

new jersey turfgrass association



clippings

Green
World



VOLUME 36

FALL 1999

NJTA Expo '99

The Countdown Begins...

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President's Message

My message for this Fall Issue of *Clippings/Greenworld* will be brief. There are four things that I would like to emphasize at this time.

First and foremost, I urge you to attend Expo '99, December 7, 8, and 9, 1999 at the Trump Taj Mahal Casino/Resort in Atlantic City, New Jersey. We have gained national recognition as one of the Green Industry's finest education convocations and trade shows. This year we have continued with our international format by bringing two experts from the United Kingdom to speak on important topics. The Sports Turf Research Institute of the United Kingdom will also have a booth at the Trade Show.

Second, please be advised that construction of the new teaching and research complex at Ryders Lane has begun. We expect construction to be completed by the first of the year. This building situated on the farm, literally in the middle of much of the most significant research plots, gives students and teachers unparalleled opportunities for a truly "hands-on" educational experience. To all who donated to this endeavor, I extend our heartfelt gratitude. The completed complex will have a market value of approximately \$750,000.00. There is no limit to what we can do when those in "The Industry" pull together!! (See pages 12 and 13).

Third, the Annual Turfgrass Awards Banquet was held Saturday, November 6, 1999 on the Cook College Campus. Approximately \$57,000 in scholarships, grants, etc. were awarded through the Foundation and other benefactors associated with NJTA.

Fourth, I urge you to attend the Annual Meeting of The Alliance for Environmental Concerns. See pages 6 and 7 for a complete description of this program, which will be held at Fiddler's Elbow on November 16, 1999. The Alliance has always taken a proactive stance on important environmental issues. "Taking the Mystery Out of IPM" is certainly an appropriate topic at this time.

My two year term as President of the Association will conclude at the Turf Expo in Atlantic City and I would like to take this opportunity to say that it has been an honor and a privilege to serve NJTA and The Foundation. I appreciate all of the support given to me and my administration over the last two years.

I look forward to seeing you at Expo '99!



John Buechner
President, NJTA

John Buechner

At The Stadium, It's Time For Splendor In The Grass

Giants & Jets Rejoice At Decision To Go With Nature!

By Paul Needell, STAR-LEDGER Staff

Reprinted from THE STAR-LEDGER, September 30, 1999

The prayers of Giants, Jets and MetroStars players everywhere were finally answered yesterday when the New Jersey Sports and Exposition Authority decreed: Let there be grass at Giants Stadium.

For the first time since the Meadowlands complex opened in 1976, the artificial turf so despised by most players will be permanently replaced by natural grass next season. Several "operational and financial issues" are still to be ironed out between the sports authority and its tenant clubs, but the biggest hurdle has been cleared to make the transition for the new millennium.

"I don't see that the operational and financial issues are insurmountable, or else, frankly, we wouldn't have made the announcement," sports authority President and Chief Executive Officer James DiEleuterio said. "We're moving forward under the assumption there will be grass in the stadium for the 2000 season."

The consensus to move to grass was reached during a 2¼-hour meeting that included DiEleuterio and sports authority Chairman Raymond Bateman, Giants Executive Vice President John Mara and Jets President Steve Gutman. The system implemented for several football games this summer, featuring 6,400 replacement trays of grass, will make Giants Stadium the 18th of 30 NFL facilities to feature a natural, player-friendly surface.

"This," Giants coach Jim Fassel said, "is state-of-the-art."

Scott Clark, who owns the Delhi, NY-based company installing the new field, made a compelling presentation to open the meeting and satisfied all concerns Mara and Gutman had about long-term duration of his grass system. He allayed any fears that grass damage would become irreparable as the winter wears on, especially under the stress of games on consecutive days.

"They don't want to play on painted dirt," Clark said. "They want grass, but they want good grass. And I think we're going to be able to give it to them. Everything we're doing to this field is to make it the very best field in the world."

After Clark answered their questions, the sports authority, Giants and Jets agreed it was time to make the change to grass and issued a joint statement to that effect.

"It was important for Scott Clark to be confident," Mara said, "and he was confident."

Said Gutman: "There is a general atmosphere and trend in the country that grass fields are coming again. It's something that is desirable and wanted. Grass is something you want to try to achieve."

Over the past four years, soccer's MetroStars have spent more than \$3 million of their own money installing grass until the football season. General Manager Charlie Stillitano said the commitment to grass by his Giants stadium co-tenants was "a long time coming," but did not indicate how it might affect the team's interest in building a stadium of its own in Newark.

"Our choices are either to build at the sports authority, build in Newark or stay at Giants Stadium," Stillitano said. "Either way, we're delighted because any stadium project would take several years, so next season we would have to play at Giants Stadium regardless."

Chief among the operational and financial issues to be addressed in future meetings is how the initial bill of more than \$3 million will be divided among the sports authority and the three clubs. One person familiar with the talks said that the sports authority is expected to pick up the tab on the anticipated \$500,000 annual maintenance fees for the field.

We have a good relationship with the three franchises," DiEleuterio said, "and we're going to sit down and hammer this all out."

Once he acquires the necessary permits from New Jersey, Clark plans to begin installing the cooling, heating and humidifying systems for the field this winter. The grass trays used this summer are being maintained behind the Meadowlands Racetrack. They will be installed on top of the existing stadium turf in late March, complete with fresh grass.

In addition, trays containing the equivalent of another 1.2 football fields will be kept behind the racetrack. They will be used to replace the ones in the stadium when they get worn out from bearing the brunt of approximately 20 football games, 30 soccer games and events such as concerts hosted by the Meadowlands.

According to Clark, the field at Giants Stadium was trampled on for 79 various activities in a span of 160 days

continued on page 4

Splendor In The Grass – continued from page 3

during the spring and summer. They included everything from team practice sessions to marching band rehearsals.

For the sake of keeping the grass in top shape, Clark said, "We need to get the non-revenue producing things out of there." The spare grass field could be used for some practices.

DiEleuterio emphasized that while "you certainly want to get some traffic off of (the grass) ... I don't think anyone is interested in canceling events as a result of having the grass there."

Thus, he expects Giants Stadium to continue to host New Jersey State Championship football games on a rotating basis, as it has in the past. They would fall under DiEleuterio's umbrella of a "typical schedule at Giants Stadium."

The debate of artificial turf vs. grass has long been waged. Players have always contended they are more prone to injury on turf, which is hard as cement, rips their skin and pounds on their joints. However, Mara and Gutman said recent non-contact injuries suffered by Jets stars Vinny Testaverde (ruptured Achilles tendon) and Wayne Chrebet (broken foot) on the Giants Stadium turf did not factor into this decision.

Gutman called those mishaps "a run of bad luck," defending the current turf as "a fine surface." But in a survey conducted by the NFL Players Association last year, the playing surface at Giants Stadium was among the five worst in the league. Most Giants and Jets players rejoiced when they learned that they will be playing on grass next season.

"That's great," Giants wide receiver Amani Toomer said. "Now I won't have to try to sleep on one side after having the skin peeled from my body by the turf."

Said cornerback Phillippi Sparks: "I don't care about the rain or mud, anything is better than turf. Heck, they could put a bunch of Chia pets together and let us play on it and that would be better than turf."

"There's no comparison," center Brian Williams said. "Besides, it's kind of nice to get dirty once in a while."

Indeed, when it comes down to it, the romantic notion that football should return to its natural habitat finally won out.

"Aesthetically, from a tradition point of view, the game was meant to be played on grass," Mara said. "And we all feel better that it will be played on grass here now."

Alas, Testaverde's agent, Michael Azzarelli, said: "Too bad it didn't happen sooner." ■

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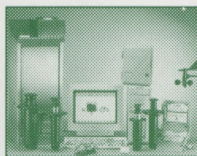
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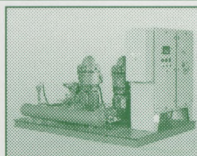
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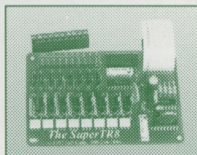
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The Tragic Carpet?

A Rash Of Injuries Is Again Focusing Attention On The Safety Of Artificial Turf

By Ed Barnes

Reprinted from TIME, October 4, 1999

First it was the Jets. Wayne Chrebet, a wide receiver, broke his foot while making a cut upfield during an exhibition game. Then Vinny Testaverde, their quarterback, popped his Achilles tendon pushing off to recover a fumble. Last week the Atlanta Falcons star running back, Jamal Anderson, tore a knee ligament trying to outmaneuver linemen. In each case the only contact the players had was with the artificial turf. Both teams had been playoff hopefuls, the Falcons eyeing a return to the Super Bowl. Now it is doubtful these teams can put together a winning season. At least nine other players have faced similar injuries in just the second week of the schedule.

These season-ending injuries have reignited a battle over the safety of artificial turf, particularly AstroTurf, the dominant brand. For at least 15 years the issue has been discussed and studied by doctors and the National Football League. Scientific studies have been inconclusive. AstroTurf's owner insists its carpet is safe. "Every time there is an injury on turf, it is the turf's fault; when it is on grass, it is just the game. Football is a dangerous game, whether it is played on turf or grass," says James Savoca, vice president of Southwest Recreational Industries. Yet at least three deaths and several cases of paralysis have been blamed on artificial surfaces.

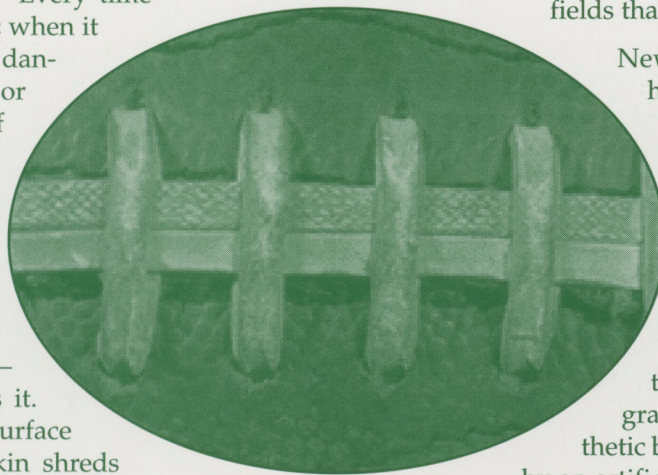
More than a few players would like to slam Savoca to the carpet just to make a point. Nearly everyone who plays on artificial turf — think sandpaper laid over concrete — hates it. Players say ligaments pop because the surface doesn't "give" once the foot is planted. Skin shreds from its abrasiveness; heads hurt from its hardness. Clark Gaines, regional representative of the National Football League's Players Association, says artificial turf causes up to three times as many non-contact injuries as grass. "These injuries simply don't happen on a natural surface," he said. "Players have their own terminology for it. They call it turf injuries."

Players also charge that even without injuries, the pounding their bodies take on turf shortens their careers. Recently, baseball player Barry Larkin of the Cincinnati Reds demanded a trade to a grass-field team to try to extend his career. According to Gaines, many free agents have refused to sign with teams whose home field is car-

peted. The Green Bay Packers requested a preseason game with the New Orleans Saints to be played on grass, so the Superdome was covered with a temporary grass pitch.

Artificial turf now covers the field in about half of all football stadiums at the professional and major college level, as well as more than 1,500 high school and small college fields. AstroTurf controls the bulk of the market, a \$50 million-a-year business.

That market is under pressure as player opposition, new technology and the rise of single-purpose stadiums have swung team owners over to grass. Virtually every new non-domed stadium under construction will have a grass surface. The Chicago Bears and the New England Patriots, as well as a number of baseball teams, switched back to grass several years ago. But even Gaines acknowledges that grass isn't the answer everywhere, particularly in northern climes and on municipal fields that get tons of use.



New technology may have a solution. An upstart company called FieldTurf, in alliance with sports monolith Nike, has developed a surface that more closely resembles the texture and response of grass. It is made of synthetic blades and is held up by an artificial dirt composed of silica and rubber that can be made of recycled running shoes. The University of Nebraska recently installed the surface after a year in which 40 football players sustained injuries on AstroTurf. "It is the closest thing to natural grass that I've seen," says John Ingram, the Cornhuskers' director of athletic facilities. "This year we haven't had any injuries, and the players like it."

AstroTurf recently introduced a similar product, provoking a nasty battle and a patent-infringement suit. A new turf war is on, but grass may be the ultimate winner. ■

The Alliance For Environmental Concerns

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Dr. Sumner is an expert on risk assessment, food safety and pesticide safety. He teaches and conducts research in these areas of expertise at the Wake Forest University School of Medicine. He has lectured on recognition and management of pesticide poisoning and general toxicology for nearly 2 decades. Prior to his years as a professor, Dr. Sumner worked for the Ciba Crop Protection (now Novartis) for over 25 years in the areas of metabolism, toxicology, environmental fate and exotoxicology. While at Ciba he taught organic chemistry at the University of North Carolina at Greensboro.

Dr. Sumner makes understandable the very complicated issues of risk assessment! He plans to share with our conference attendees his knowledge on risk analysis of the chemicals our industry relies on, as well as risk assessment of the *natural* products being presented as the safer alternative. Come learn the facts about the asthma, bee-stings and the appropriateness of various IPM programs from this knowledgeable speaker!

Review Our Seminar's Exciting Agenda ►



The Alliance For Environmental Concerns

Annual Meeting & Seminar

Thursday • November 18, 1999

8:30 a.m. - 4:30 p.m.

Fiddler's Elbow Country Club

Bedminster Township, NJ

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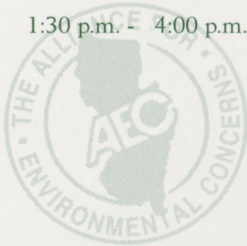
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AGENDA

8:30 a.m. - 9:00 a.m.	Registration & Continental Breakfast Silent Auction Bidding
9:00 a.m. - 9:15 a.m.	Alliance Business Announcements Ilona Gray Environmental Award
9:15 a.m. - 10:00 a.m.	"DEP Update" - Ray Ferrarin - NJDEP - Pesticide Control Program
10:00 a.m. - 10:45 a.m.	"The Realities of IPM - The Past, The Present, The Future" - Richard Cooper - Cooper Pest Control
10:45 a.m. - 11:30 a.m.	"Balance of Risks - Synthetic vs. Natural Chemicals" - Dr. Darrell Sumner
11:30 a.m. - 12:30 p.m.	Lunch - Silent Auction Bidding
12:30 p.m. - 1:30 p.m.	Countering Calls for Pesticide Use Restrictions and Bans: What You Can Do/ IPM and Chemical Use on Golf Courses: The San Francisco Case Study - Kevin Hutchins - Presidio Golf Course, Arnold Palmer Golf Management, San Francisco, CA - Mike Blankinship - McLaren / Hart ChemRisk, Sacramento, CA
1:30 p.m. - 4:00 p.m.	Panel Introductions - Panel Discussions of IPM Moderator: - Fred Langley - RISE IPM Panel Members: - Mr. Richard Cooper - Cooper Pest Control - Dr. Donald Booth - Bartlett Tree Experts - Dr. Kirk Hurto - TruGreen ChemLawn - Ms. Jane Nogaki - NJ Environmental Federation - Dr. Darrell Sumner - The Bowman Gray School of Medicine
4:00 p.m. - 4:30 p.m.	Announcements: Silent Auction Winners - Door Prizes
4:30 p.m.	Meeting Adjournment



Fiddler's Elbow Country Club

811 Rattlesnake Bridge Road
Bedminster Twp., NJ 07921
Club House: 908-439-2123
Golf Pro Shop: 908-439-2513

FROM WOODBRIDGE:

Route 1 SOUTH to Route 287 NORTH; Route 287 NORTH to Route 78 WEST; Route 78 WEST to Exit 26 - Lamington/North Branch. Left at stop light. Cross over Route 78 on Rattlesnake Bridge Road to Fiddler's Elbow C.C. - immediately on right.

FROM NORTHERN NEW JERSEY:

Routes 46 and 80 WEST to Route 287 SOUTH; Route 287 SOUTH to Route 78 WEST to Exit 26 - Lamington/North Branch. Left at stop light. Cross over Route 78 on Rattlesnake Bridge Road to Fiddler's Elbow C.C. - immediately on right.

FROM NEWARK AIRPORT:

Route 78 to Exit 26 - Lamington/North Branch. Left at stop light. Cross over Route 78 on Rattlesnake Bridge Road to Fiddler's Elbow C.C. - immediately on right.

FROM WILMINGTON & PHILADELPHIA:

N.J. Turnpike NORTH to Exit 10 - Route 287 NORTH; Route 287 NORTH to Route 78 WEST; Route 78 WEST to Exit 26 - Lamington/North Branch. Left at stop light. Cross over Route 78 on Rattlesnake Bridge Road to Fiddler's Elbow C.C. - immediately on right.

FROM NEW YORK CITY (TWO OPTIONS)

George Washington Bridge and Route 80 WEST to Route 287 SOUTH; Route 287 SOUTH to Route 78 WEST; Route 78 WEST to Exit 26 - Lamington/North Branch. Left at stop light. Cross over Route 78 on Rattlesnake Bridge Road to Fiddler's Elbow C.C. - immediately on right.

- OR -

Lincoln Tunnel to the NJ Turnpike SOUTH to Exit 14 onto Route 78 WEST to Exit 26 - Lamington/North Branch. Left at stop light. Cross over Route 78 on Rattlesnake Bridge Road to Fiddler's Elbow C.C. - immediately on right.

FROM THE WEST (PENNSYLVANIA, EASTON, PHILLIPSBURG):

Route 78 EAST to Exit 26 - Lamington/North Branch. Right at the stop light to Fiddler's Elbow C.C. - immediately on right.

FIDDLER'S ELBOW COUNTRY CLUB DRESS CODE:

Appropriate dress is required. Bermuda-length shorts are permitted for golf and in the Grill Room area. However, jeans, sneakers, t-shirts and sweatsuits are not permitted. Jackets and slacks for gentlemen are required after 5:00 p.m. The dress code is strictly enforced. Please observe the stated guidelines whenever visiting the Club. Your consideration is appreciated.

Pesticide Bans Are Increasing... But Are They Really Reducing Risk?

Did you know that the City of San Francisco was the first to adopt a pesticide ban? Did you know that the City and County of Albany, New York has adopted a pesticide ban? Did you know that the New Jersey municipality of Mountain Lakes Borough is considering a pesticide ban, citing the success of San Francisco's ban?

Come Here The Real Story!

The San Francisco / Presidio Golf Course Story

Prominent golf course superintendent Mr. Kevin Hutchins from the highly publicized "Presidio Golf Course" in San Francisco, California will share with us the difficulties he has experienced in managing a golf course under the strict regulations of the National Park Service and City of San Francisco.

Countering Calls for Pesticide Use Restrictions and Bans: What You Can Do

Mike Blankinship of McLaren/Hart ChemRisk is an environmental chemist and toxicologist that has been involved with various users of agricultural and structural pest control chemicals such as applicators, school and park district administrators, and golf course superintendents that are practicing IPM and are facing pesticide bans. He has provided these users with Chemical Application Management Plans (CHAMPs), Integrated Pest Management Plans (IPMPs) and ecological and human health risk assessments to demonstrate that pesticides have an important role to play in managing pest populations and that these uses can be safe.

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Deadline for Winter Issue: December 31, 1999

Did You Know...

- **Grateful Berry Growers Honor Two Rutgers Scientists**

Prominent players in New Jersey's cranberry and blueberry industries helped dedicate a university research facility to the late Philip E. Marucci and Edward V. Lipman.

By Leonard N. Fleming, Inquirer Staff Writer, The Philadelphia Inquirer, South Jersey, Monday, October 18, 1999

They were admired as caring men and scientists who had a passion for agriculture and the cranberry and blueberry industry in New Jersey.

The pair's mark on the industry is now indelible: On Friday, the agricultural research center here was renamed the Philip E. Marucci Center for Blueberry and Cranberry Research and Extension. A new wing of the laboratory building was named in honor of Edward V. Lipman.

With the fresh smell of berries in the air, more than 100 growers, scientists and university officials gathered with the families of the two deceased Rutgers graduates, who had dedicated their lives to research on how to improve the breeding of blueberries and cranberries.

William S. Haines, Sr., who owns the biggest cranberry and blueberry farm in New Jersey and is chairman of the Rutgers research advisory committee, called Marucci a "compassionate person" who was "always for the little guy." He dubbed Lipman as "Mr. Agriculture," a friend who did all he could to help the growers succeed by such means as securing loans for them.

Marucci was an authority on blueberry and cranberry cultivation, serving as chief scientist of the center for more than 30 years and bringing national recognition to the center and to Rutgers.

Lipman spent 32 years contributing to Ocean Spray and the grower's cooperative. He also was the president of the New Jersey Agriculture Society and the state Board of Agriculture.

Rutgers president Francis L. Lawrence said the two had "left an indelible imprint on the center."

Lipman's son Ned said his father had two great loves besides his family: Rutgers and cranberries. "I know that he is watching here today," he said. "We are deeply appreciative of this recognition."

The Lipman wing, paid for by New Jersey growers, includes a library, a main meeting room, office space, a kitchen and two incubator rooms.

Marucci's sister Ruth said she felt proud that the industry would honor him with a building in his name. "If he had to be here, he wouldn't like that because he was very modest and a little shy," she said.

- **The Year 2000 Marks 100 Years for the New Jersey State Golf Association**

- **PLCAA To Promote Careers At FFA Convention**

Through its involvement with the Future Farmers of America, the Professional Lawn Care Association of America hopes to encourage FFA members to choose a career in the lawn and landscape industry. To this end, PLCAA exhibited and gave away two \$500 scholarships at the 72nd National FFA Convention in Louisville, KY, October 27-30, 1999.

- **IANJ Celebrates 25th Anniversary**

Saturday night, September 18, 1999 members of the Irrigation Association of New Jersey started boarding the "Queen of Hearts," docked at Lincoln Harbor in Weehawken, for the start of a night of celebration to commemorate the 25th Anniversary of the founding of the IANJ.

Food and drinks were served upon boarding as everyone greeted each other. After about an hour, the captain set out on a course toward the Statue of Liberty and to breathtaking sites along the Hudson and East Rivers.

After some fine dining, dancing and more spectacular views of the Manhattan skyline, there was a drawing for 25 contractors to win \$150 cash each. There was also a Grand Prize drawing of a trip for two to the Atlantis resort in the Bahamas. The Bahamas trip was won by Franco and Ellen DiMeglio from Green Oasis Maintenance.

A special presentation was made by President Walter Muguvin on behalf of the Board of Trustees to Charter Member Mary Lou DesChamps of Storr Tractor Co. for her never-ending support and dedication to the IANJ. ■

The Deer Herds Are Woefully Over Populated... The Environmentalists Resist Suggested Controls.

So... People Die, Crops Are Destroyed, Shrubs Are Devoured & The Beat Goes On! When Will The Nonsense End?

Deer Hits 2 Cars, Killing One Driver

By John Barna, Staff Writer
Reprinted from the Gloucester
County Times, Woodbury, NJ,
Wednesday, October 20, 1999

WEST DEPTFORD TWP. – A Harrison Township woman was killed Tuesday night when a deer, struck seconds earlier by another motorist, crashed through the windshield of her Ford Explorer, police said. The woman was reportedly transporting two boys home from a fall league baseball game when the accident occurred at 8:25 p.m. on Parkville Road.

product that has been prevalent in lawn care and pest control markets for more than two decades, for example, was found by EPA to be more than seven times as toxic as is acceptable under the new guidelines.

An additional concern of pesticide suppliers is that the new guidelines established by FQPA don't require EPA to consider the benefits of a particular pesticide product and its use controlling unwanted and potentially dangerous pests as early legislation did.

Legislation that would require EPA to analyze all pesticides with more widely accepted scientific practices has been introduced into both the U.S. House of Representatives and the U.S. Senate, and pro-lawn care individuals are optimistic about both bills' chances of passing some time this year.

FQPA Threat Looms

Reprinted from Lawn & Landscape, October 1999

Dursban, a popular insecticide from Dow AgroSciences, Indianapolis, Ind., became the first widely used green industry pesticide to find itself in the crosshairs of the U.S. Environmental Protection Agency.

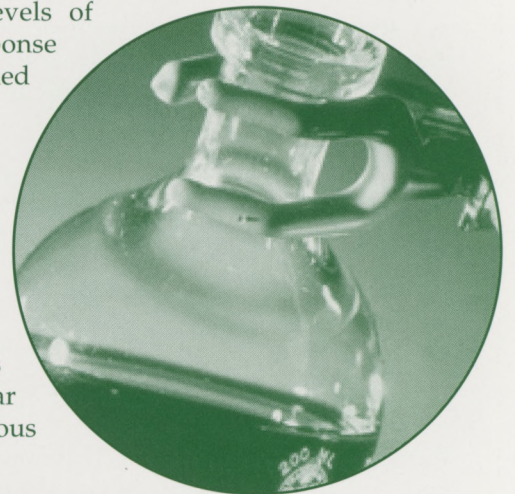
As a result of the Food Quality Protection Act, which was passed in August 1996, EPA is reassessing the safety of all previously registered pesticide products, but now the Agency is evaluating these products with widely different standards than those used for the last 27 years.

The EPA has been widely criticized to date, however, for what pesticide suppliers and a host of third-party scientists have termed "unscientific based research". These critics have charged that EPA has launched a politically motivated attack on specialty pesticide products, safe and unsafe.

"We believe in and stand for good science – that's what we're all about as a company," noted Tim Maniscalco, manager for government and public affairs for Dow AgroSciences. "All that we're asking is that EPA use good science as it reassesses all of these products."

Instead of sound scientific research, critics of the EPA claim the Agency ignores pesticide manufacturer's research and instead relies on tremendously conservative default assumptions about the relative toxicity levels of pesticide products in a response to environmentalists' continued lobbying efforts.

Chlorpyrifos, the active ingredient in Dursban and a



Some More Facts About Pesticide Safety That Bear Repeating!

What To Know About Pesticides & Food Safety

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- In addition to the federal government, state governments maintain complete pesticide regulation and monitoring systems.
- According to the **National Cancer Institute**, there is no scientific evidence that ingestion of pesticide residues on fruits and vegetables causes cancer in human beings.
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New Turfgrass Center Grows At Rutgers

By Hollie A. Gilroy

Reprinted from RUTGERS FOCUS, September 24, 1999



Some of the most widely grown grasses in the world have sprouted from research conducted at Rutgers. On September 17, a partnership between the university and the turfgrass industry produced another major turf advancement at the Cook College campus – groundbreaking for the new Turfgrass Education Center.

Some 80 well-wishers braved the flooding that followed Hurricane Floyd and attended the ceremony on Horticultural Farm II. Among the attendees were Arthur Brown, New Jersey secretary of agriculture; Bruce Carlton, executive dean of Cook College and

executive director of the New Jersey Agricultural Experiment Station; and turfgrass-industry representatives.

The center, to be built alongside the world-renowned turf research plots, will combine laboratory, classroom and computer facilities to “improve the educational opportunities for students who are going to be our future golf course superintendents and leaders in the turf industry,” announced Dr. Bruce Clarke, director of the Center for Turfgrass Science.

Similarly, Carlton noted, “For the first time since Rutgers launched turfgrass research in the 1920’s, our faculty, our students and our certificate program participants will enjoy state-of-the-art laboratory, classroom and computer facilities – all under one roof.”

“When completed, this building will truly be an asset to students, to the turfgrass-science program and, most importantly, to the landscape and golf turf industries throughout the Northeastern United States,” he said.

The \$750,000 facility is being funded with a heavy commitment from the turfgrass industry.

Dr. Bruce Clarke, Director, Center for Turfgrass Science, congratulates Mr. Ralph Geiger (left) on having the new Turfgrass Education Center at Cook College/Rutgers University named in his honor.



Official groundbreaking ceremony for the new Ralph Geiger Turfgrass Education Center on the Cook College Campus, North Brunswick, New Jersey was held on September 17, 1999. (r to l) Edward Lipman, Jr., Director, Office of Continuing Professional Education; Sam Leon, President, New Jersey Turfgrass Foundation; Dr. Zane Helsel, Director, Rutgers Cooperative Extension; Floyd Bragg, Rutgers University Foundation; Mike Mongon, Golf Course Superintendents Association of New Jersey; Dr. Bruce Clarke, Director, Center for Turfgrass Science; Dr. William Meyer, Associate Director, Center for Turfgrass Science; Gene Westmoreland, Tournament Director, Metropolitan Golf Association; Dr. Bruce Carlton, Executive Dean of Agriculture and Natural Resources; Ralph Geiger, donor; John Buechner, President, New Jersey Turfgrass Association; and Arthur Brown, New Jersey Secretary of Agriculture.



Ralph Geiger Turfgrass Education Center



Over 70 participants turned out on September 17, 1999, the day after Hurricane Floyd, to assist in the groundbreaking ceremony for the Ralph Geiger Turfgrass Education Center on the Cook College Campus. This 5,000 square foot building will provide turfgrass students from throughout the region with a state-of-the-art classroom, computer lab, diagnostic lab, library, and conference facility.



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- **Plant Diagnostic Laboratory Highlights**
 - **Fungicide Injection Technology for Improved Root Disease Control**
 - **Disease of Landscape Ornamentals**
 - **Opportunities for the Genetic Improvement of Underutilized Plants for Turf**
 - **Lawn Care Suggestions – November**



Green World

applied turfgrass research, from Rutgers the State University, and the New Jersey Turfgrass Association

Plant Diagnostic Laboratory Highlights

By Richard Buckley, Laboratory Coordinator

Turfgrass

We thought we dodged the gray bullet, but then Dennis and Floyd came to town. With all the rain, **Gray leaf spot**, caused by the fungus *Pyricularia grisea*, has reared its ugly head. The disease was first diagnosed on golf turf from our area on September 2nd. On the 14th, samples began to come into the laboratory on a daily basis. From the submissions, it appears the disease is more common in northern New Jersey counties and New York than in the south. We even diagnosed the disease on perennial ryegrass from the Great Lawn in Central Park. The common thread among the submitted samples is the fairways had all been recently seeded. **Gray leaf spot** is a very well known seedling disease. Most of the samples also have some "regular" **leaf spot** activity, caused by the fungi *Drechslera siccans* (brown blight) or *Bipolaris sorokiniana*.

Early in the period **pythium blight**, **pythium induced root dysfunction**, and **pythium seedling blight** cause problems on several golf courses. Remember that *Pythium* can cause problems in cooler weather, particularly in newly seeded turf stands. Diseases caused by species of *Rhizoctonia* were also common. **Brown patch**, caused by *Rhizoctonia solani*, was active during the humid period at the beginning of the month, and **yellow patch**, caused by *Rhizoctonia cerealis*, is active now. **Anthracnose** continues to be an issue for some turf managers at this time. The disease was identified on landscape turf submitted from Morris County and on golf course turf from Pennsylvania. **Rust** is also very active. Kentucky bluegrasses and perennial ryegrasses are the favored hosts for **rust**.

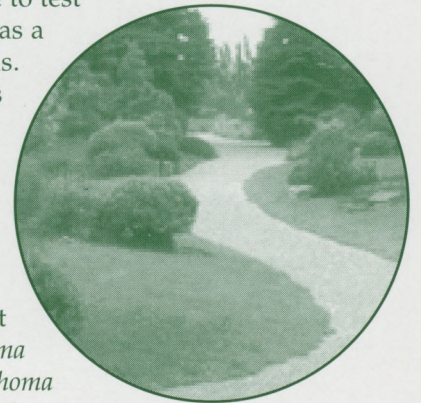
Dead spot, the new disease described by Dr. Peter Dernoeden of the University of Maryland, has finally been confirmed on a golf course in New Jersey. To date, the fungus *Ophiosphaerella* was the only seen by this laboratory on out-of-state samples or on Rutgers research plots.

I won't name names, but it's a new golf course in Monmouth County. Check out the third green, those aren't ball marks!

Landscape

Oak leaf scorch, caused by the xylem-limited bacterium *Xylella fastidiosa*, was confirmed in pin oak samples from Mercer County. Several other samples are currently being tested for the disease. Other suspect samples tested negative and were subsequently diagnosed with environmental stress. If you suspect **oak leaf scorch**, now is the time to test your trees. Boxwood has a myriad of problems. Environmental stresses like winter injury, sunscald, or nutrient imbalances seem to plague the shrub. Boxwood that is stressed in this manner is an excellent host for the fungi *Macrophoma* and *Volutella*. *Macrophoma* causes leaf tissue to brown, and *Volutella* causes branch dieback.

Almost every boxwood sample that we look at in the laboratory has these fungi. This week's sample came from a landscape in Morris County. Other diseases and insects of note include: **white pine weevil** injury from pines in Atlantic and Passaic counties, **botryosphaeria canker** on sweet gum from Monmouth County; and **sphaeropsis tip blight** on Japanese black pine from Atlantic County. ■




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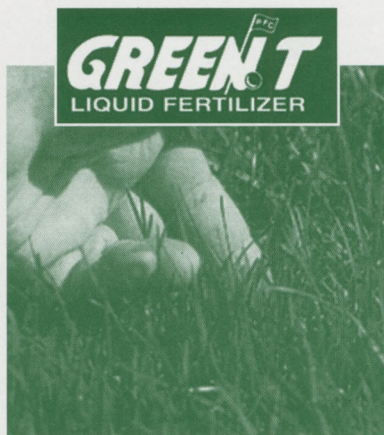
Fungicide Injection Technology for Improved Root Disease Control

By Bruce B. Clarke, James A. Murphy, Margaret E. Secks, and Pradip Majumdar,
 Department of Plant Pathology and Plant Science

Patch diseases, caused by ectotropic root-infecting fungi, are among the most difficult diseases to control in warm- and cool-season turf. Although often effective, foliar applications of turfgrass fungicides are expensive and must be used throughout the growing season at high rates to attain commercially acceptable levels of disease suppression. Transport studies indicate that most fungicides applied to the foliage for patch disease control are retained in the foliage or thatch layer and only reach the root zone in low concentrations. The objectives of our field investigations were: 1) to compare the efficacy of surface and subsurface applications of azoxystrobin (Heritage) for the control of patch diseases, 2) to assess the impact of injection hole spacing and depth on fungicide efficacy, and 3) to determine whether fungicide injection could be used to reduce fungicide rates.

Studies were conducted from 1996 to 1997 on a bentgrass (*Agrostis palustris*) fairway naturally infested with *Gaeumannomyces graminis* var. *avenae*, the incitant of take-all patch, and a Kentucky bluegrass (*Poa pratensis*) turf artificially inoculated with *Magnaporthe poae*, the causal agent of summer patch. Azoxystrobin was applied as either surface or subsurface (1.9, 3.8, or 7.6 cm injection depth and 2.5 x 2.5 cm or 5.0 x 5.0 cm injection hole spacing) treatments using a CO₂ powered sprayer (1,000 L H₂O ha⁻¹ @ 0.3 MPa) or a prototype fungicide applicator (15,000 to 62,000 L H₂O ha⁻¹ @ 10.5 to 22.5 MPa), respectively. Azoxystrobin was applied in late-May, late-June, and late-July @ 0.6 kg ai ha⁻¹ in 1996 and 0.3, 0.45, and 0.6 kg ai ha⁻¹ in 1997. Treatments were arranged at each site in a randomized complete block with four replications.

Azoxystrobin provided good to excellent summer patch control when applied as either surface or subsurface treatments. In 1996, the 2.5 x 2.5 cm injection spacing (all depths) provided disease suppression equivalent to surface applications. At the 5.0 x 5.0 cm spacing, however, only the 1.9 cm treatment was as effective as the foliar sprays. At the second site in 1997, disease pressure intensified and subsurface treatments were generally more efficacious than surface applications. Compared to the 5.0 x 5.0 cm injection spacing, disease was improved 60% at the 2.5 x 2.5 cm spacing (all depths) and was greatest when fungicides were injected to a 1.9 cm depth. When fungicide rates were reduced to either 0.3 or 0.45 kg ai ha⁻¹, excellent disease control was obtained (90% and 91% respectively) with subsurface injection (1.9 cm depth; 2.5 x 2.5 cm spacing) but only fair control (69% and 54% respectively) with surface treatments. In the absence of fungicide, water injection significantly decreased disease severity in 1996 but not in 1997. Similar results were obtained in the take-all patch control study (year 1 = fall 1996 to spring 1997). Although disease suppression decreased at the 3.8 and 7.6 cm depths, the 1.9 cm treatment was as effective as the foliar treatments. Take-all patch control attributed to subsurface applications was independent of injection spacing. ■



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Diseases of Landscape Ornamentals

By Ann B. Gould, Ph.D., Plant Pathology

End of Growing Season Notes

Drought stress on landscape vegetation was a major concern this past growing season (refer to the July 29th edition of this newsletter for more information). Although we have had considerable rain in the last few weeks, trees and shrubs that were affected are not out of the woods. Severe drought has affected the root systems of many landscape trees (especially newly transplanted ones), and it often takes trees five or more years to recover from the effects of a severe drought. Furthermore, excessive moisture in some communities has compounded the problem by displacing oxygen from soil, which stresses root systems even further. Keep these stresses in mind during the next few years when monitoring landscape trees and shrubs for plant health.

The Rutgers Plant Diagnostic Laboratory has received samples this year of oak trees with diseases that affect the leaves. In many cases, oaks

throughout New Jersey have been simply affected by springtime **leaf spot diseases** and **anthracnose**. These diseases are very common, occur when weather during the spring is good for disease development, and are merely cosmetic and do not require chemical control. Other oaks, however, have exhibited a leaf scorch typical of moisture stress (particularly on young transplanted trees) or of the biotic disease, **oak leaf scorch**, which is caused by the bacterium *Xylella fastidiosa*. The causes of leaf scorch (both biotic and abiotic) on oaks were discussed in the August 26th edition of this newsletter. Since symptoms of leaf scorch are still evident on trees, refer to this article when trying to identify the cause of the scorch. Definitive diagnosis for bacterial leaf scorch requires a special laboratory test. If in doubt, contact your local Rutgers Cooperative Extension fact sheet FS 875.

Evidence of **leaf spot diseases** and **anthracnose** is still present on many other shade trees (not just oaks!) and

shrubs in New Jersey landscapes. Again, trees become infected with the fungi that cause these diseases in the spring, and disease severity depends on environmental conditions present at the time. To manage leaf spots and anthracnose *next year*, rake away fallen leaves this autumn. This helps to remove a source of inoculum (or the source of the disease) next growing season.

Powdery mildew is still evident on many landscape trees and shrubs. Powdery mildew is a very common disease and is caused by fungi that grow on the surface of leaves. This growth is evident as "powdery" spots or mats on tissue surfaces. Hosts commonly affected by powdery mildew include ash, azalea, and rhododendron, flowering dogwood, elm, lilac, oak and rose. In most landscape trees and shrubs, powdery mildews do little harm to the host. Refer to the June 17th edition of this newsletter for more information. ■

Diseases of Turfgrass

By Bruce B. Clarke, Ph.D., Turfgrass Pathology

New Fungicide

Novartis Crop Protection, Inc. recently received a turf label for Compass (trifloxystrobin), a new strobilurin fungicide. Compass has been particularly effective against **brown patch** in tests at Rutgers, but is also labeled for the control of **leaf spot**, **anthracnose**, **summer patch**, **gray leaf spot**, **red thread**, **pink patch**, **rust** and **pink snow mold/Fusarium patch**. Although Compass is a strobilurin like Heritage, it is in a different subclass called

oximinoacetates. Since this product is not translocated in the vascular tissue, it functions much like a localized penetrant. The fungicide, however, is distributed locally within the leaf (translaminal activity) and does appear to be redistributed through a vapor phase short distances (2-3 inches) within the turf canopy.

Stem and Crown Rust

These diseases are prevalent on susceptible Kentucky bluegrass and

perennial ryegrass cultivars, respectively, at this time. As **rust** intensifies, the turf prematurely yellows and orange pustules called uredia (reproductive structures) appear on affected blades. To control both **stem** and **crown rust**, maintain adequate fertility and apply Banner, Bayleton, Daconil, Eagle, mancozeb, Manicure, Sentinel, or Thalonil per manufacturer's recommendations. ■

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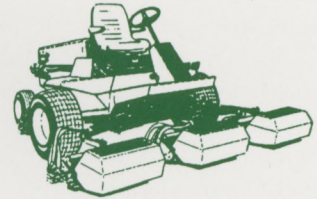
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Opportunities for the Genetic Improvement of Underutilized Plants for Turf

By Reed Funk, Department of Plant Science

Exciting progress has been made during recent decades in the genetic improvement of many turfgrasses including perennial ryegrass, tall fescue, hard fescue, Chewings fescue and creeping bentgrass. The best new varieties show little resemblance to varieties available in 1960. Population improvement programs in these species were based on collection of elite plants surviving in old turfs. This was followed by many cycles of phenotypic assortive mating followed by phenotypic and genotypic recurrent selection combined with a modified population-backcrossing program. This enabled breeders to make dramatic changes in many characteristics of value to the turfgrass industry. Each cycle of improvement built on all previous cycles in these highly heterozygous, heterogeneous, cross-pollinated species. The discovery, study, and utilization of superior strains of useful Neotyphodium endophytes added to the value of many species. The substantial and continued genetic improvement made in these species and associated symbionts suggests that we will not be able to predict the true usefulness of unimproved species until they have been subjected to an extensive collection and evaluation of their useful genetic variation. This must be followed by many cycles of effective population improvement.

Kentucky bluegrass (*Poa pratensis* L.) continues to be the premier lawn-type turfgrass for temperate regions of the United States and Canada. It is hardy, attractive and widely adapted. Extensive rhizomes enable it to spread and recover from stresses of heat, drought, excess wear, insect injury and disease damage. Kentucky bluegrass has an immense range of

genetic diversity including nearly every characteristic needed in an ideal lawn grass. Its apomictic reproduction allows us to utilize a rare, outstanding, highly heterozygous plant as the foundation of a uniform, true-breeding variety with the advantages of both hybrid vigor and seed propagation.

Single-plants selected from old turfs and controlled hybridization have produced many good, but not truly outstanding, varieties. Our inadequate control of apomictic versus sexual reproduction has limited our ability to effectively use many of the population improvement programs that have been so successful in the rapid genetic improvements of many sexual, cross-pollinated species. New ideas and increased efforts are needed to improve breeding methods in apomictic species.

Most breeding efforts in Kentucky bluegrass have been directed to developing lower-growing, disease resistant turf-type varieties. These efforts should continue. However, considerable emphasis should be made to develop mid-Atlantic types with increased tolerance of heat and drought, improved resistance to and recovery from insects and disease, and high seed yields. This would greatly increase the value of Kentucky in the transition zone.

Genetic improvements are also needed in common-type Kentucky bluegrasses able to produce economical seed yields under dryland production and thrive in low-maintenance turfs. Improved varieties of *P. angustifolia* should be developed and evaluated for this purpose.

Opportunities exist in the selection and improvement of low-growing, fine textured varieties of bulbous bluegrass (*P. bulbosa*), low-growing perennial types of *Poa annua* and *P. supina*.

Interspecific crosses between Kentucky bluegrass x Canada bluegrass (*P. compressa*), Texas bluegrass (*P. arachinifera*) x Kentucky bluegrass, and *P. angustifolia* x Kentucky bluegrass should be of considerable interest and value.

The genus, *Agrostis*, contains a number of species with considerable potential for genetic improvement for turf. Creeping bentgrass (*A. palustris*) is the premier turfgrass for closely mowed golf course putting greens. Penncross, released by the Pennsylvania Agricultural Experiment Station in 1954, dominated the market for improved bentgrasses for over three decades. Following the release of Pennlinks (1986), SR-1020 (1987) and Providence (1988), a number of other improved creeping bentgrasses have been developed. Many were specifically adapted to various areas of the country or management regimes. Considerable potential exists for additional improvements in this species.

Velvet bentgrass (*A. canina* L. subsp. *canina*) can form an attractive, low-growing, compact, soft turf with very fine leaves spreading by creeping, leafy stolons. Dr. Howard B. Sprague, a noted Rutgers agronomist, studied turfgrasses during the 1930's. He felt that velvet bentgrass had great potential. It required little or no fertilizer,

continued on page 20

*Underutilized Plants for Turf –
continued from page 19*

grew well in the sun or shade, and performed well as either a putting green or lawn-type turf.

His variety, Raritan, was released by the New Jersey Agricultural Experiment Station in 1940. Due to disruptions caused by World War II, this variety was lost. Recent research by the Rhode Island Agricultural Experiment Station, Seed Research of Oregon, and the New Jersey Agricultural Experiment Station indicate great potential for additional genetic improvement of this species.

Brown bentgrass (*A. canina* L. subsp. *montana*) is a drought-resistant lawn grass, spreading by rhizomes to form a fine compact turf. It is widespread in the British Isles and found in temperate regions of Europe and Asia. We are not aware of any efforts to collect, evaluate or improve this grass for turf use in the United States.

Colonial bentgrass (*A. tenius*) is extensively used as a lawn grass in the British Isles, northern Europe, and New Zealand, often in mixtures with Chewings fescue. It is also preferred for putting greens and fairways in these countries. High susceptibility to Rhizoctonia brown patch makes it less useful in areas with hot, humid summers. An extensive search for colonial bentgrasses surviving in old turfs of the mid-Atlantic region could well provide germplasm for the genetic improvements needed in this attractive turfgrass.

Dryland or Highland bentgrass (*A. castellana*) is a hardy densely to loosely tufted perennial turfgrass, vigorously spreading stout, short rhizomes. The variety, Highland, was selected in Oregon from naturalized stands. Its characteristics are strongly suggestive of a Mediterranean origin. Recent collections from old, closely mowed turfs in the mid-Atlantic region of the United States indicate that substantial improvement can be

made in attractiveness and turf performance.

Redtop (*A. gigantea*) has been used for pastures, hay and erosion control throughout the northeastern and north central parts of the United States, especially on infertile, poorly drained, acid soils. It was widely used as a temporary grass in lawn seed mixtures prior to the development of improved turf-type perennial ryegrasses. Redtop is more robust and less aggressive than dryland or colonial bentgrasses. Germplasm collection, evaluation and enhancement programs should be effective in developing better adapted varieties with improved performance for low-maintenance turfs on wet, acid and infertile soils.

Significant advances have been made in the genetic improvement of Chewings fescue and hard fescue. Efforts to obtain additional improvements should continue. In addition many opportunities exist for substantial enhancement of turf performance of strong creeping red fescue, slender creeping red fescue, sheeps fescue, blue fescue, and hybrids between hard and blue fescue.

Selections of *Puccinellia* spp. are highly salt tolerant and can produce attractive, fine textured turfs for saline soils and for roadsides where salt is frequently used for removal of snow and ice.

Barkoel, an improved variety of *Koeleria* has produced a surprisingly dense, attractive, low-growing turf under low maintenance conditions, but has not performed well when fertilized. Are we discarding many useful species and germplasm sources because of inadequate evaluation techniques? Recent selections of *Deschampsia* spp. also show promise for low maintenance turfs.

Finer textured, lower growing, darker green selections of orchard grass are occasionally found growing on poor soils and in moderate to heavy shade.

An extensive germplasm collection effort followed by a few cycles of population improvement might make orchardgrass a more useful species for turf.

Zoysiagrass has a tremendous amount of genetic variation and many characteristics needed in an excellent low-maintenance turfgrass. Its native range extends from southern Australia through Indonesia and the Philippines to islands north of Japan. Types exist with a very low growth habit and fine leaves; others have excellent salt-tolerance. It has good resistance to heat, drought, infertile soils, many diseases, and insect pests. Eastern Asia, where many ecotypes evolved, has climate and soils similar to those of eastern North America. If New Jersey and other parts of the eastern United States had been colonized by settlers from Korea and northeast China, it is likely that Zoysia would be our dominant turfgrass.

Dramatic advances have been made in the genetic improvement of bermudagrass for warmer regions. These range from exceptionally fine-textured, low growing varieties (Tifdwarf), and wear-tolerant types for sports turf, to very productive, robust forage grasses. Germplasm collection from the mountains of Africa, Europe, and southern Asia, followed by cycles of population improvement could extend the use of this exceptionally wear-tolerant grass into more northern areas.

White dutch clover, strawberry clover, birdsfoot trefoil, turf-type alfalfa, crown vetch, and perennial sweet pea are examples of legumes which may well play an increasingly important role in many lower maintenance turfs. Symbiotic nitrogen fixation and deep tap roots aid in enhancing soil fertility and structure and promotes growth of associated grasses and other plants. Attractive flowers add to the beauty and diversity of turfs containing legumes. ■

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Lofts Seed Presents More Timely Turf Tips...

Monthly Lawn Care Suggestions



November

FERTILIZATION

Late fall is probably the most important time of the year for lawn fertilization. Fertilizer applied in the late fall will be taken up by the plants and utilized to build a strong root system. Additionally, plants will utilize fertilizer to build food reserves important for good spring growth. Late fall fertilization with Lofts Fall Feed and Seed Starter Plus Iron 17-10-12 (Step 4) will make your lawn green up one to two weeks earlier in the spring than normal and will also provide a healthy

spring growth rate. Fertilizing in the spring encourages a flush of growth, which increases the need for mowing. With fall fertilization, you get all of the advantages of spring fertilization plus the addition of early spring color with less mowing.

SEEDING

November through December is a desirable time to seed bare spots. Seedbed preparation should consist of raking bare spots to enhance seed to soil contact prior to the ground freezing. Seed should be sown on frozen ground. It will not germinate during November and December, but

will remain dormant in the soil until spring and then germinate as temperatures rise.

For best results, select any one of the following Lofts mixtures:

- Deluxe Sun & Shade
- Ecology Mixture
- Sunny Lawn
- Summer Stress
- Tri-Plex Ryegrass
- Repellent Perennial Ryegrass
- A Rebel product, such as Rebel Elite or Rebel Supreme
- Dense Shade
- Palmer's Pride

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State of the Industry Report

Reprinted from *Lawn & Landscape*,
October 1999, Vol. 20, No. 10

market OVERVIEW

"The market is booming," according to Randy James, vice president, Davis Landscape of Hilton Head, Hilton Head Island, SC.

Audrie Seeley, president, Audrie Seeley & Co., agreed when asked about business in Kansas City, MO. "This year has been a great year, and the market should be strong for at least the next three years."

"We've surpassed the best months in our company's history," added Marty Grunder, founder and president, Grunder Landscaping, Miamisburg, OH.

"There is plenty of business out there - I think we'll end up having a great year," echoed P.J. Lenihan, vice president, Nature's Select, Winston-Salem, NC.

And the list of contractors boasting of record sales and booming service goes on and on all around the country.

Companies:	70,000
Revenues:	\$60 billion in 1998
Employees:	875,000
Average years in business:	17.7 years
Average year-round employees:	12.5
Average seasonal employees:	9.4
Average 1998 gross sales:	\$863,800
Average 1998 net profit:	16.4 percent
Average sales growth over 1997:	22.7 percent
Anticipated sales growth for 1999:	19.5 percent
Landscape contractors:	35.3 percent
Lawn maintenance contractors:	19.3 percent
Lawn care company:	14.4 percent
Grounds management:	7.3 percent
Ornamental shrub & tree care:	5.3 percent
Revenues from single-family residential contracts:	58.7 percent
Revenues from multi-family residential contracts:	6.7 percent
Revenues from commercial/industrial contracts:	27.0 percent
Revenues from government contracts:	5.3 percent
Average truck expenditures per company:	\$34,162
Average mower expenditures per company:	\$9,504
Average pesticide expenditures per company:	\$13,045
Average nursery stock expenditures per company:	\$104,027

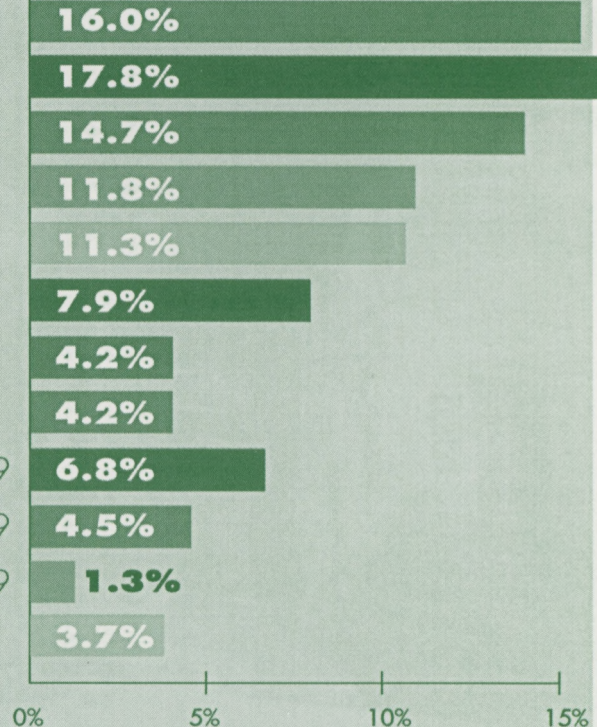
Source: Research USA

continued from page 24

super SALES

The lawn and landscape industry continues to be an industry comprised primarily of businesses generating less than \$500,000 in annual sales. In fact, 71.6 percent of respondents to a survey of 1,000 *Lawn & Landscape* readers reported 1998 gross sales of \$500,000 or less.

Less than \$50,000
\$50,000-\$99,999
\$100,000-\$199,999
\$200,000-\$299,999
\$300,000-\$399,999
\$400,000-\$499,999
\$500,000-\$699,999
\$700,000-\$999,999
\$1,000,000-\$1,999,999
\$2,000,000-\$3,999,999
\$4,000,000-\$6,999,999
\$7,000,000+



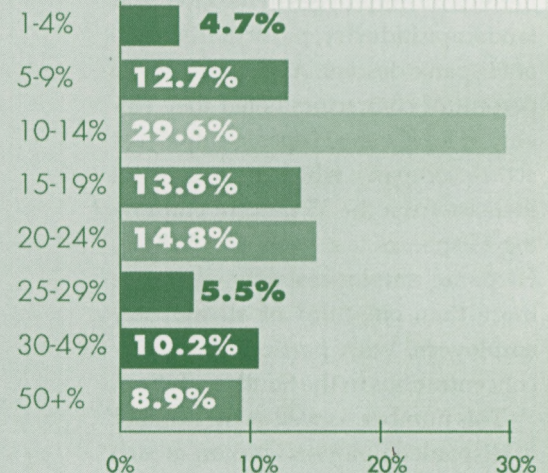
Source: Research USA

good GROWTH

An impressive 72 percent of *Lawn & Landscape* readers who responded to an industry survey expect their 1999 revenues to surpass their 1998 revenues. This represents a slight decrease from last year's survey, which showed that about 72 percent of the industry enjoyed growth from 1997 to 1998, although last year's growth was stronger than this year's - 24.1 percent to 19.5 percent. This slowed pace of growth is certainly understandable, however, as the labor shortage becomes more restrictive the more companies grow and the overall health of the industry continues to attract new competition.

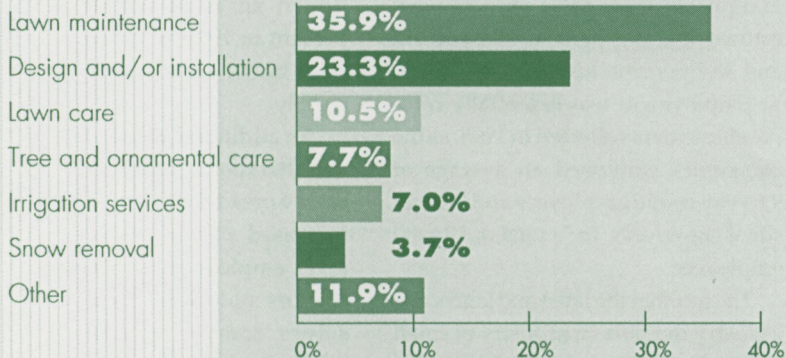
Of greater concern than the slowed pace of growth is the increase in the number of contractors who expected their sales to decrease in 1999 - from 3 percent of respondents last year to 10 percent this year.

To the right is a breakdown of the expected growth ranges from survey respondents who do expect their companies to grow in 1999.

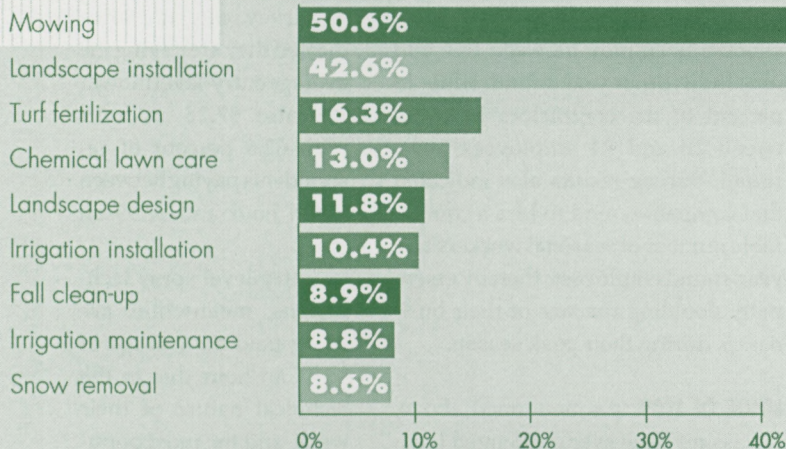


Source: Research USA

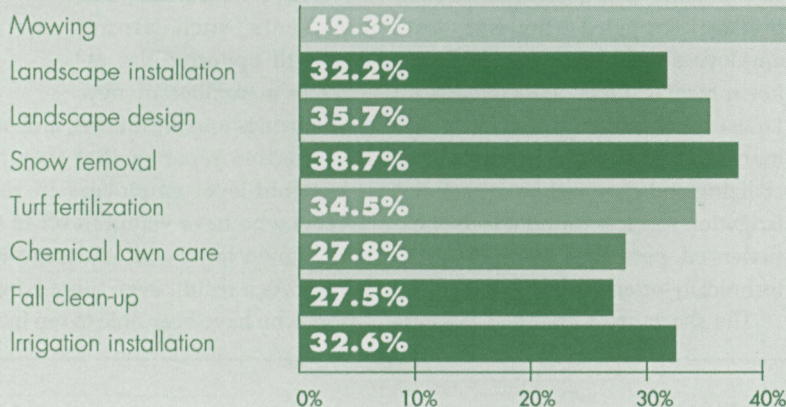
Lawn mowing lies at the heart of most landscape companies, which is certainly not a surprise to anyone in this industry. However, physical lawn maintenance (mowing, edging, trimming, etc.) doesn't even account for 40 percent of the overall revenues generated by this industry, which may surprise some people. While the mix in the first chart below isn't representative of the percent of sales from different services for every contractor, the numbers do reflect the increasingly full-service nature of contractors' businesses and the expected higher billing rates for some services (design and/or installation) over others.



Respondents were also asked to note the three services that represented the largest volume of sales to their company.



Not surprisingly, mowing, landscape installation and landscape design services were ranked as being the three most profitable services contractors offer. Following are respondents' average gross margin for their most profitable services:

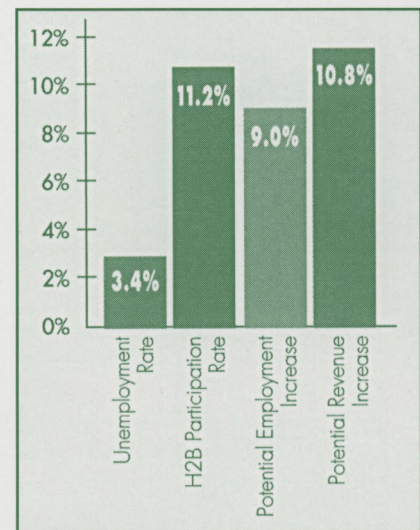


Source: Research USA

turf is TOPS

the labor CRISIS

In recent years, few issues have challenged lawn and landscape contractors' businesses more than the shortage of quality labor. A survey conducted by *Lawn & Landscape* found that downward pressure on prices, the rising level of education and career expectations within the youngest sectors of the American workforce, and the restrictions and regulations placed on hiring legal aliens (most commonly Hispanics from Central and Latin America) by government agencies have combined to severely limit the pool of workers available to lawn and landscape contractors.



The business lost by lawn and landscape contractors from inadequate staffing is substantial in many cases. On average, firms would employ an additional 9 percent more employees if they could find people willing to work. For 1998, these 300 respondents predicted they would have boosted revenues almost 11 percent – nearly \$150 million collectively – had they had an unlimited supply of qualified workers to hire.

Calendar of Events...

1999

- November 17-18 **COOK COLLEGE, OFFICE OF CONTINUING PROFESSIONAL EDUCATION**
Small Engine Repair
Contact: Kurt Martens, 732-932-8451
- November 18 **AEC ANNUAL MEETING AND SEMINAR**
732-563-9252 (See Pages 6 and 7)
- December 6 **GCSAA SEMINAR: Maximizing Job Satisfaction**
NJTA Expo '99
Trump Taj Mahal Casino / Resort
Atlantic City, NJ
800-472-7878
- December 7 **GCSAA ETONIC ½ DAY SEMINAR: Bringing Out The Best In The People You Manage**
NJTA Expo '99
Trump Taj Mahal Casino / Resort
Atlantic City, NJ
800-472-7878
- December 7, 8, 9 **NJTA EXPO '99: THE COUNTDOWN BEGINS**
Trump Taj Mahal Casino / Resort
Atlantic City, NJ
856-853-5973 or 732-821-7134

2000

- February 9 - 10 **NJNLA'S NJ TRADE SHOW & EDUCATIONAL SESSIONS**
Somerset, NJ
- February 23 **NEW JERSEY LANDSCAPE 2000**
Meadowlands Exposition Center
Secaucus, NJ
Sponsored by:
NJ Landscape Contractors Association
Contact: Skip Powers, 201-664-6310
- May 15 **RUTGERS TURFGRASS RESEARCH 5TH ANNUAL GOLF CLASSIC**



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Calendar of Events...

2000

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Rutgers, The State University of New Jersey
Office of Continuing Professional Education
Rutgers Cooperative Extension

Contact: 732-932-9271

January 3 - 14	<i>Professional Landscape and Grounds Management School</i>	January 27 - February 24	<i>Irrigation Systems: Designing, Installing and Cost Estimating</i>
January 5 - 6	<i>Landscape Lighting: A Practical Approach</i>	February 1 - 2	<i>Integrated Pest Management</i>
January 7 - February 4	<i>Urban Forestry: Make Your Town a Tree City USA</i>	February 8 - 9	<i>Integrated Pest Management</i>
January 7 - March 17	<i>Basics of Plant Materials for Landscape Use</i>	February 15	<i>Applied Topics in PGM: Successfully Identifying and Effectively Managing Turf and Landscape Weeds</i>
January 7 - March 17	<i>Basics of Landscape Design</i>	February 16	<i>Water Gardens: Designing and Maintaining Ponds in the Landscape</i>
January 8 - February 26	<i>Designer Plant Materials Series</i> – Bulbs: How, When and Where To Plant Them – Winter & Spring Perennials – Summer Perennials – Mixed Borders: Woody & Herbaceous – Vines: Annuals & Perennials – Small Trees & Shrubs for Screening and Accent – Feature Plants and Property Placement – Ornamental Grasses and Bamboos	February 26	<i>Successful Lawn Care Management</i>
January 11 - 12	<i>Practice Landscape Marketing: Making Money with IPM</i>	February 28 - 29	<i>Applied Topics in PGM: Better Landscapes Through Better Soils</i>
January 12 - 26	<i>Professional Parks Maintenance</i>	February 28 - 29	<i>Landscape Construction: Building Practical and Innovative Solutions for Your Customers</i>
January 17 - February 4	<i>Golf Turf Management: A Millennium Offering - A Three Week Preparatory Short Course</i>	March 1	<i>Concrete Pavers: Creative Applications and Efficient Installation Methods</i>
January 20	<i>Applied Topics in PGM: The Successful Identification and Control of Turfgrass Diseases</i>	March 9	<i>Designing and Installing Concrete Block and Timber Retaining Walls</i>
January 25 - 26	<i>Integrated Pest Management</i>	March 13	<i>Pruning Landscape Ornamentals for Beneficial Effects</i>
		March 14 - 15	<i>Beyond the Basics of Landscape Construction</i>
		March 15	<i>Applied Topics in PGM: Successful Insect Identification and Control for Ornamental Plants</i>
		March 16	<i>Hazardous Tree Identification</i>
		March 17	<i>Large Tree Pruning and Rigging</i>
		April 25	<i>Roadside and Right-of-Way Vegetation Management</i>

1923	1943	1963	1983
1924	1944	1964	1984
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1926	1946	1966	1986
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1941	1961	1981	
1942	1962	1982	

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www.sportech.com/rutgers



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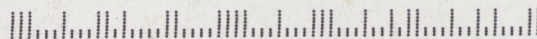
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