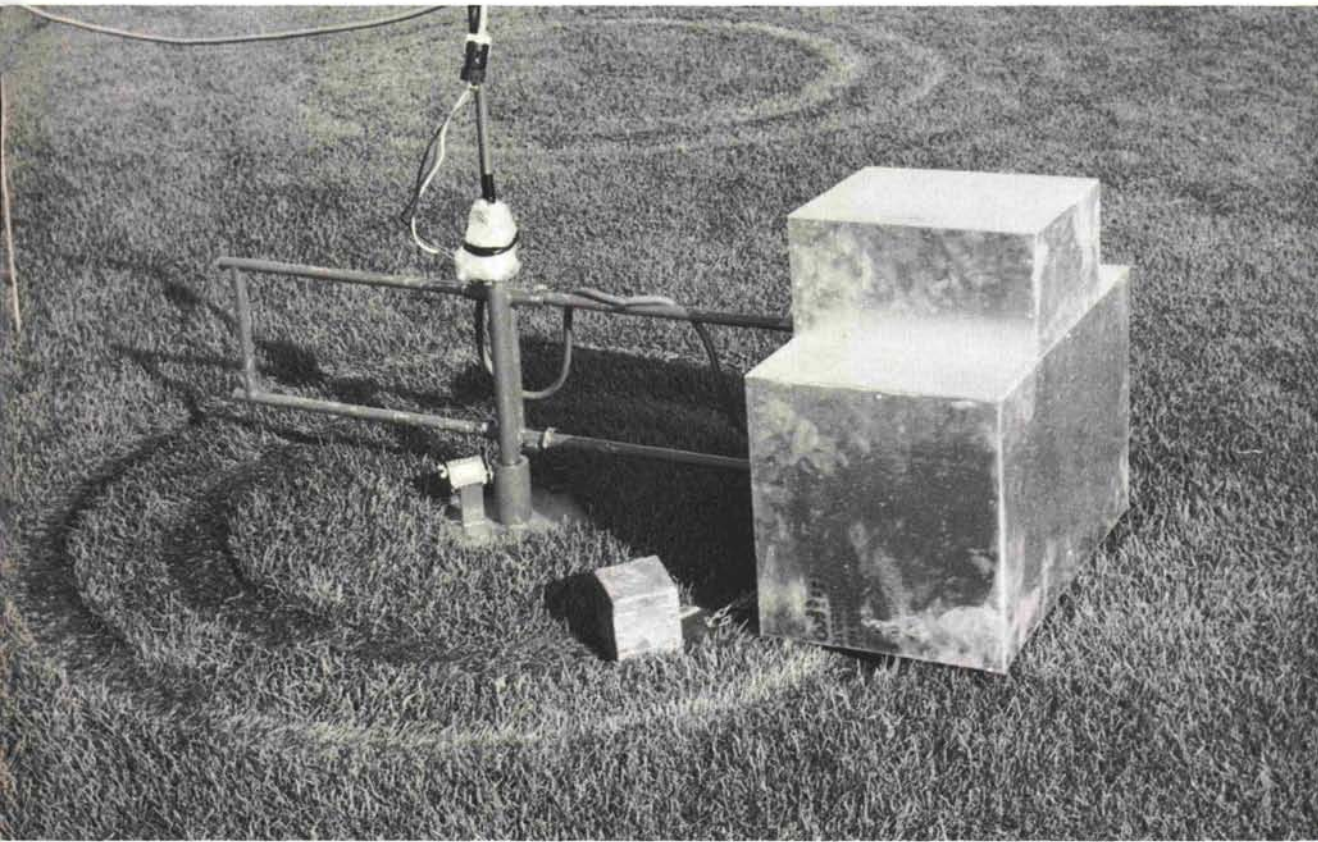


Better Golf Courses Through Research



Turfgrass wear simulator designed for project to study causes and prevention of turfgrass wear. Developed by Dr. James B. Beard, Michigan State University.

by **ALEXANDER M. RADKO**, Eastern Director and National Research Director, USGA Green Section

Research is the systematic search for the truth. Research is a new process, a new technique, a new product derived by scientific study. In short, it is the search for a better life. It follows then that the aim of turfgrass research is to make life better on the golf course for every golfer. This, in a nutshell, is what the program of the Green Section of the United States Golf Association is all about. In November 1920, the Green Section was formed "for the purpose of investigating the problems of grass culture and of distributing to its members the information obtained." That purpose has remained constant to this date. From its inception to the present the USGA has invested nearly \$4 million in the Green Section.

A sizable portion of that sum was directed into research.

Golf became known early as "The Rich Man's Game." This may have been in reference to what was invested but it could have been in reference to what was being wasted. To quote from an early cost report, "It was estimated that golf clubs in the United States annually expended \$25 million in the establishment and upkeep of turf, and there was good evidence to show that nearly half of this money was wasted by the use of foolish methods." Prior to 1920 there was no organized research, no place for clubs to turn to for information. The rate of golf course construction at that time was nothing short of phenomenal. There were some

3,500 courses in play by 1925. Every one of them was crying out for help. As a result, waste was commonplace and costly. The need for one central agency, impartial and authoritative, was sorely evident. Officials of the USGA and the United States Department of Agriculture met, agreed, and the Green Section was born.

From 1920 through 1953 the Green Section in collaboration with the U.S. Department of Agriculture, first at Arlington, Va., and later at Beltsville, Md., inscribed an indelible chapter in golf turfgrass research. Golf course management and maintenance changed from a "hit or miss" program to a highly specialized field of technology. The Bulletin of the Green Section of the USGA was the organ through which golf clubs first received technical aid. Thousands of chemicals were screened and tested for disease, weed, and insect control and a precise rate for each favorable test was determined and announced. Maintenance practices were improved, new techniques were devised, ideas for new machinery were developed and new grasses were discovered and bred. In short, the industry came of age. During World War II when male scientists were called into the service, a woman researcher, Dr. Fanny Fern Davis, was appointed to carry on Green Section work and to no one's surprise she contributed significantly

to the use of 2,4-D in weed control, a force of major impact in fine turfgrass culture ever since. Close association with U.S. Department of Agriculture scientists added immeasurably to quantity, quality and speed of projects developed. The U.S.D.A. facilities and brain power were the best available. The clubs benefited greatly by the Green Section's close association with the eminent agricultural researchers of the day.

The pattern of research quickly resolved the need for decentralization of the Green Section program. It set the stage for the program in existence today. First do the research, then test these results at various regional points throughout the country, discuss results in regional conferences, then report findings in publication. In the 1920s, District Service Bureaus were first established in Cleveland, Philadelphia and in New York. Several were added later to further enhance the program's value. District leaders developed a coordinated program of research and demonstration on golf course turfgrass projects. Promising selections of new grasses were tested; new products in disease, insect and weed control were demonstrated; fertilizer and lime tests were conducted; new machinery was demonstrated, and numerous beneficial maintenance and manage-

A Kentucky bluegrass selection being subjected to putting green height of cut. Kentucky bluegrasses that thrive under close cut would be a great asset for tee and fairway use.



ment practices were developed. Regretfully, the district program ended with the market crash of 1929 and once more staff activities returned to one central Green Section office at Arlington.

Not until 1953 did the Green Section embark upon its present program of service to Member Clubs. It now plays a strong role in funding the decentralized research work at many stations throughout the country. In 1923 the Green Section allocated the grand sum of \$100 to the University of Florida for research. Today approximately \$50,000 annually is directed to universities and experiment stations through the U.S.G.A. Green Section Research and Education Fund, Inc.

Funds are derived from USGA dues, individual contributions, golf associations, golf course superintendents associations, sponsors of major golf tournaments, and from the National Golf Fund, the PGA's National Golf Fund, which is derived from National Golf Day, has contributed generously to research and scholarship programs over the years. Benefit to golf is such that we urge every Member Club to support National Golf Day annually. The U.S.G.A. Green Section Research and Education Fund, Inc. finances scientific projects that are golf course management oriented. It deals with research in the following ways:

(1) Needs are recognized by Green Section staff members as they go from course to course and receive the advice of superintendents. Research projects are framed to meet such practical needs.

(2) Funds are obtained for state agricultural experiment stations and colleges for specific studies. (Dividends are still being received from investigations formerly conducted cooperatively by scientists of the Green Section and the United States Department of Agriculture.)

(3) Research results are evaluated under playing conditions by the Green Section.

(4) Courses are warned against products whose worth is not proven; considerable money has thereby been saved.

(5) The total research program is planned and coordinated on a national scale. Funds can thus be placed most efficiently. Duplication of efforts can be avoided. Results of all research become available readily to all sections. The Green Section's National Research Director keeps in touch with experiments over the country and is constantly alert to golf's interests in research.

Accomplishments of the Green Section's research program include improvements in every phase of golf course management. These have been documented and reported in THE BULLETIN OF THE GREEN SECTION OF THE UNITED STATES GOLF ASSOCIATION, TURF

CULTURE, TIMELY TURF TOPICS, the "Turf-grass Management" section of THE GOLF JOURNAL and THE GREEN SECTION RECORD. Green Section publications, except for a brief span during the Depression, have a record of continuity since 1921 in the publications listed. Some specific and outstanding accomplishments of the research program for golf include:

(1) The development of the "C" series of creeping bentgrass that find prominent use on putting greens. These include the Arlington, Congressional, Toronto, Cohansey, Washington and many other improved selections.

(2) The development of Merion Kentucky bluegrass.

(3) The development of the Tifton series of bermudagrasses that have greatly improved playing conditions throughout the South.

(4) The development of a sound method of putting green construction and physical soil analysis that has world-wide application. Produced a motion picture in color demonstrating the techniques of this construction method.

(5) Initiated studies and discovered safe materials for control of devastating diseases of putting green grasses. Although discovered in the 1920s, they are still being used today.

(6) The development of Meyer zoysia and several bermudagrasses.

(7) Researched effective controls for the major golf course weeds and insects.

(8) Conducted traffic studies which resulted in the modification of golf spikes and shoes.

(9) Researched nutritional requirements of turfgrasses.

(10) Researched soil compaction and techniques to minimize it.

(11) Published the book TURF MANAGEMENT, first of its kind and a comprehensive book on the maintenance and management of golf course turfgrasses.

(12) Supported fellowships that trained turfgrass students at the graduate level.

(13) Basic study of *Poa annua* designed to provide better understanding of problems associated with its growth.

Problems now being researched:

(1) Bermudagrass improvement through selection, irradiation and breeding.

(2) Kentucky bluegrass improvement for tee and fairway use. Dwarf types for uninterrupted play under the Rules of Golf. Our avowed aim is the elimination of "winter rules."

(3) Bentgrass breeding and selection for greens, tees and fairway improvement.

(4) Techniques to insure better success with renovation of greens, tees and fairways.

(5) Problems related to nutrient and pesti-



Representatives of Texas A & M University and the Green Section examine project collection site. Project designed to test nutrient and pesticide retention in soils.

cide retention in putting greens.

(6) Techniques to simplify management.

(7) Combination warm season-cool season turf for the upper South.

(8) Investigations into the causes and prevention of turfgrass wear.

(9) Continued research into studies of weed, insect and disease control . . . better solutions to present problems and a search to solve new problems as they arise.

The Green Section's research goal has never waived from its original course . . . that of improving conditions for play on golf courses throughout the nation. A number of problems still must be resolved and a number of new ones will arise. Research needs the support of every golf club in the United States. Benefits derived from Green Section research benefit every club. The agency through which the USGA raises funds for worthwhile projects is the U.S.G.A. Green Section Research and Education Fund, Inc.

This is how it functions:

(1) Needs are recognized by Green Section Staff Members as they visit subscribing USGA Members. Turf management problems are dis-

cussed with golf course superintendents and club officials.

(2) Available research funds are then allocated to state agricultural experiment stations and colleges for specific studies on golf course related problems. Studies are performed by trained scientists and researchers expert in the particular area to be studied. The best possible return for every research dollar spent without question is realized from funds granted universities and experiment stations. The framework is there crying out for funds to be put to work for golf. We are the losers if we don't take full advantage of this great opportunity.

(3) The total program is planned and coordinated by the Green Section staff on a national scale. It is the only agency so equipped. Thus funds are placed more efficiently and duplication of effort is avoided. This is an important point. Duplication of effort is research money wasted. Research results then are documented, published and become readily available to everyone interested in golf course maintenance and management.

This, in brief, is the research phase of your USGA Green Section program. Its only aim is a better course and better golf for every golfer.