicola*, is evident on Kentucky bluegrass lawns and sod fields at this time. Patches are 1 to 2 feet in diameter and consist of green grass surrounded by faint yellow rings (1 to 2 inches in diameter). Upon close inspection of the thatch, a dense mat of white mycelium is often apparent. Infected turf rarely dies and rings do not always reappear the following year. Symptoms are most apparent during cloudy weather between May and October. The fungus is primarily a saprophyte that colonizes organic matter in the thatch. Since damage is cosmetic and affected turf recovers during cool weather in the fall and spring, control is rarely warranted. In areas where symptom expression cannot be tolerated, turf managers should dethatch affected turf. No chemicals are currently labeled for the control of yellow ring.

Turfgrass Expo

This year's Turfgrass Expo will be held at the Trump Taj Mahal Casino/Resort on **December 7-9, 2010**. This is a great opportunity to receive the latest turf management information from nationally renowned speakers. For additional information, please contact Cece Peabody (973) 812-6467 or e-mail execdirector@njturfgrass.org or Anne Diglio (732) 932-9400 ext. 339 or e-mail diglio@aesop.rutgers.edu. ❑

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