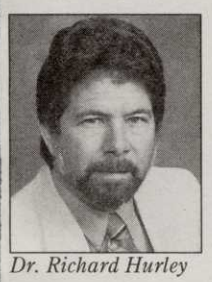
BRIEFS

N.J. TURF ASSN. HONORS HURLEY

ATLANTIC CITY, N.J. — The New Jersey Turfgrass Association presented Dr. Richard Hurley the 1999 NJTA Hall of Fame Award during the New Jersey Turf Expo general session here in December. The award is given to a person in recognition of a continuing lifetime commitment of dedication, service and achievements contributing to the advancement of the turf industry in the state. The business director for AgriBioTech, Inc.'s Professional Turf Unit, is a past president of the NJTA and has been involved in breeding projects with Rutgers University, the University of Rhode Island and Texas A&M.



Dr. Richard Hurley

N.Y. TURF ASSN. CITES VILLANI

SYRACUSE, N.Y. — The New York State Turfgrass Association presented its Citation of Merit Award to Dr. Michael Villani of Cornell University during the organization's Turf and Grounds Expo here. Dr. Villani has served the turf industry in New York since 1984, providing leadership in scarab grub research, insect management and environmentally sound practices for pest management. He has collaborated on two important entomology references, The ESA Handbook on Turfgrass Insect Pests and Turfgrass Insects of the United States and Canada.

WILSHIRE NAMED TO FLA. BOARD

LAKELAND, Fla. — Roy Wilshire, superintendent of Grasslands Golf & Country Club Course at Oakbridge here, has been named to the board of directors of the Florida Turfgrass Association (FTA). Wilshire, who took over responsibility for golf course planning, stewardship and maintenance in 1993 at Grasslands G&CC, has more than 18 years experience in golf course stewardship and maintenance.

NYSTA ELECTS OFFICERS

SYRACUSE, N.Y. — The New York State Turfgrass Association (NYSTA) has elected Joseph M. Hahn as president of a new board for the Year 2000. The superintendent at Country Club of Rochester, Hahn succeeded Anthony Peca Jr. of Batavia Turf at the annual meeting. He is joined by Vice President John Rizza of Turf Partners, Inc., and Secretary/Treasurer Steve Griffen, owner of Saratoga Sod Farm.

Bug off!

Beyond pesticides: Mosquito control goes high-tech

By ANDREW OVERBECK

When it comes to controlling mosquitoes and other biting insects, common tools such as pesticides and electric zappers may soon become a thing of the past. Thanks to cooperative research between the U.S. Department of Agriculture and two New England-based biotech companies, the latest mosquito abatement technology is now available.

American Biophysics, based in East Greenwich, R.I., launched the Mosquito Magnet in September 1998 and BioSensory of Willimantic, Conn., will release its Dragonfly model this month.

While the science behind the two products is complicated, the concept is simple. Both use carbon dioxide and an octenol lure to mimic the respiration of mammals and attract mosquitoes to the trap where they are killed and collected. However, the two machines use different luring and killing techniques and have different sources of CO2.

American Biophysics manufactures mosquito abatement equipment for scientists and entomologists who collect live insects for study. The company's professional line of equipment uses dry ice or pure CO2, two items that present some difficulties in mass production.

"In order to expand the technology and the market, we had to develop a device that used a readily available source of inexpensive fuel," said Karen Salvatore, sales director for American Biophysics. "We invented a catalytic converter that

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The Mosquito Magnet, which is about the size of a barbecue grill, converts propane to CO2 to attract and trap biting insects.

Some myths debunked concerning blue-rye mixes

By DR. ERIC K. NELSON

Combining Kentucky bluegrass and perennial ryegrass can provide a versatile, high-performance turfgrass for golf course tees, fairways and roughs in cool-season grass areas, proving to be a quick-establishing, persistent, resilient and versatile playing surface.

Relative size of Kentucky bluegrass and perennial ryegrass after six weeks.

This statement is more true now than ever with recent releases of several new low-mow tolerant Kentucky bluegrasses. Kentucky bluegrass and perennial ryegrass have complementary characteristics, where the features and benefits of one can overcome the potential disadvantages of the other.

The key to taking advantage of both species in turf is to get them established in a balanced stand. There are many conflicting theories concerning the proper way to uniformly establish these species together. Some of the techniques are based upon research, experience and good agronomics. Others are based on hypotheses and conjecture.

However, there is more than one proper way to get the job done. Factors including species ratio in the seed mixture, seeding rate, seedling management, establishment timing and the immediate influence of Mother Nature on plant survival can all affect the results.

My general recommendation for taking advantage of features and benefits of both species in a balanced stand is to sow a mixture consisting of 80 percent (by

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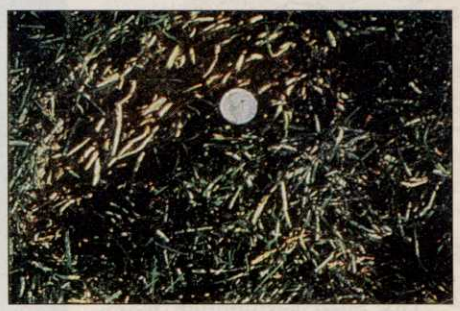

New low-mow Kentucky bluegrass plus perennial ryegrass excel on tees, fairways and roughs.

GOLF AND THE ENVIRONMENT

AI develops Environmental Audit

By JEAN MACKAY

Talk to golf course superintendents and you discover that most consider themselves stewards of the environment. After all, they work outdoors amidst the natural beauty of water, grass, trees and wildlife. But how can superintendents and course managers be sure they're not just touting environmental stewardship, while in actual practice, hitting a double bogey? How do they know whether management practices are really on par with widely accepted standards for environmental performance?

Now, an effective new tool is available to help superintendents and club managers do just that. Audubon International has developed an Environmental Performance Audit to help superintendents, club managers and others rate their environmental performance.

The Environmental Performance Audit is a self-assessment or evaluation that uses environmental performance indicators, or best management practices, to measure their work. The audit is a simple, inexpensive means to help superintendents and club managers evaluate current management practices that safeguard

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Barber forms Blue Ridge

By MARK LESLIE

GREENVILLE, S.C. — He was a golf course superintendent, then a college professor and researcher, then an executive with two course management companies, at one time overseeing 44 courses in 17 states. Now Dr. Joel F. Barber has formed Blue Ridge Golf "to pro

Dr. Joel Barber

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Mastering the mix

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weight) Kentucky bluegrass (two to four varieties) and 20 percent perennial ryegrass (one to two varieties) at 125 pounds per acre (3 pounds per 1,000 square feet, 15g/square meter). The justification for the recommendation is supported by research results and field experiences.

JUSTIFICATION

At 125 pounds of seed mixture per acre, the bluegrass component is sown at 100 pounds per acre which approximates optimum seeding rates for Kentucky bluegrass identified by J.H. Madison (1966). Meanwhile, the perennial ryegrass rate of 25 pounds per acre will provide for early erosion control and stability of the young stand.

The species ratio by bulk weight in the mixture, where Kentucky bluegrass may appear to dominate, is necessary to permit the more desirable Kentucky bluegrass to establish successfully among the perennial ryegrass seedlings. The reason that so little ryegrass is necessary is because of the difference between inherent characteristics of perennial ryegrass and Kentucky bluegrass including: number of seeds per pound, germination energy, field survival and seedling competitive ability.

THE SEED COUNT PARADOX

The number of seeds per pound of perennial ryegrass and Kentucky bluegrass are quite different. Most perennial ryegrass varieties have approximately 250,000 seeds per pound. Most elite Kentucky bluegrass varieties on the market may average about 1.5 million seeds per pound.

Some seed companies are quick to point out the seed count disparity when they make their recommendations for an 85-percent (bulk weight) perennial ryegrass and 15-percent Kentucky bluegrass seed mixture that will provide 50 percent of each species by seed count.

The false assumption when formulating 50/50 seed count mixtures is: A seed is a seed and they will all develop into a plant to give you a 50/50 species stand.

Unfortunately, the assumption is not true because of the great difference in other more important species characteristics. As a result, these 50/50 seed-count mixes usually end up as all perennial ryegrass with none of the benefits of Kentucky bluegrass.

GERMINATION ENERGY

Kentucky bluegrass seed is not created equal to perennial rye seed, even though their germination percentage on the label is usually similar. First, perennial ryegrass germinates within four to 10 days from first irrigation. Kentucky bluegrass seed typically germinates in 10 to 21 days.

These germination energy differences are reflected in the standard test used to determine germination percentage for labeling purposes. The test for perennial ryegrass runs for 14 days, while the test for Kentucky bluegrass allows for a full 28 days. Since perennial rye gets the jump on Kentucky bluegrass in seedbed germination energy, the ryegrass may already start to dominate.

SEEDLING VIGOR

Next, after germination of both species, there is a differential rate of seedling development that favors perennial ryegrass. Perennial ryegrass will produce new tillers (shoots) and leaves rapidly and at an increasing rate, while Kentucky bluegrass does not tiller or grow as fast. Jacklin Seeds' research director, Dr. Doug Brede, documented in his 1982 Ph.D. dissertation that individual perennial rye seedlings may develop seven to eight new tillers, while Kentucky bluegrass seedlings produce an average of only one to two new tillers after six weeks of establishment. Therefore, the difference in tillering capacity alone may quickly make up for the difference in seeds per pound between perennial ryegrass and Kentucky bluegrass.

SEEDLING SURVIVAL

As Kentucky bluegrass does not germinate nor develop rapidly, there is an increased risk of

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This article first appeared in JacklinGolf's On the Green newsletter. A graduate of the University of Rhode Island and former director of turfgrass research at Northrup King, Dr. Eric K. Nelson is senior scientist/turfgrass breeder at The Scotts Co. in Gervais, Ore. He wrote this article while senior technical agronomist for JacklinGolf.

Mastering the mix

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loss in the field from environmental stress, attack by pests or competition from other plants. Field survival of Kentucky bluegrass seedlings was evaluated 40 years ago in unpublished research by Dr. H.B. Musser at Penn State (1957). He found that only about 30 to 35 percent of all Kentucky bluegrass seeds sown survive to produce plants. In 1982, Brede found similar results with 45 percent of Kentucky bluegrass seeds producing plants, while he found seedling survival of perennial ryegrass was approximately 75 to 80 percent.

There are a number of reasons for the low field survival of Kentucky bluegrass compared to perennial rye. The greatest impact is related to the seedling vigor of the species. Regardless, more bluegrass is required to make up for lower seedling survival.

EARLY FOR ADDED SUCCESS

As with all new turf establishment, proper seedbed preparation and fertilization are critical for a healthy start. However, timely irrigation of the seed bed is important for getting a balanced stand of the two species. Often, the tendency is to cut back on seedling irrigation once the perennial ryegrass has sprouted. However, keep in mind that Kentucky bluegrass still requires consistent moisture to germinate and establish as well.

Close mowing within the first three weeks of ryegrass emergence is another trick identified in Brede's research that can help ensure Kentucky bluegrass establishment among perennial ryegrass seedlings.

This timely mowing at 1/2- to 5/8-inch will effectively shock only the ryegrass and open the leaf canopy a little longer for the smaller Kentucky bluegrass plants to establish. Higher rates of perennial rye are possible using this judicious mowing technique.

CASE STUDIES

The Latah Short Course in Spokane, Wash., seeded tees and fairways on Sept. 15, 1997, with a 90-percent Kentucky bluegrass, 10-percent perennial ryegrass mixture at 125 pounds per acre. The course opened to rave reviews on June 6, 1998. The half bluegrass is still going strong.

Don Tolson, superintendent at Stock Farm Golf Course in Hamilton, Mont., used a 90/10, blue/rye mixture at 125 pounds per acre.

After two weeks of establishment on tees, it looked like the ryegrass was too thin. But, after two more weeks, the perennial ryegrass was beginning to dominate. Tolson used the close mowing program to effectively set the ryegrass back. The turfgrass stand is now well balanced, with a strong Kentucky bluegrass component.

VISUALIZING THE RESULTS

Taking the concepts of seed count, germination energy, seedling vigor and seedling survival into consideration, sowing an 80-percent Kentucky bluegrass and 20-percent perennial rye mixture at a seeding rate of 125 pounds per acre will provide 25 pounds per acre of perennial ryegrass (6.25 million seeds/acre assuming 250,000 seeds per pound) resulting in about one established rye seedling every square inch.

But, remember that each ryegrass plant is going to rapidly tiller and produce new leaves that radiate out and begin to cover the spaces between plants. Within eight to 10 weeks, leaves of one ryegrass plant will be touching the surrounding ryegrass plants in the turf and shading the soil surface. However, about this time, the Kentucky bluegrass should begin producing rhizomes when it reaches the three-tiller stage. Once the rhizomes begin to form, the entire turf stand should be well on its way to maturity and improved stress tolerance.

Following the recent advent of Kentucky varieties tolerant to closer mowing, Kentucky bluegrass and perennial ryegrass mixtures are a preferred choice for golf course fairways, roughs and tees in all traditional cool-season grass areas.

Using the proper species ratio, seeding rate and maintenance during establishment, Kentucky bluegrass and perennial ryegrass mixtures will rapidly produce a dense and traffic-tolerant turf with the diverse benefits of both species. The mixture can provide long-term advantages for superintendents.

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