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“I can control weeds three times longer just by adding Surflan® to my Roundup.”





Seed researchers continue to seek turf with the growth, color, and tolerance characteristics needed in the various climates and conditions throughout North America and the world.



Colored markers tell the researcher that a particular plant demonstrated one or more desirable traits.

and is adapted to wider areas than ever before. In addition, buyer sophistication is leading the industry into more specialized turf."

An example, says Edminster, is tall fescue, which has become an ideal turf in the transition zone because of its favorable shade, drought and temperature resistance. "Seven to ten years ago, there was no market for tall fescue. Today, more than 100 million pounds are produced annually," says Edminster.

"Turf-type tall fescues are going to a lot of places where they really had to fight to have a nice bluegrass lawn, like Virginia, New Jersey and Kentucky," says International Seeds plant breeder Steve Witten. "People in the Northeast had bluegrass lawns and everyone said, 'That's what a lawn is supposed to look like.' So everyone had to fight, fight, fight to have a nice bluegrass lawn. Now, with the improved turf-type tall fescues, you can have a nice-looking lawn without nearly as much hassle."

High tech seed

International Seeds has employed a computer at its Halsey facility to document each variety's performance under a variety of tests. Test results and breeding information are stored

in a databank for easy access.

"The results of our work will come out in the next five to ten years," says Witten. "They may be good or they may be bad, but we plan on surprising quite a few people."

Dr. Bill Meyer, President for Research of Turf-Seed, also feels tall fescue and ryegrass development has been impressive.

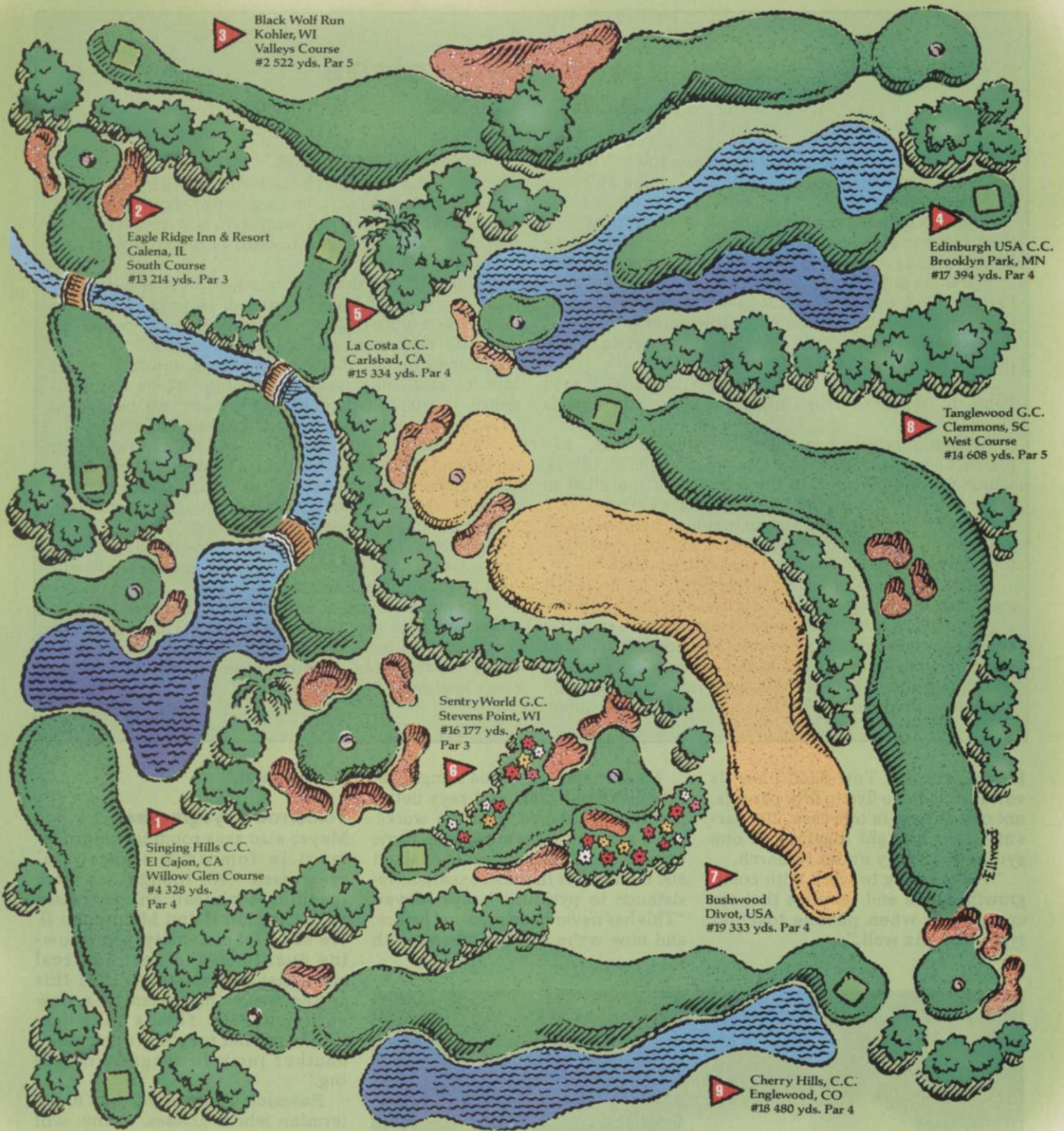
"I think an amazing development in the past five years has been the continual improvement we've seen in ryegrass and tall fescue," says Meyer. "I think we're going to continue to see these two species and we're getting closer to putting fine fescue in that category too."

Turf-Seed's research farm stretches over 105 acres in Hubbard that hold more than 10,000 turf plots. Meyer is taking advantage of every one, it would seem, because he's seeking a broad genetic base in the tall fescues and perennial ryegrasses under development.

"A lot of breeding work that has been done in the last few years has been based on inbreeding and trying to limit the number of parents. We're trying to broaden the number of parents we use, hoping that the turf will be more adaptable and have higher tolerances."



Dr. Doug Brede, research director, welcomes visitors to the Jacklin Seed Company's Idaho ranch.



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Researcher examines heat stress

One of today's leaders in bentgrass research is Virginia Lehman, who works with Dr. Milton Engelke at Texas A&M University.

The Texas bentgrass research program is in its fifth year. Lehman says it seeks to produce "new, seeded-type bentgrasses as opposed to older, vegetative types."

Speaking at the Loft's Seed Company 1990 Field Day, Lehman said the great challenge to herself and other bentgrass researchers has been the natural fact that bentgrass does best in mild climates, not the torrid conditions of many Southern golf courses.

"In Europe in July, the mean temperature is 60°," says Lehman, "whereas in the United States, the July mean is 70-75°."

"When grown at non-optimum temperatures," explains Lehman, "there is a drastic decline in tillers, which is then reflected in the inability of the plant to recover from damage: the roots no longer elongate, and you'll see the current roots begin to slough off. And when you lose the root system in bentgrass, you lose the ability to take in water, and the plant cannot cool itself."

The final result of bentgrass decline—or, the result most visible to the golfer—is a decline in putting quality.

"But the superintendent sees disease and weed invasion," Lehman says, "and more pesticides are then required to compensate for the biological deficiencies."

Lehman's quest is for cultivars genetically adapted to the environment, to reduce the dependency on management.

Concerned supers chip in

The Texas A & M research has been funded by the USGA and Bentgrass Research, Inc., a group of about 20 country clubs in the southern U.S. who want and need bentgrass that can stand up to the ravages of summer heat and drought.

"The ability of the plant to take up water is directly related to its actual heat tolerance," says Lehman, who also seeks a more traffic and salinity tolerant species, all the while retaining a quality putting surface.

Lehman recalls that five years ago, information on heat tolerant bentgrasses was lacking. "There was testimony, but from a scientific viewpoint, we needed to separate heat tolerance from dehydration tolerance."

"We have selected plants for their ability to maintain turgor under drought stress," says Lehman. "We've been able to increase the amount of water held in tissue by 10 percent; we're going to improve our drought resistance to ultimately improve our heat resistance."

Lehman's research continues, and she insists that testing is essential to determine plant adaptability; eyewitness testimony is not enough.

Lehman encourages independent research on golf course practice greens and nurseries. "Those are ideal places for turf managers to establish their own evaluations," says Lehman, "rather than rely solely on someone else's testimony."

—Terry McIver □

Meyer said that Turf-Seed likes its varieties to have five to fifty parents, not one or two. In one case, 200 parents were brought together in one synthetic variety under research.

"We're trying to work with color, growth habits and textures that are compatible when putting together types that mix well."

Meyer notes tall fescue's improved establishment rates and says better pythium resistance is in the works. "Last summer we were able to come up with about two clones out of about 500 tall fescues that had excellent resistance to pythium," says Meyer. "This has never been reported before, and now we're making crosses with

that material."

Tomorrow's ryegrasses

Meyer also sees room for improvement in tomorrow's perennial ryegrasses. "We thought we were reaching a plateau on ryegrasses with Citation II and Manhattan II. We had a lot of density, good mowing quality in the heat and real good disease resistance. But this spring we're impressed by a new variety (GH89). This is an indication to us that maybe we can make another jump in ryegrass breeding."

Research is also under way to determine which grasses, if any, will maintain their yield levels without field burning. Field burning opponents are gathering signatures for two initiative petitions that would eliminate or drastically reduce the practice.

Lacking initiative?

"We (the seed industry) dodged a bullet last year when the legislature passed the field burning phase-out bill," says Jerry Pepin of Pickseed West in Corvallis, Ore. "The next battle is the initiative. If that gets on the ballot we're going to have to have a big advertising campaign to try to defeat it."



Fred Ledebauer of Turf Merchants has been researching the "dwarfness" of tall fescues to minimize clipping yields of turf on home lawns.

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Field burning opponents are gathering signatures to place one of two initiatives on the November ballot. One would ban field burning, propane flaming and stack burning by Jan. 1, 1991. A second, sponsored by Oregon Gov. Neil Goldschmidt, would rapidly phase down field burning, propane flaming and ban stack burning.

"Without burning, the fine fescues and bluegrasses would suffer," says Pepin. "They're so thatchy that you'd really have to use some heavy duty mechanical work to clean up a fine fescue field. You really need to burn it."

Jacklin Seed researchers, under the guidance of Dr. Doug Brede, are keeping their eyes on 42 varieties of Kentucky bluegrass planted in 1987. They're evaluating the effect burning, herbicide and insecticide application have on seed yields. The company, located in Post Falls, Ida., moved its research facilities to an Idaho ranch.

Turf trials added

Jacklin has also added four new turf trials. In addition to its five-year-old national Kentucky bluegrass trial and perennial ryegrass trial, the company has added national fine fescue and



Steve Witten (l) and Stephen Johnson incorporated a computer databank to track turf for International Seeds.

bermudagrass trials.

Jacklin's Virginia Kanikeberg is studying the feasibility of seed priming, a process that allows seed to germinate more quickly. Priming involves exposing the seed to a solution that allows them to imbibe just enough water to initiate the early stages of germination.

"In places where the growing season is short, grass seeds that germinate faster can take better advantage of the weather and produce more seed heads," says Kanikeberg.

In Tangent, Ore., Fred Ledebor, researcher at Turf Merchants, asked field day attendants this now-familiar question: "What are we going to do with the clippings?"

Ledebor has been comparing the clippings weight of tall fescue to determine growth rates and see which varieties produce the least amount of clippings.

"There are two phenomena that could be called 'dwarf,' says Ledebor. "One is the total plant height at maturity. The other is in the turf, that is, reduced foliage elongation and reduced clippings. With the latter, the practice of mowing on a weekly schedule will change." **LM**

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Circle No. 124 on Reader Inquiry Card

WHAT DO THEY WANT?

'What do customers want?' is a question top green industry companies ask themselves every day. The most successful ones answer it.

by Rudd McGary, Ph.D.

Henry Ford was once asked if he would have been a millionaire had he not invented the automobile production system. He replied, "Yes. I would have found out what the customers wanted and gotten it to them at a fair price." That's why Ford was a millionaire.

But some obvious questions can be asked about the solution above, brilliant as it is. The big question is: "What do consumers want?"

The green industry offers certain services to the public, but there is more to this industry than treating lawns, mowing grass, working on trees and designing outdoor space.

Fair service is key

Basically, all green industry companies offer nearly identical services at nearly the same prices. Granted, some companies are better than others in their technical ability to perform the services, and some companies are more professional. But there is still a very fine line between the successful, growing company and the company that either stays the same size or disappears after having been open for only a few years.

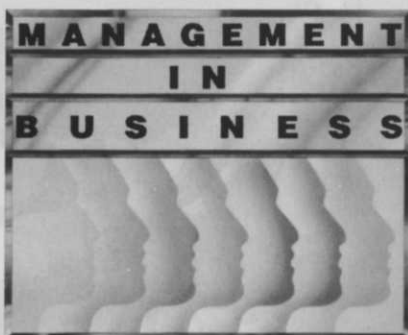
The key to a company's success or failure goes back to Ford's idea: giving the customer what he or she wants at a fair price. (Remember throughout this column that we are talking about "wants," not "needs." The difference between the two is significant, particularly in industries where some of the services are cosmetic.)

When customers purchase "wants," they are buying because of a desire. If the service is one which is absolutely necessary, such as telephone service, the consumer is buying because of "need."

Beyond price

The reason this is important is because the consumer in the green industry can make choices about how he/she wants to be serviced—and one of the choices is to not take a service at all. This is very different from those services which are "need" based.

Given the fact that the good com-



panies providing consumer services are very close in the way the services are performed, the consumer then selects service providers through other factors. Then, job performance becomes an expected part of the service to be bought.

For more than a decade, research has been done on why people buy ser-

What does the customer want? A knowledgeable, competent professional.

vices in the green industry. The reasons, which have changed dramatically in the past five years, are tied very closely to the concept of want vs. need.

For example, when consumers consider buying a service, they generally set up a group of expectations. The expectations may not necessarily be based on the real possibilities of the service, but that doesn't matter. If the consumer has a set of expectations, that's what the consumer wants to get.

Results tell all

On the other side are the results: the final outcome after the service has been performed. I have been suggesting for some time that the difference between the consumers' expectations and the results is what causes problems in the service industries. There is, however, another part to this.

It's not only the results that determine customer satisfaction, it's the way in which the results come about.

For example, you and your crew have been out working on a property and have done fairly extensive landscaping work on it. You're not quite finished with the work, and the customer calls your office to ask about something. The person in the office is having a bad day and is obnoxious to the caller. No matter how good the property looks, the consumer isn't going to be satisfied with the way in which the results come about. This becomes important in industries where there are more and more good companies working.

Stand above the rest

The work can be done by a lot of people; it's the way in which the overall results are accomplished that determines whether or not you have a satisfied customer. Since much green industry work depends on referral for its marketing, it's a good idea to have satisfied customers or the company will have severe problems trying to grow or even survive.

What does the customer want in 1990? Let's go through what we have learned over the last decade about consumer expectations in the green industry.

1. Professionalism. The single dominant factor when consumers choose service providers is the way the company presents itself to the consumer. The word most often used by consumers to describe what is expected is "professionalism." There are several parts to this, including appearance of the workforce, appearance of equipment and vehicles and, very importantly, the manner in which the first interview/sales presentation is handled.

Office staff cooperativeness and how they handle the customer is also very important. Companies using answering machines are not thought of as professional and therefore lose some business. Companies where the office staff isn't polite or helpful are also considered out of the "professional" category. (In general, this is a

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Mean Turfgrass Quality Ratings of Tall Fescue Cultivars At Four Shade Locations in the United States

Quality Ratings 1-9		9 = Ideal Turf	
Name	Mean	Name	Mean
Arid	6.0	Jaguar	4.9
Finelawn I	5.6	Bonanza	4.8
Trident	5.4	Olympic	4.8
Pacer	5.3	Maverick	4.7
Mustang	5.3	Willamette	4.6
Apache	5.2	Rebel	4.5
Tempo	5.1	Clemfine	4.4
KY-31	5.0	Brookston	4.4
Falcon	5.0	Johnstone	4.0
Hounddog	5.0	Kenhy	3.4
Adventure	4.9		

Data from USDA National Turfgrass Evaluation Program

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Brown Patch Ratings of Tall Fescue Cultivars

Brown Patch Ratings 1-9		9 = No Disease	
Name	Mean	Name	Mean
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Adventure	6.2	Finelawn 5GL	5.5
Jaguar	6.1	KY-31	5.5
Rebel	6.0	Mustang	5.5
Pacer	5.9	Bonanza	5.5
Maverick	5.8	Trident	5.5
Falcon	5.8	Johnstone	5.5
Clemfine	5.7	Finelawn I	5.3
Apache	5.6	Kenhy	5.0
Tempo	5.6	Willamette	4.9
Olympic	5.6	Brookston	4.3
Hounddog	5.6		

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feeling as much as a concrete category, but without the feeling of a professional company, the company isn't going to sell much.)

2. Knowledge. This is particularly important in the beginning stages of a customer/service company relationship. The customers want to be confident that service providers have a strong understanding of how to complete the job. In addition, it is important to the consumers that the service providers are able to problem solve quickly.

One other consistent comment

from consumers is that they don't want to be presented with too much technical talk. While consumers want information, they don't want a complete doctorate in green industry technology. The complaint is that some personnel seem to overwhelm consumers with technical information.

3. Communication. This very vague word translates into two different areas of consumer concern. The first is the way the customer is treated on the phone—politeness is a necessity. No matter how well the

company can provide the service, people who aren't polite on the phone kill sales opportunities.

The second area deals with problem solving. Customers who give strong referrals mention the companies' abilities to solve problems. They say that the people identify the problem, tell them how they are going to deal with it, do what needs to be done, and then call afterward to make sure the customer is satisfied. Sound like a lot to make a customer happy? How big do you want your company to be?

Looking at factors

There are a lot of other factors. Certainly price is important, but if the other three things listed above are not available, the price doesn't matter at all. People buying on low price alone are a small group, and generally not a group that you want to deal with anyhow.

What does the customer want? The customer wants a service company, not a company that thinks that results alone are all that matter.

What does the customer want? To be treated as if they were important to the company. (They are: they pay all the bills.)

What does the customer want? The customer wants a professional, competent, knowledgeable company.

What does the customer want? The customer wants results and more. How those results come about are as important as the results themselves.

Remember Henry Ford? This is what the customers want. And they're out there waiting to make you a millionaire. **LM**



Rudd McGary, Ph.D., is a senior consultant with All-Green Management Associates in Columbus, Ohio.

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