



The big unstated issue

by Christopher Sann

UNSTATED BUT, NEVERTHELESS, quite clear in “What do we mean by ‘patch disease’?” (see page 8 boxed article)—and virtually every article in this publication—is a fundamental issue that needs airing. Who determines which questions are researched and which ones are left unanswered? In other words, the issue is whose perspective is more decisive in today’s turfgrass industry:

- **PRODUCT END USERS**, including both professional turfgrass managers and their customers and people who care for their own lawns.
- **“PURE” ACADEMIC RESEARCHERS**, whose primary goal is to expand the boundaries of biological knowledge.
- **PRODUCT MANUFACTURERS** and the researchers whom they directly employ or at least fund
- **THE LEGISLATORS AND REGULATORS** who promulgate and enforce everything from health and safety related rules to the rules governing advertising and claims about product efficacy and labeling.
- **AND, FINALLY, THE GENERAL PUBLIC**, many of whom may not even have a lawn, but who, nonetheless, do have a say in the regulatory process. The general public—even the inactive portion of it—also plays a variety of significant roles in the turfgrass market.

First of all, I am not trying to begin another acrimonious them versus us debate. Quite the contrary. The future of the turf grass industry depends on how well the give and take between all of these different perspectives is managed.

Currently, the perspective of the manufacturer-sponsored researcher virtually dominates today’s turfgrass industry. There are several reasons why this is so. The relatively young age of this industry—combined with the fact that the industry has little or no formal educational structure—has left the manufacturer/researcher as the dominant sources of “hard” information. This, in turn, has led to a system where most of the information that is available is generated at the behest of the manufacturing sector and is predominantly product oriented.

The industry’s regulators have had a modifying effect, but not enough of one to change the basic dynamics of the system or its dominance by product manufacturers.

Only a very small portion of available research moneys actually go to “pure” research. Unfortunately, this leaves a situation where a relatively few individuals, companies, and organizations exercise quite a bit of control over the genera-

REGULATORY WATCH

Feds crackdown on “haphazardous” waste reporting

THE E.P.A. AND SEVERAL STATES have begun identifying, citing, and fining hazardous waste generators, who have failed to comply with RCRA regulatory reporting requirements. Fines have totaled more than \$20 million to date, and in some cases the agency has brought criminal, as well as civil, prosecutions against offending companies.

New regulations cover storm water run-off

THE E.P.A. IS IN THE PROCESS of implementing new regulations on storm water discharge from commercial sites. The regulations are designed to control the “non-point” discharge of pollution into storm water systems. Under these regulations, some fertilizer and pesticide manufacturers now come under the revised Clean Water Act. Two groups in the turf industry may come under the regulations:

- **FIRMS ENGAGED PRIMARILY IN MIXING** fertilizer materials
- **FIRMS THAT PRIMARILY FORMULATE** and prepare pesticides.

For additional information, interested companies should contact their nearest E.P.A. office or call the E.P.A. Storm Water Hotline at 1-703-821-4616.

Well water survey continues

THE E.P.A. RELEASED the second phase of its National Survey of Pesticides in Drinking Water Wells. The results support the conclusions that were reached in phase one of the study: pesticides and nitrogen residues found in drinking water do not pose a serious health hazard.

The residues found in phase one were lower than established limits and the number of pesticides found was relatively low. With the exception of atrazine, a warm-season turf herbicide, no residues of turf-applied pesticides were found. Atrazine is extensively used in agriculture. ■

tion of information. The profit motive is an effective force only when it is coupled with a recognition of market needs. Advertising muddies the situation, because its persuasive power can create, distort, and even destroy the perception of real needs. For that reason information that is primarily motivated by the goal of selling products has never been a leader—rather it has been, and will always be, a follower.

Frankly, despite these limitations, the profit motive of generating information and effective products has helped this industry mature out of its infancy. This maturation is an ongoing process that probably would not have occurred without the input and dominant perspective of the manufacturer/researcher.

However, most of the easily garnered information has

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The state of turfgrass research

by Dr. Eric B. Nelson

THE STATE OF TURFGRASS RESEARCH has seen a spectacular evolution as demands to meet the needs of an ever-changing industry have become more acute. In just the past five to ten years, dramatic changes in government regulations, public opinions, and philosophies about turfgrass management have propelled this evolution to warp speeds.

In the past, turfgrass research efforts were limited largely to larger manufacturers of turf-related products, who had the resources to support research efforts ultimately aimed at promoting their own particular products. Independently generated biology-based research was an area of exploration left mainly to the curiosities of a handful of university faculty, who saw turfgrass biology merely as an interesting sideline to their primary research program. As a result, a solid body of information on the biology and ecology of turfgrass ecosystems has not developed.

A principle factor limiting the generation of biology-based information on turfgrasses has been, and continues to be, that few scientists across the country have positions in universities that allow them to devote their full-time efforts to turfgrass research. Turfgrass agronomists are perhaps the only exception to this situation. They generally have full-time responsibilities for turfgrass research extension and in teaching. When one looks at the turfgrass sub-disciplines, such as entomology, pathology, and weed science, there are probably only four or five people nationwide, in each sub-discipline, with positions that allow them to devote their full-time efforts to turfgrass research. As a result, the generation of biology-based information for the turfgrass industry has come slowly and only in bits and pieces.

One only has to look at research efforts with other commodities to realize the state that turfgrass is in. For example, at some universities, there may be as many as 10–15 faculty across a campus devoted to both basic and applied aspects of wheat or corn research. There is substantial incentive to develop research programs in these areas, because they are food crops that occupy considerable acreage nationwide. Research funding for commodities such as these can be considerable. Compare those figures with the 0–6 faculty at any given university, who maintain only part-time responsibilities for turfgrass research. It is not surprising, therefore, that the information needed for turfgrass managers to make sound biological decisions is lacking.

Over the past 10 to 15 years, turfgrass associations in many states have become more organized and have developed granting programs or foundations to support turfgrass

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research in their respective states. In these situations, the resources that, in fact, are held in the hands of the beneficiaries of that research, (i.e., the lawn care operator, the golf course superintendent, the landscaper, etc.) can now go to work to generate biologically specific information for the betterment of the industry as a whole—instead of for the betterment of specific products or product uses.

During the past decade, there have been considerable advances in turfgrass biology in the following areas:

- TURFGRASS NUTRITION
- PATHOGEN BIOLOGY AND ECOLOGY
- INSECT BEHAVIOR AND CONTROL
- SOIL SCIENCE
- WEED MANAGEMENT
- AND INTEGRATED PEST MANAGEMENT.

Advances in all of these areas have dramatically changed the ways in which turfgrasses are managed. These advances have occurred as a result of key groups within the turfgrass industry being more outspoken about the importance of turfgrasses to our environment and our society and about the need to understand biological processes in turfgrass ecosystems for most effective, sustainable, economical, and environmentally sound turfgrass management. Those advances would not have been possible without the resources provided by various turfgrass associations, and both federal and state funding agencies, as well as the commitment from turfgrass scientists across the United States, who, for the most part, are young, enthusiastic, and full of new and innovative ideas and management approaches for the turfgrass industry.

Research results have been traditionally delivered to the beneficiaries of this information through various channels—such as field days, workshops, conferences, newsletters, fact sheets, bulletins, etc. However, we need to expend much more effort on getting the proper information to the proper audiences. We have designed *Turf Grass Trends* to facilitate this transfer of information—so that the latest and most significant biologically-based information can be relayed to the end-user—but obviously one newsletter is not going to solve the whole problem. In effect, closing this biological information gap parallels the effort by manufacturers to shorten the gap between their research and development and the marketing of new products. In both cases, the idea is to not waste time and opportunity. ■

been collected. The work that remains to be done in these established areas of knowledge is mostly fine tuning. What remains to be learned about the biology of the turfgrass ecosystem will come at a much dearer price and the profit motive does not do this kind of work particularly well at all—because it tends to stop at “good enough.” As Dr. Nelson implies in his editorial, what is good enough for a sales manager may not be good enough for the biology-oriented “pure” researcher. It is also not good enough for end users, struggling with all the complexities out in the field.

The turfgrass industry needs to gradually shift the emphasis away from product-oriented information towards the real world needs of turfgrass managers and other end users. Their need for biologically specific, rather than product specific, information should become the driving force of the industry. My goal in starting this newsletter is to contribute—however humbly—to this trend. Everyone would benefit from it:

- RESEARCHERS WOULD RECEIVE THE SUPPORT they need in order to spend more time and effort to independently answer biology-based information needs.
- MANUFACTURERS WOULD BE ABLE to take that information and, where appropriate, develop new products or techniques that put the information to work.
- REGULATORS WOULD BE ABLE TO USE the information to develop better, more appropriate rules and regulations.
- AND THE PUBLIC COULD CONCENTRATE on weightier matters that cry out for its attention—confident that the management of the huge amount of land devoted to turf is being handled effectively, efficiently, and in an environmentally sound fashion. Hysteria and misinformation would have much less impact than they unfortunately do have at the present moment.

There are a series of internally and externally generated “philosophical” questions, with which the turfgrass industry is now wrestling, such as are we devoting enough, or too much, of our limited resources to the management of these non-crop plants.

For the most part, these questions have been left unanswered due to a lack biologically specific information. If—or let’s be optimistic and say when—this information begins to flow, in a more consistent manner, many but not all of these questions will resolve themselves. Some questions will still remain for which there are no clear-cut answers. Then we, as members of an evolving society, as well as an evolving industry, will be better equipped to face the vagaries of nature and the uncertain opportunities of the future. ■

ASK THE EXPERT

HAVE A QUESTION on any aspect of turf management? Send it to: Ask the Expert, Turf Grass Trends, 2070 Naamans Rd., Suite 110, Wilmington DE 19810-2644 or fax it to (302) 475-8450. If we can't answer your question, we will put it to the best available expert on the subject.

ON THE HORIZON

Killer proteins identified

ENGLISH RESEARCHERS have recently shown that a new group of naturally occurring toxic plant proteins can be effective in controlling sucking insects. The toxic, plant-produced proteins may have potential as pesticides, or they might be introduced into bio-engineered plants.

Dry encapsulation benefits workers and plants

MONSANTO HAS INTRODUCED a third micro-encapsulated product, a dry herbicide in a microscopic polymer shell, for the agricultural market. By varying the size of these water-applied shells, this technology offers improved worker safety, possible reduced application stress effects, increased resistance to leaching, and time-release characteristics not found in existing traditional liquid-applied formulations. In the future, this technology may lead to advances in liquid and granularly applied pesticides for the turf industry.

Biological controls are tricky

BIOLOGICAL PEST CONTROL, using biological predators to control pest infestations, has been the subject of increasing interest, particularly in agriculture, but there are serious limiting factors to their use on turf becoming widespread:

- THE TIMING OF CURATIVE APPLICATIONS can be difficult, particularly if the bio-control agents need to be grown to order. By the time the controls are applied, major damage could be done, or the pest may no longer be present or vulnerable.
- PREVENTIVE APPLICATIONS WORK BETTER, but, given the limited life spans of some bio-control agents, timing may be a problem.
- QUALITY CONTROL IS A MAJOR PROBLEM. Both production methods and transportation conditions can have dramatic effects on the efficacy of the control.

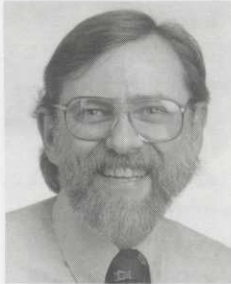
Interest in biological controls will continue, as will research on overcoming the problems associated with them, but turf managers should not expect dramatic advances in the immediate future.

Are drift control agents coming to turf?

DRIFT CONTROL AGENTS are materials designed to help applicators control the drifting of pesticides to non-target locations. Added to sprays, small amounts of these chemicals have been shown to reduce drift deposits on off-target locations by 50% to 80%. They were also shown to increase the amount of pesticide reaching the targeted area by 33%. Their proper use may allow for reduced application rates. Drift control agents are not yet available to the turf industry, but 15 such agents are in use for agricultural applications. ■

A worthy challenge

by Russ McKinney



AT FIRST GLANCE, caring for lawns is not a complex business. After all, for thousands of kids, mowing their neighbors' lawns is a more common first venture than the proverbial lemonade stand. All they need is Dad's lawnmower, a can of gas, and a little initiative.

From such humble beginnings, lawn care has grown into a multi-billion dollar industry. It employs tens of thousands of professional turf managers and independent lawn care business operators. The entry level requirements for the frontline sector of the field are still relatively low. Many people enter the field without the benefit of a long period of specialized pre-employment training. Once in the field, the on-going educational requirements for certification are minimal.

But there is a lot to learn. Lawn care-givers must choose from:

- A WIDE SELECTION OF MACHINERY
- DIFFERENT VARIETIES OF GRASS
- VARIOUS METHODS OF PLANTING GRASS
- DIFFERENT WAYS OF HANDLING various kinds of soil conditions
- AND A HOST OF FERTILIZERS AND DISEASE and pest treatments designed to deal with a formidable array of turf diseases and plant pests.

In addition, turf managers must understand

- A DAUNTING AMOUNT OF TECHNICAL INFORMATION provided by manufacturers and academic researchers, and they must meet or comply with
- A GROWING LIST OF ENVIRONMENTAL REGULATIONS and standards.

For lawn care operators to succeed as businesses, they also must meet

- THE DEMANDS AND CONCERNS OF THEIR CUSTOMERS
- THE CHALLENGES OF THE COMPETITION for those customers
- AND A WHOLE OTHER WORLD of organizational and recordkeeping requirements related to "simply" being in business, paying taxes, and having employees.

The difficulties presented by this list of variables is compounded by the fact that all of them are more or less constantly changing.

How will *Turf Grass Trends* help?

Our aim is to provide a single independent source of reliable, usable information on the full range of topics involved in this field. We will cover specific topics in detail, but,

as our name suggests, we will help our readers keep an eye on the general direction of changes. We also will seek to distinguish between verified facts and "mere" opinions—including our own. In short, *Turf Grass Trends* will help frontline lawn care decision-makers to educate themselves, so they can make their own, more informed decisions.

While many publications contain more advertising than actual editorial content, from cover to cover, *Turf Grass Trends* will be nothing but news, information, commentaries, and discussions. We will not be distracted by the need to sell advertising, and we will not be compromised by the ever present temptations of the publication and advertiser relationship.

We also aim to help our readers develop their own independent judgment about the enormous amount of information which is, in fact, put out by businesses with an obvious interest in promoting particular products and approaches. We will devote space to the perspectives of businesses involved in the lawn care industry, but the views expressed will be clearly labeled.

This does not mean that we will seek controversy for its own sake. It means that we will not hesitate to cover a subject, or to express our view on a subject, because it might be controversial. Like all industries, turf management deals with a variety of unsettled questions. Opposing opinions are to be expected.

While our primary audience will be lawn care operators and turf managers, we believe that *Turf Grass Trends* will help manufacturers and suppliers, academic researchers, and government regulators as well. In these fast-paced times, everyone has difficulty keeping up with new developments. *Turf Grass Trends* will provide a common forum for these different segments of the industry.

Who will produce *Turf Grass Trends*?

To provide the required depth and breadth of coverage, *Turf Grass Trends* will be produced by a team whose qualifications cover the whole range of technicalities and topics:

- CHRISTOPHER SANN is a successful lawn care operator with 18 years of experience where it counts—out in the field. In 1990 he began sharing his expertise as a columnist for Lawn Care Industry magazine.
- DR. ERIC B. NELSON is Assistant Professor of Plant Pathology at Cornell University. He is one of the most respected academic researchers working on expanding the scientific understanding that underpins progress in the field.
- RUSS MCKINNEY is an award-winning business writer and illustrator, who has published hundreds of articles and illustrations. He understands the business and regulatory environment that lawn care shares with other fields, and he knows how to translate complex information into plain language.
- OTHER PROFESSIONALS—turf managers and lawn care business operators, academic researchers, and representatives of businesses and government agencies involved in the field—will contribute in various ways:

by serving as contacts for quoting in articles and by serving as guest experts and commentators.

- OUR READERS also will have several ways of contributing: suggesting topics, submitting their own comments and questions to experts on specific subjects, providing tips on practices that have worked for them, and participating in the discussion of issues and writing letters to the editor.

In today's world, becoming better informed is essential to doing a better job—and to staying in business. *Turf Grass Trends* will improve the flow of information that is as vital to greener, healthier lawns as using the right kinds of grass, the right fertilizer, and the right disease and pest controls. By improving the flow of information, *Turf Grass Trends* will help promote a greener, healthier lawncare industry. ■

LETTERS TO THE EDITOR

Readers who wish to comment on any aspect of the articles, news items, or commentaries published in *Turf Grass Trends*, or on any issues or concerns raised by them, should do so by writing to:

TURF GRASS TRENDS
2070 Naaman's Rd., Suite 110
Wilmington, DE 19810-2644

Please include a return address. Where appropriate, and as space allows, we will respond to the letters we publish. We reserve the right to edit all letters. All published letters become the property of *Turf Grass Trends*.

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