

Turfgrass management in 2004

Products and services

by Christopher Sann

TAKE A BLANK piece of paper and a pencil and list the areas of turfgrass management that will change in the next ten years. The list you produce will have any number of entries, but those entries will probably fit into one of three basic categories:

- 1) Applications, products and services,
- 2) Business, regulatory and environmental issues,
- 3) Basic turfgrass research.

Here I will focus on the first category: applications, products and services and I will examine the future of new products, new equipment, and changing turf management techniques.



New Products

I predict that the next ten years will see a diminishing number of new or unique chemical controls making their debut on the turf market. The tightening economics of the turf industry and more importantly agriculture, from which about 95% of all turfgrass control products originate, will limit manufacturers' potential for making a profit. The economics of agriculture make the amount of money and time that they must invest to bring a new product to market increasingly prohibitive.

For a period of time, products that are already in the pipe line will continue to become available, but the streamlining of corporate structures that has been going on over the past three years, along with the associated reductions of spending on research and development will begin to show in five to seven years as a reduction in the number of new pest control chemicals coming to market. The new chemical products that do appear will probably be smaller niche products; products that dramatically improve efficacy and cost, or new labeling for existing agricultural products that have not been available in the turf market.

"Me, too" products or reformulations of existing products on new carriers or in different packaging will increase as smaller formulators try to grab market share enjoyed by the larger producers. "Me, too" products, or the licensed reformulation of brand name products by smaller repackagers, will proliferate because they offer the original manufacturers the chance to sell additional product without the high cost of research and development. They will be able to make a profit marketing their

reformulated products in smaller market areas that have been prohibitive to the manufacturer.

The same forces that will restrict the introduction of new chemical products will cause a dramatic increase in the number of biologically-based control products as the traditional chemical control manufacturers look for areas to make higher profits. Biological controls, both bio-active and bio-based, will cost the manufacturers only a fraction of the amount required to develop a new product. With the new EPA streamlined registration policy for biologicals, it should only take one-quarter to one-third the time to get through the regulatory process. No doubt, these reduced costs will not be fully seen in the retail prices of biologicals but their pricing should be more in line with the pricing of competitive commodity chemical controls like 2,4-D and Diazinon.

New Equipment

New equipment introductions will continue, particularly in the area where the new machines solve problems for smaller unserved niche markets and in areas where the new equipment offers a substantial advantage over its existing competitive equipment.

But, because of the high cost of production equipment and the loss of market share to international manufacturers, the number of new "copy cat" equipment introductions will probably be smaller than in recent history. The number of computer controls and solar-powered combinations with existing equipment will start to rise and should be very popular by 2004.

The major area for change in equipment will be in the type and availability of small engines as engine manufacturers begin to meet new anti-pollution and anti-noise guidelines. The number and variety of high-polluting, smaller, two-cycle engines will be reduced. Some engine manufacturers have already decided to replace their two-cycle engines with less polluting small four-cycle engines, and the cost of meeting these new standards will likely result in several of the smaller manufacturers going out of business or merging with larger companies.

Computers will become far more common in the office and new communication devices, like personal digital assistants and other portable computers will be showing up in the field. Of all the equipment, computers and communication devices will have the greatest effect on turf management practices. As these devices become more commonly used, new software will be designed that will greatly increase the turfgrass managers effectiveness.

So-called expert software will help the turf managers to make management decisions, meet regulatory record-keep-

-continued on page 11

bench on-line by computer and delivers just the parts needed for that job within one hour.

The maintenance man or pipefitter at the refinery who works on the plant fixtures downloads all the information that he will need into his laptop computer before he leaves the garage to replace a valve or put in a replacement gizmo. That computer tells him where that old part is, what tools he will need to remove it, how to take it out, and whether he will need a helper. It will let him know whether the fire and safety personnel should be at the site, and when he should expect to return from the job.

The modern tanker truck that is used to deliver product from the refineries will not even start if the computer in the cab of the truck does not have the correct information from the 30 to 40 sensors placed on the rig to check the braking system, the tires, and the axles. In addition, the driver will have to have the right product code to be able to start the engine.

A new diesel engine designed for these big rigs has just been introduced that actuates the valves on the engines by computer. It completely eliminates the valve train system that has been standard on internal combustion engines for the last 90 years.

A bumpy road to full computerization

The petroleum refinery industry has responded to the pressures of federal, state and local regulators, the dramatic increases in liability costs and the cost pressures of the market place. It has looked at every operation within their complex business structure and asked the question: how could a computer help us here?

The turfgrass industry must take the same approach. It must examine every dusty corner, every half used bottle of pesticide or bag of fertilizer, and every lost employee hour. Hours waiting for a piece of equipment to be repaired, dollars lost in scheduling problems or lost inventory and say: can a computer help me solve these problems?

Computerizing will not come easily. There's a revolution, not an evolution in small, hand-held computers and the coming wireless communications network that could link field computers to the computers in the office. Much of the customized software that the industry will need to solve its various problems does not exist yet.

The computer hardware business is different from any business we have been used to. It is not like the present equipment supplier, the present mower manufacturer, or bag goods supplier. The computer hardware suppliers will not come to you and offer you turn key solutions to your problems. You must go to them. You must let them know what your problems are and together develop the software and hardware configurations that will answer your questions. Computers are dumb tools and turf manager will have to invest considerable time and energy to make those dumb tools turf smart.

Change, our constant companion

The world of computers is constantly changing, with innovations often coming so fast that it is easy to become overwhelmed. But the computer is the only way we have to deal with the tremendous pressures to come. The information requirements and the data storage requirements of the near future will make the last 10 years look like a walk in the park.

Feeling overwhelmed is not a new feeling for turfgrass managers. We operate in an ever-evolving business climate. When we make our living in what is considered to be the most complicated of the plant sciences, often requiring intimate knowledge of as many as ten scientific disciplines, change is our constant companion. If we can see the problems that are coming in the near future, anticipate the solutions, and have confidence in our abilities to adapt to change, we will survive.

Management in 2004 continued from page 8

ing requirements and keep databases of collected site-specific information. This will lead to predictive modeling software that anticipates problems before they develop. These same databases could be used to develop "what if" scenarios, such as exist with today's spreadsheet programs.

Services

The number and types of services offered to the turfgrass manager will increase dramatically. As the amount of new knowledge and the increase in the learning curve continues, managers already strapped for time will increasingly hire consultants to help them manage their facilities.

Services like soil testers and fertility specialists, application specialists, computer programmers and advisors, I.P.M. scouts, risk assessment analysts, specialized outside mechanical consultants, water and drainage experts, and a host of others offering specialized services, will become more frequent visitors to larger facilities. Already, soil testing and fertility specialists and application specialists are increasingly being called upon for advice or work by facilities managers.

Field Management Techniques

Actual field management techniques will be substantially affected by all of the above changes as well as by new, more accurate, scientific information, as more money is spent on basic turfgrass research. These forces will all combine to change the number, frequency and spectrum of activities on turf sites and probably reduce the number of persons directly employed by these facilities.