

# The USGA/GCSAA Research Program at the Halfway Point

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LIKE WATER running over stone, turfgrass research sounds wonderful, but real impressions are only made with passing time. This year marks the halfway point in the original USGA/GCSAA Turfgrass Research Program, which began in 1983. The objective: to develop minimal maintenance turfgrasses for golf, turfgrasses that will require 50 percent less water and 50 percent lower maintenance costs while providing superior playing conditions. More than superficial scratches, specific cuts into new turfgrass knowledge are now discernible and significant.

Take the Turfgrass Research Library at Michigan State University as one example. In the short period of four years, Dr. Richard Chapin, director of MSU Libraries, and Peter O. Cookingham, project manager, have developed an unequalled computer-based Turfgrass Informational Center. Over 12,000 reference sources are now in the data base, and more are added every day. The priceless O. J. Noer collection of books has been added. Within a few weeks, a comprehensive brochure will be available, providing potential users with information on how to access the Turfgrass Information File (TGIF) via computer (software soon to be available), telephone, or through the mail. Indeed, requests may even now be made simply by calling Peter Cookingham, at 517-353-7209. The day is coming when this system may serve as a golf course superintendent's personal office information filing and printout system. Current data that will meet requirements for right-to-know laws, current detailed data on weed, disease, and insect controls could someday be at your fingertips. The possibility of having the latest maintenance equipment and parts list with descriptions and specifications would be invaluable. The potential usefulness of the research library may well be greater for the practitioner and superintendent than for the researcher.

The USGA Turfgrass Research Committee believes the research program is on track. It is especially pleased to call attention to the release of two new turf-

grasses in the past year. One is a seeded bermudagrass superior to common bermuda, the work of Dr. Arden Balten-sperger, of New Mexico State University. The other, in fact several others, are improved buffalograsses, from the labors of Dr. Terrance Riordan, at the University of Nebraska. There is a potential market demand for these seeded grasses in the millions of pounds. They are now under commercial foundation planting increases in Arizona, and limited quantities of seed may be available by next year. If this seems agonizingly slow, please remember, Nature only works on one seed harvest a year.

At the halfway mark, dozens of other new and promising grasses are entering the long pipeline of test and development. At least seven *Poa annua* selections are to be distributed nationwide and evaluated this year. Creeping bentgrasses that withstand high temperatures, resistance to Pythium, wear, thatch development, and having good commercial seed productivity are in the breeding hopper. Zoysiagrasses with unbelievable ability to recover rapidly from divoting, scarring, and injury represent a major breakthrough. There is even the possibility of having a zoysia variety someday comparable to bentgrass for putting greens. And can you imagine a zoysia-grass successfully growing in salt levels half of that found in sea water? It is true.

By 1991, we expect several native grasses to be ready for commercial release. Breeding cold tolerance into seeded bermudagrass now seems assured, but genetically combining cold tolerance with fine-leaf texture will take another three or four years, we are told. In New Zealand, over 1,200 promising drought-tolerant Colonial bentgrasses are being evaluated, and the best ones will be shipped to the United States for turf quality and seed trials this year. From 13 foreign countries (Canada, China, England, Germany, Iran, Japan, Korea, New Zealand, Philippines, South Africa, Sweden, Taiwan, Turkey) and the U.S.A. itself, huge quantities of new turfgrass germplasm has been collected

and is in use in these breeding efforts. There has never been anything like it.

With so many new, improved grasses on the horizon, how does one go about protecting the effort and investment that has gone into their development? The Turfgrass Research Committee has a concern with this question, and is taking steps to protect against pirating. Genetic fingerprinting is now possible, and will provide a means of positive identification of new cultivars. The Plant Variety Protection Act has been made law, and it will be enforced. Biotechnology will play a major role in this development.

There is another study in Plant Stress Mechanisms. It is providing plant breeders with data on root systems, canopy and leaf evapotranspiration characteristics, stomatal density and resistance, root hair morphology, leaf density, orientation, extension, and width, among other data. Cultural practice studies dealing with soil moisture levels, soil cultivation, and the interaction of seven management factors are only the forerunners of an expanding program as new grasses begin to be released by plant breeders. Studies in salt and drought tolerance, brown patch, and Pythium resistance, monoclonal antibodies, and spring dead spot controls add to the overall advance being made in turfgrass science.

Last July, 10 university researchers receiving major USGA/GCSAA grants gathered in Salt Lake City to exhibit and discuss their individual projects. The two-day meeting was a huge success. Executive Committeemen from the USGA and GCSAA were also in attendance. At its conclusion, the researchers were unanimous in their belief that the exchange was of inestimable value. The money spent on this meeting, they said, will be far more valuable than if placed in an entirely new research project. The scientists were equally supportive of the monitoring visits made annually by members of the Turfgrass Research Committee to each project. In fact, they asked for on-site visits to be longer and



more frequent, because they directly helped move the projects forward.

There is so much more to be told about this unique research program, but you now have at least an indication of its present status. A copy of the 1987 Annual Turfgrass Research Report has been mailed to all USGA Member Clubs and donors to the turfgrass research program. I believe it shows genuine, solid, and substantial turfgrass progress.

The USGA is grateful to all those who have and continue to support this effort. You have made it possible. To try to give proper recognition by naming the thousands of individuals, corporations, clubs, golf organizations, and others who supported the USGA Capital Campaign, which raised funds for turfgrass research, would take too much space for this report and would surely result in omissions of some who sacrificed time and money for the good of the cause. So excuse us for not even trying here, but all the names of donors will be recorded permanently at Golf House, in Far Hills, New Jersey. To all of our true friends of golf and the USGA, we say thank you sincerely for being there when you are really needed. Thank you for helping GOLF KEEP AMERICA BEAUTIFUL.



*(Top left) Dr. Terry Riordan, University of Nebraska, with one of his improved buffalo-grasses now in test trials.*

*(Top right) Seven selections of Poa annua strains developed by Dr. Don White, University of Minnesota, will be field tested throughout the country this summer.*

*(Above) A "monitoring visit" to the Research Library at Michigan State University.*