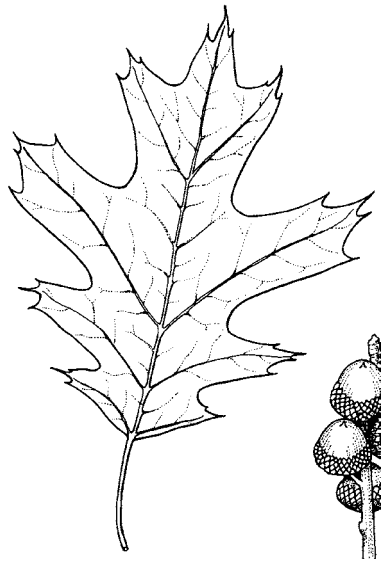
RUTGERS COOPERATIVE EXTENSION AT THE NEW JERSEY AGRICULTURAL EXPERIMENT STATION

PLANT & PEST ADVISORY

LANDSCAPE, NURSERY & TURF EDITION $1.50 OCTOBER 11, 2007



INSIDE

Landscape IPM Pest Notes

Steven K. Rettke, Ornamental IPM Program Associate

✔ **TWIG PRUNER vs. SQUIRREL DAMAGE:** Observations during the fall season may show numerous fallen twig branches on the ground beneath a client's favorite large oak tree. Usually the twigs are not much more than ¼ inches in diameter and the leaves are still attached. Two possible causes for the fallen twigs are from activity by gray squirrels or by an infestation of twig pruners (roundheaded beetle borers).

Gray squirrels are notorious in the fall season for "attacking" oaks and other large trees during the weeks prior to leaf drop. They litter the ground beneath trees with twigs less than ¼ inch in diameter after chewing them off and letting them drop to the ground. When examining the end of the twig, look for the characteristic bevel or slant cut chewed by the squirrel. A couple of possible reasons for this squirrel behavior are to get acorns to the ground and to use the twigs and leaves for nesting materials.

Twig pruners are native longhorned beetles and are often found feeding on open grown oaks and other deciduous shade trees. The larval stages that feed within the twigs and small stems are called roundheaded borers. The larvae of this single generation borer will feed and grow in the twigs during the summer months. However, by late summer most of their feeding damage has been sufficient to girdle and weaken the twigs. Winds that are strong enough can then cause twigs to snap and fall to the ground with the larvae still inside. If an accumulation of fallen twigs becomes apparent in August and into September, then they should be examined for the possible presence of this borer. The broken ends will have a concave cut and the white larvae can be observed by cutting lengthwise at twig ends. The twig pruner overwinters as pupae within the fallen twigs/stems and emerges as longhorned beetle adults the following year in May/June. This minor pest can successfully be controlled with sanitation cleanup during the fall months. The use of insecticide sprays is not needed or recommended.

✔ **WESTERN CONIFER SEED BUG:** A nuisance pest in the landscape and within structures, this true bug is associated with cone-bearing conifers. Only 15-20 years ago this insect was found only west of the Rocky Mountains. Since then it has spread throughout the continental United States. Also commonly called the leaffooted bug, it has distinctive flat, swollen areas of the tibia on both hind legs.

As a true bug, this insect has piercing, sucking mouthparts and feeds on the seeds within conifer cones such as pines and spruces.

SEE IPM NOTES ON PAGE 2

IPM NOTES FROM PAGE 1

Although they pose no harm to the health of ornamental landscape plants, they can accumulate large populations and create a nuisance, especially in the fall months. A sizable insect, when fully grown it is nearly 1-inch in length. Similar to the boxelder bug and the multicolored Asian lady beetle, the western conifer seed bug will collect and seek shelter in homes and structures to overwinter. Properly caulking the external voids between metal, wood and masonry within homes will help reduce their potential nuisance.

✔ **SOFT SCALE NYMPH MIGRATIONS:** Most **s**oft scale species (exceptions include magnolia, tuliptree, and globose) have 1st instar nymphs that spend July and August feeding along veins on the undersides of leaves of their deciduous host (the use of a handlens may be needed). During the weeks of late summer and early fall, these nymphs migrate off the leaves onto woody stem tissue and molt into the overwintering 2nd instar stage. The size of the nymphs increase nearly 3X after molting and their presence is usually observable even without magnification (they can be as large as lenticels). Typically, overwintering soft scale nymphs have a dark coloration, presumably to help absorb sunlight and maintain body warmth.

In contrast to armored scales, the various species of soft scales are relatively easy to control. Unlike armored scales, soft scales do not have the protective, external waxy cover. Soft scale species are highly exposed and more vulnerable to dormant oil applications (dormant oil efficacy against armored scales is usually not satisfactory). Treatment windows can include a fall oil spray after leaf drop (some labels advise caution with fall dormant oils) or an early spring oil spray before bud break. With larger trees complete coverage may be difficult. The use of soil injection or drench of imidacloprid (Merit) or the other, newer neonicotinoids now available can provide excellent controls against soft scales. The key factor to always consider when using soil treatments is adequate soil moisture.

✔ **BOXWOOD LEAFMINER:** This particular host specific pest is a good example of why it can still be important to monitor plants during the off-season. Although the single generation leafminer larvae have been in boxwoods leaves since May, their presence in new foliage is often not readily apparent until the fall. Most of the activity and feeding damage by the fly larvae are done during the fall and winter. Blister-like blotch mines are now just becoming noticeable on current season infested leaves. While most insect pests are winding down for the year, the boxwood leafminer is just heating up.

When symptoms suggest their presence, "break the back" of the leaf and peal away the lower epidermis to detect the still clear and thin larvae (usually several are found in each leaf). As feeding continues through the fall months, the larvae develop into larger, yellow colored maggots. After a mid-winter resting stage the larvae begin feeding again in late winter. With heavy infestations, defoliation can occur in the spring.

The various neonicotinoid class root systemics should provide outstanding, long lasting results against this pest. As long as good root uptake of the material is achieved, success is usually assured. Within a week, sufficiently lethal insecticide levels should be translocated up into the boxwood foliage if healthy roots and adequate soil moisture are present.

✔ **FLOWER FLIES:** The flower fly (or *syrphid* fly) is an insect that many landscapers have seen but incorrectly identified as a type of wasp or bee. Their hovering flight and yellow to orange band markings on the abdomen help cause this misidentification. Although these beneficial insects are predacious only in the larval stage, they are another important group of predators that rival the abilities of ladybeetles and lacewings. The larvae of flower flies are unknown allies to many landscape plant managers. It is rare not to find at least a few of these 1/8" to 1/4" long tan or greenish maggots feeding within an aphid colony. The larvae also have black markings on their bodies and have pointed anterior and blunt posterior ends.

These blind larvae will quietly meander over the plant surface methodically grasping one aphid after another. Once this predator spears an aphid with its pointed jaws (their mouthparts consist of 2 retractable hooks), it raises the prey up into the air and sucks out the fluid contents. A flower fly can destroy aphids in this manner at a rate of one per minute over an extended period of time.

It is also significant to note that they are usually the major predator during the fall season, since they can function at cooler temperatures than either the ladybeetle or lacewing species can. Other than aphids, flower fly larvae also prey upon leafhoppers, scales, mealybugs and thrips.

✔ **WHITE PINE APHID / EGGS:** A relatively large aphid species (nearly ¼ inch), they are dark bodied with a distinctive central white stripe and white spots on each side of the abdomen. Although they have several generations during the season, they often become most prominent on eastern white pines during the weeks of October when black, jellybean-like overwintering eggs are laid on needles.

White pine aphids do not feed on pine needles, but instead will be found on stems feeding in the phloem tissue. As sapsuckers they will exude copious amounts of honeydew that usually attract numerous wasps, hornets, bees and ants. These stinging, biting insects use the honeydew as a source of food. With high infestations the needles will typically be covered with the black sooty mold that grows on the honeydew.

Horticultural oil can provide controls against both the feeding aphids and overwintering black eggs. The eggs are laid similar to a string of beads in a straight line along the length of individual needles. Where laid,

SEE WHITE PINE APHID ON PAGE 3

WHITE PINE APHID FROM PAGE 2

select needles can contain a dozen or more eggs. When closely observed later in the fall, the black eggs on highly infested trees will become very apparent on many needles.

✔ **HEMLOCK SYMPTOMS = Spruce Spider Mites vs. Hemlock Rust Mites:** Two different species of mites that commonly attack hemlock trees, they each have distinctive symptoms. Spruce spider mites produce a whitish, chloratic stippling pattern at the base of individual hemlock needles (up to a ¼ of the needle may show this stippling at the base). Characteristically this whitish discoloration is very uniform on many of the needles of infested branches. Some of your clients might even mistake these symptoms for hemlock woolly adelgid pests. To the contrary, hemlock rust mite feeding symptoms produce a dull and olive appearance to the needles. Also, instead of concentrating their stippling at the base of the needle, this rust mite feeding pattern is evenly spread. Hemlock rust mites are only 1/3 the size of spruce spider mites and as a result their smaller mouthparts produce much finer stippling on the needles.

Both species are cool season mites and are active during the spring and fall months. Although both can be active on the same tree at the same time, the hemlock rust mite (an eriophyid mite) is more active at lower temperatures than the spruce spider mite. The hemlock rust mite has even been called a cold season mite. Spruce spider mites often become active by mid-September, if not earlier, and can continue feeding and egg laying through November and into December. Hemlock rust mites may not resume activity until October and will also continue activity into the late weeks of fall. Both mites overwinter as eggs on twig bark and therefore can be controlled with horticultural oils.

✔ **EASTERN SPRUCE GALL ADELGID:** This spruce gall species forms at the base of current years growth. Cooley spruce galls, on the other hand, form at the terminal tips of new twigs. Typically the Eastern spruce gall adelgid (ESGA) is found on Norway spruce, while the Cooley spruce gall adelgid is found on Colorado blue spruce. Often the ESGA has the potential to be more damaging to the aesthetic appearance on highly infested trees.

Although they have only one generation per year, there are two control window opportunities when attempting to manage the ESGA. The first control window is during the early spring (late March to early April). The target is the overwintering stem mother before eggs are laid. The second window is early fall (mid September thru October). During both windows the target to inspect for are small, white webbing located at the base of lateral or terminal buds (10X hand-lens might be useful). These are the protective overwintering sites of the adelgid stem mother.

Horticultural oil or insecticidal soap will both provide excellent controls with adequate coverage (*"if it isn't drippin, then you're slippin"*). With our present drought condition, it would be wise to show precaution when using either soaps or oils now. When conditions permit, insecticidal soaps will provide outstanding efficacy against adelgids. ❑

Diseases of Turfgrass

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

Pink Snow Mold

This disease, caused by the fungus *Microdochium nivale (Fusarium nivale*), will develop soon on golf and landscape turf. To prevent pink snow mold from developing on susceptible turf this fall, avoid excessive nitrogen applications, continue mowing turf until dormancy, and apply Armada, Banner, Chipco 26GT, chlorothalonil, Compass, ConSyst, Eagle, Headway, Heritage, Insignia, Instrata, Medallion, PCNB, Spectro, Tartan, thiophanate-methyl, Trinity or vinclozolin. For best results, apply any of these fungicides now and then repeat in late-January if the snow cover recedes. Do not, however, reapply PCNB after January 15 due to the possibility of phytotoxicity during warm weather next spring.

Take-all patch

This disease, caused by the root and crown infecting fungus, *Gaeumannomyces graminis* var. *avenae*, has been reported on several bentgrass greens and fairways in the tri-state region. Although this disease is most prevalent from April through June, late-summer and fall outbreaks are not uncommon. Infection takes place during cool, wet weather and symptoms are most striking after stress. Infected grass first appears bronze to reddish-brown in color and then fades to a dull brown. Patches are usually circular or ring-shaped and range in size from several inches to two feet or more in diameter. The centers of affected turf are frequently colonized by bluegrass (*Poa* spp.), fescue (*Festuca* spp.), or weed species. Upon close examination, decaying roots and leaf sheaths appear black and dark strands of mycelium often develop parallel to the root axes. The disease is enhanced by poorly drained, light-textured, and high pH soils.

Although take-all is difficult to control, best results have been achieved through the use of acidfying fertilizers (e.g., ammonium sulfate) during cool weather and preventive applications of Banner, Bayleton, Headway, Heritage, Insignia, Trinity or Rubigan in October and November. If the disease has been particularly severe, fungicides should be reapplied twice next spring at 21 to 28-day intervals beginning in early April. Chemicals should be applied in 4 gal water/1000 sq ft or lightly irrigated into the root zone (1/8 to 1/4" of water) for maximum effectiveness. Whenever practical, overseed infested areas with less susceptible grasses such as fine fescue, Kentucky bluegrass, or perennial ryegrass to mask symptom expression. Maintain soil pH at approximately 6.0 since the disease is enhanced in alkaline soils. Manganese (@2 lb Mn/A), applied once in the

SEE TURF DISEASES ON PAGE 7

Understanding your Lawn/ Landscape/Garden Soil Test Report, Part II: Nutrients and Fertilizer Recommendations

Stephanie Murphy, Ph.D., Coordinator, Rutgers Soil Testing Laboratory

Perhaps you recently had a soil sample analyzed by Rutgers Soil Testing Laboratory and have received your soil test report, or maybe you are considering sending in a sample and wonder what value it offers. A soil test report, generated when the laboratory analysis is complete, includes test results (data), interpretation, and - in most cases - recommendations.

Macronutrients analyzed include phosphorus (P), potassium (K), calcium (Ca), and magnesium (Mg). At Rutgers Soil Testing Lab, these nutrients are extracted from soil with a chemical "cocktail" called the Mehlich-3 extractant. It is validated as an excellent nutrient extractant for the soils of New Jersey, well-correlated with field studies of nutrient uptake by plants, and in fact is used widely by soil testing laboratories in the United States. However, some laboratories do use other extractants, and it needs to be understood that the values obtained by different extractants will differ. Each different extractant has its own set of interpretive classes, and ideally the interpretation will be the same for a sample extracted by two methods. However, certain extractants are designed to deal with special soil characteristics, for example, regional alkalinity, and do not interpret other soils well.

For each of the extracted/analyzed elements, a value is given on the soil test report in pounds-per-acre. This value represents the relative availability of the nutrient to plants growing in the soil over the course of the growing season. The values may not directly have meaning to the layperson, but can be utilized to monitor change over time or comparison of different samples, and the values are used to place the soil in interpretive classes: Very Low, Low, Medium, High, Very High. The category "High" is considered equivalent to "Optimum". Many years of research have been performed to delimit the values for these classes and to determine the appropriate fertilization applications to accomplish the "optimum" designation. Table 2 provides information about relative levels of P, K, Ca & Mg. Notice that there is a different scale for each nutrient. On the soil test report, a bar graph (histogram) demonstrates the relative levels of nutrients.

While nutrient deficiencies can be dealt with by fertilizing, there is no easy way to decrease excess nutrients. Very high levels of macronutrients are generally not problematic in terms of plant toxicity, but can present plant problems such as nutrient imbalance (for example, excessive K inducing deficiency of Mg). Furthermore, excessive levels of soil P may present environmental hazards if soil erodes into storm sewers, streams, lakes, and rivers.

Calcium and magnesium values are often correlated with soil pH; low values of Ca and/or Mg may be accompanied by low pH values. Application of limestone - calcium carbonate with up to 45% magnesium carbonate - to correct acidity (low soil pH) also increases Ca and possibly Mg content. Sometimes, however, supplemental Ca is required when pH does not need modification; in that case, agricultural gypsum (calcium sulfate) would be recommended.

While nitrogen is also a macronutrient, it is not included in the standard soil test report. The reason for that is the transitory nature of N forms in the soil. Relatively low values of plant-available N (nitrate & ammonium ions) in the soil are dynamic, constantly changing according to microbial activity, water content and movement, and diffusion of gases, among other factors. Analyzing a soil sample for available N represents a "snapshot" of the condition when the sample was taken, but may not predict well the actual soil condition by the time the analysis is completed. Regardless, N applications are typically based on the specific kind of plant being grown and the soil test report will provide the generally recommended amounts of N fertilization for the species.

Micronutrients that are included on the soil test report include boron, copper, iron, manganese, and zinc. As with macronutrients, the values represent relative availability to plants over a growing season. The values are given in parts-per-million concentrations and interpreted briefly as "low", "adequate", or "high"; the micronutrients are not as precisely delimited as the macronutrients. Determination of critical levels is confounded by many factors, and plant requirements for micronutrients are more specific (for example, crops in the cabbage family requiring more boron than most). For those reasons, it is difficult to generalize. However, the appropriate micronutrient statements are printed at the end of the report to help interpret the results of micronutrient analysis.

See Nutrients on page 5

Table 2. Mehlich-3 soil test nutrient values (in pounds per acre) for soil test classes.

	Very Low	Low	Medium	Optimum	Very High
Phosphorus	0-24	25-45	46-71	72-137	>137
Potassium	0-40	41-81	82-145	146-277	>277
Calcium	0-615	616-1007	1008-1400	1401-1790	>1790
Magnesium	0-45	46-83	84-143	144-295	>295

NUTRIENTS FROM PAGE 4

The availability of many of the micronutrients is strongly influenced by soil pH. For instance, copper and iron may have low availability (at high pH) despite the interpretation of "adequate" or "high"; this is because they form insoluble compounds at high pH. In the case of manganese, however, the pH is factored into the availability interpretation.

Micronutrients, unlike the macronutrients, can have direct toxic effects on plants. That - along with the difficulty of applying very small amounts of product to correct deficiencies - is why fertilizers are generally not recommended to address such problems. Addition of organic matter to enrich soil fertility often suffices to provide the required amounts as the organic matter decays.

When one or more nutrients are determined to be deficient, the fertilizer recommendation given on the soil test report is designed to build up the soil level of deficient nutrients to the optimum level. In other words, after the complete set of recommendations has been followed, the soil should be optimal, or nearly so, in terms of all nutrients. Maintenance applications, to keep nutrient levels in the optimum range thereafter, may also be specified. Retest landscape areas every three years to monitor and correct deviations from optimal soil conditions. There is not much to be done about "very high" levels of a nutrient, other than limiting additions.

Fertilizer recommendations usually provide several options of fertilizer grades. The fertilizer "grade" is the set of three numbers (for example, 10-6-4) that represent the guaranteed analysis of fertilizer nutrients nitrogen (N), phosphorus (P), and potassium (K). The first of the three numbers represents percent nitrogen. The middle number represents phosphorus as the oxide percent (P_2O_5); the final number is the percent of the oxide of potassium (K_2O). Presenting analytical results of fertilizer P and K as oxides is a remnant of traditional chemical practices and does not represent the actual form of the P or K in the fertilizer. Commercial fertilizer products are required to show their guaranteed analysis on the label, and the state of NJ monitors the products for accuracy.

The appropriate fertilizer for a soil/plant combination is chosen according to the ratio of the N:P_2O_5:K_2O. For example, an established fescue/bluegrass lawn with full sun, irrigation, and clippings mulched back into the lawn, growing in soil with optimum levels of P and K, would require annual fertilization with (total) 4 pounds of N, 1 pound of P_2O_5, and 2 pounds of K_2O per 1000 square feet, a ratio of 4:1:2. These requirements indicate the amount of the nutrient; the amount of fertilizer needed to get the correct amount of nutrient depends on the fertilizer grade. To get one pound of N for example, you would need 10 pounds of a fertilizer that is 10% N, such as one having 10-10-10 grade. The higher the concentration of nutrient in a fertilizer, the smaller the amount of fertilizer needed.

10% N in fertilizer A x 10 pounds of fertilizer = 1 pound N
20% N in fertilizer B x 5 pounds of fertilizer = 1 pound N

In cases where a fertilizer can be purchased with the appropriate ratio (or approximate ratio) needed for the situation, that fertilizer will supply the N-P_2O_5-K_2O requirements all at once. In other cases, though, a fertilizer with the appropriate grade may not be commercially available (or not available locally), and so more than one fertilizer must be used to meet the plants' needs. In extreme cases, three single-nutrient fertilizers (%N-0-0, 0-%P_2O_5-0, and 0-0-%K_2O) will be needed.

The soil test report's fertilizer recommendation provides not only the appropriate ratio of nutrients but also a list of some commercially available fertilizers of the appropriate/approximate ratio along with the rate of application needed to supply the correct amount of nutrients; when more than one fertilizer is needed, they will be listed on the same line. Fertilizer products and their availability change from season to season and year to year, and so the soil testing database must be updated periodically. When choosing a fertilizer, the proper nutrient ratio is the most important factor. There are two major exceptions: 1) do not choose a fertilizer product that contains a pesticide unless you specifically require that pesticide also, coincident with fertilizer need. Make sure that the pesticide is safe for the planting area that you are going to fertilize and safe for other non-target organisms (always read fertilizer/pesticide label carefully); for example, do not use a lawn fertilizer that contains a broad-leaf herbicide to an ornamental bed or to fruit or vegetable crops. 2) Fertilizers that are formulated for acid-loving plants (holly, azalea, rhododendron, etc.) will have built-in acidulants. Take this into consideration if sulfur (or aluminum sulfate) is recommended to lower soil pH.

The nitrogen source(s) in a fertilizer affects the timing of release. On the fertilizer label, the "water insoluble nitrogen", or WIN, helps to predict the timing. The lower the WIN value (the more soluble nitrogen), the quicker the release of available N from the fertilizer. The more water-insoluble N, the slower is the release of N to soil, extending the fertility over the long term. In most cases, 50% WIN or more is desirable. Higher WIN values are often due to N being delivered in an organic form; sulfur or polymer coatings are also used to control release of nutrients from fertilizer granules.

There are a multitude of nitrogen-only fertilizers. Use of low-analysis fertilizer is recommended; because it requires more material to be spread to get the recommended amount of nutrient, it is easier to achieve even coverage and there is less danger of damage in case of spills or mistakes. The most common phosphorus-only fertilizers are 0-20-0, commonly called "superphosphate", and 0-40-0, or "triple superphosphate". Potassium-only fertilizers include "muriate of potash", 0-0-60,

SEE FERTILIZER RECOMMENDATIONS ON PAGE 6

FERTILIZER RECOMMENDATIONS FROM PAGE 5

or sulfate of potash, 0-0-50. The high concentration and high solubility of these K products gives the potential for burning of plant tissue, and so care must be taken to dispense carefully, apply only to dry foliage, and then rinse in afterward with watering/irrigation.

Often fertilizers are marketed to a specific category of plants (for example, rose food "to promote blooms" or tomato fertilizer). That does not mean that they cannot be used for other types of plants as long as the nutrient ratio is correct. Marketing also shouldn't overrule the soil test recommendations; the fertilizer manufacturers are promoting their product without benefit of knowing soil test results. If soil P level is "very high", then adding fertilizer of 1:2:1 ratio is of questionable benefit. In fact, a recent survey of rose or "bloom" fertilizers included such varied grades as 6-12-6, 0-10-10, 20-13-10, and 12-6-8.

When trying to determine whether a fertilizer grade not listed on the report is appropriate, calculate a fertilizer ratio by dividing the numbers in the fertilizer grade by the lowest number of the three (except 0, use next lowest number; single-nutrient fertilizers do not have a ratio) being very liberal in rounding of numbers. For example, a fertilizer grade of 27-5-12 could be considered to have a ratio of 5:1:2. If that ratio is appropriate to the situation, then the correct rate of application can be calculated by dividing the total amount of N needed by the fraction of fertilizer that is N (in this example, 27%=0.27).

1 pound of N needed (per thousand square feet) ÷ 0.27 pound N in each pound of fertilizer = 3.7 pounds of fertilizer (per 1000 square feet) needed.

This will be helpful in determining the total amount of fertilizer that needs to be purchased and in metering out a manual application. Fortunately, commercial fertilizer spreaders have adjustable settings that aid in distributing the correct amount of fertilizer. Read the spreader manual and the fertilizer label for more information. ❑

South Jersey Landscape Conference and Trade Show, Diversifying your Landscaping Business

Jerome L. Frecon, Gloucester County Agricultural Agent

Diversifying Your Landscaping Business will be the theme of the 2007 South Jersey Landscape Conference and Trade Show to be held on Thursday November 29, 2007 from 8:00 A.M. to 4:00 P.M. at Masso's Crystal Manor in Glassboro.

Refreshments will be served from 8:00 to 9:00 A.M. at Masso's beautiful Crystal Ballroom. Dr. Jim Murphy, Specialist in Turf Management with Rutgers News Jersey Agricultural Experiment Station, Cooperative Extension, will kick off the morning session at 9:05 A.M. with a science-based presentation entitled "Organic Lawn Care, Do We Know What It Means?" Switching gears, Vince Nolan, Financial Advisor from Vineland will discuss, "Developing a Business Plan That Will Help Secure a Small Business Loan."

Starting at 10:15 A.M., during the lunch hour in the trade show, and later at 2:00 P.M., landscapers will have time to visit all exhibitors.

Dr. Chris Obropta, Specialist in Water Resources for Rutgers NJAES and his team will discuss "A New Opportunity for Your Business." In his presentation Dr. Obropta will focus on the process of designing and building Rain Gardens - an innovative way to manage storm water drainage. His team will also have an exhibit in the trade show.

Dr. Chris Obropta

Madeline Flahive DiNardo

Ms. Madeline Flahive DiNardo, Agricultural Agent with Rutgers NJAES Cooperative Extension will discuss and demonstrate technology to develop and deliver an Integrated Pest Management Program in the Landscaping Industry. A buffet luncheon will be served in the trade show hall after Ms. DiNardo's presentation.

Ms. Pat Hastings, Program Associate with Rutgers NJAES, Cooperative Extension will bring the group of pesticide applicators together for a review of pesticide safety issues. Two NJDEP Pesticide Applicator Core Unit and NJ category units will be given to all New Jersey Pesticide Applicators.

Big issues facing landscapers, and landscaping business issues will be discussed by a panel of experts in mid-afternoon. Topics include: H2-A program and immigration reform; H-2B program and the U.S. Department of Homeland Security's Enforcement of Social Security Rules; The Home Improvement Contractors Registration Act; and an update on Sales Tax problems facing landscaping businesses.

The day-long program will conclude with the ever popular panel of landscapers discussing "Ideas That Helped My Business Succeed." Four southern New Jersey landscapers will share their experiences and ideas.

At the conclusion of the meeting Certified Nursery and Landscape Professionals will also receive 7 credits for attendance.

SEE CONFERENCE ON PAGE 7

CONFERENCE FROM PAGE 6

Regular information will be posted on the web site at http://gloucester.njaes.rutgers.edu including a detailed copy of the program. Pre-registration is required. Contact Jerry Frecon or Alice Rogers at (856) 307-6450 Ext. 1 for more information. Call Carl Nordstrom at (800) 314-4836 to register for the conference and trade show. ❑

TURF DISEASES FROM PAGE 3

spring as a foliar spray containing manganese sulfate or another water soluble source, can reduce the severity of take-all patch on sites deficient in this nutrient.

Turf Expo

This year's Turf Expo will be held at the Trump Taj Mahal Casino/Resort on December 5-7, 2007. This is an excellent 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 Marlene Karasik (732) 932-9400 ext. 339 or e-mail mkarasik@aesop.rutgers.edu. ❑

Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged much, much above normal averaging 68 degrees north 71 degrees central and 71 degrees south. Extremes were 90 degrees at Pomona on the 8th, and 46 degrees at Flemington on the 2nd. Weekly rainfall averaged 0.00 inches north, 0.00 inches central, and 0.00 inches south. The heaviest 24 hour total reported was 0.01 inches at Cape May Courthouse on the 7th to 8th. Estimated soil moisture, in percent of field capacity, this past week averaged 76 percent north, 63 percent central and 53 percent south. Four inch soil temperatures averaged 66 degrees north, 68 degrees central and 69 degrees south.

Weather Summary for the Week Ending 8 am Monday 10/ 8/ 7

	RAINFALL			TEMPERATURE				GDD BASE50		MON
WEATHER STATIONS	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	%FC
CANOE BROOK	missing									
CHARLOTTEBURG	.00	31.40	.12	85	47	67.	14	2915	806	67
FLEMINGTON	.00	34.01	4.58	87	46	71.	15	3196	451	74
NEWTON	.01	27.98	-.68	84	47	67.	14	2866	502	69
FREEHOLD	.00	33.04	4.45	85	49	71.	13	3456	516	66
LONG BRANCH	missing									
NEW BRUNSWICK	.00	38.43	9.38	85	51	71.	13	3372	300	71
TOMS RIVER	.00	26.95	-2.72	84	49	70.	12	3268	387	41
TRENTON	.01	27.58	.15	86	52	71.	12	3541	342	44
CAPE MAY COURT HOUSE	.02	18.28	-7.41	87	52	71.	9	3431	462	45
DOWNSTOWN	.00	20.26	-6.60	87	47	70.	10	3540	314	47
GLASSBORO	.00	24.57	-3.76	86	53	73.	14	3887	706	44
HAMMONTON	.00	20.51	-7.75	89	47	71.	12	3649	463	41
POMONA	.00	22.26	-3.20	90	50	72.	14	3579	620	41
SEABROOK	.00	21.88	-4.11	87	52	72.	12	3881	634	44
SOUTH HARRISON	.00	24.59	-3.11	88	52	71	NA	3759	NA	NA

WES KLINE -- GDD BASE 40 PINEY HOLLOW LAST WEEK 210 (Ending 10/1/07) THIS WEEK 214 (Ending 10/1/07)

New Jersey Agricultural
Experiment Station

Plant & Pest Advisory
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