

Southern California Turf Culture

A Quarterly Publication devoted to the activities of the Experimental Program in Turf Culture of
the College of Agriculture, University of California, Los Angeles 24, California.

JULY. 1951

VOL. 1. NO. 3

THE SOUTHERN CALIFORNIA CONFERENCE ON TURF CULTURE

An unusual array of experts in the field of turf culture was gathered together at the Southern California Conference on Turf Culture on April 30 and May 1, to discuss new technical developments in this rapidly expanding field.

The first session was held on the turf plots at UCLA, giving visitors an opportunity to see the comparative trials of new and standard turf grasses under various cultural treatments. Over 200 persons from various parts of the Southland, including one visitor from Texas, attended the two-day meeting. Those attending were mainly persons concerned with the maintenance of golf courses, bowling greens, sports fields, cemeteries, parks, airfields, and similar turf areas. The meeting was opened with words of welcome from Assistant Dean R.W. Hodgson of the College of Agriculture.

Prominent among the speakers was Prof. H.B. Musser of Pennsylvania State College, who explained the operation of his program, which is one of the oldest and largest turf research programs in the United States. Professor Musser also discussed control of weeds in turf, and the problems of heavy duty turf. He advocated rotational use as a solution for the most severe conditions. He is the author of the new McGraw-Hill book, "Turf Management," which was sponsored by the U.S. Golf Association Green Section.

Dr. F.V. Grau, Director of this organization, described new improved turf grasses which they have developed, including *Zoysia* Z-52, U-3 bermudagrass, and Merion bluegrass, and discussed their use in combinations of warm and cool season grasses. He also discussed new apparatus for the deep mechanical cultivation of turf, an important new technique in turf culture.

Mr. O.J. Noer of the Milorganite Division, Milwaukee Sewerage Commission, showed many colored slides illustrating the fertilization of turf.

Dr. Robert Hagan of the Division of Irrigation on the Davis Campus of the University, discussed the fundamentals of watering of turf grasses, pointing out many common errors and misconceptions. Dr. Hagan is organizing an experimental project on this subject on the Davis Campus of the University, with the collaboration of the U.S. Golf Association Green Section.

(Continued on page 4)

2, 4-D FOR THE CONTROL OF DICHONDRA IN BENTGRASSES

John E. Gallagher
Laboratory Technician
University of California - Los Angeles

Dichondra repens, a low, dark green creeping plant, which forms a dense mat of small leaves, is a pestiferous weed in putting or bowling greens. *Dichondra* presents a fast surface which is an unfair hazard to the golfer or bowler.

In 1945, Brown and Mitchell proved that carbohydrates must be present in order for 2, 4-D to move from the leaves to other parts of the plant. Physiologically mature plants in the flowering stage have an abundance of carbohydrates in the leaf tissue. *Dichondra repens* blooms during the months of March and April. Bentgrass during those same months is in an active state of growth, capable of rapid recovery from any injury or discoloration.

Since April seemed to be the proper time to spray *dichondra* with 2, 4-D, we set up some preliminary experiments during the latter part of the month of February, 1950, to determine the concentration of 2, 4-D which would produce a minimum of discoloration to the bentgrass turf, but at the same time would result in effective weed control.

The plots had been fertilized two weeks prior to the first treatment. Following the suggestion of Dr. A.M.S. Pridham of Cornell University, for 48 hours before and after each spraying the turf was neither cut nor watered. We used Stantox, a liquid preparation containing an amine salt of 2, 4-D in dilutions of 1-1000 and 1-2000, with one gallon of solution covering 200 sq. ft. The material was sprayed on with a 2% gal. brass Hudson sprayer equipped with a flat fan nozzle to create a fine mist spray that would give good coverage and not wash the 2, 4-D into the soil.

The first readings were taken ten days following the original treatment. The readings indicated that the 1-1000 solution was too severe for bentgrass at putting green height of cut. All subsequent sprayings were made at the 1-2000 dilution. Notes taken the week following the third spraying showed a maximum of 0.5% turf discoloration, while dandelion and dog fennel were severely damaged.

(Continued on page 2)

**RESEARCH ADVISORY COMMITTEE
FOR THE
EXPERIMENTAL PROGRAM IN TURF CULTURE**

Mr. Colin C. Simpson, Chairman
Mr. F.W. Roewckarp, Secretary
Department of Recreation and Parks
305 City Hall
Los Angeles 12, California

Mr. William P. Bell
Mr. William Beresford
Mr. Carl Blomfield
Mr. Samuel E. Davis
Mr. Harold A. Davson
Mr. John Dawson
Mr. W. G. Ray
Mr. William Jdnson
Mr. E. B. Marzolf
Mr. Frank Post
Mr. William W Stewart
Mr. J. W. Tollefson
Mr. Charles Wenger
Mr. Verne Wickham

HONORARY MEMBERS:

Dr. Fred V. Grau
Mr. Charles K. Hallowell
Professor H. B. Musser
Mr. O. J. Noer

This publication "Southern California Turf Culture" is sponsored and financed by the Research Advisory Committee. Communications regarding this publication should be sent to the Division of Floriculture and Ornamental Horticulture, University of California, 405 Hilgard Avenue, Los Angeles 24, California.

IMPORTANT BOOK REVISED AND REISSUED

The important reference book on grasses, "Manual of the Grasses of the United States" by the late A. S. Hitchcock, which has long been out of print, has been revised by his assistant, Agnes Chase.

The book is available from the U. S. Superintendent of Documents, U. S. Government Printing Office, Washington, D.C., for three dollars.

This book contains over a thousand pages and has many illustrations. It covers the native and introduced grasses of all types which may be encountered in the U.S.A. It has been, since its first publication, the standard reference book on the subject, and the most important guide to the identification and distribution of grasses of all types.

This second edition will be a welcome addition to the libraries of all serious students of the technical aspects of grasses and turf culture,

**2, 4-D FOR THE CONTROL OF DICHONDRA
IN BENTGRASSES**

(Continued From Page 1)

Using the experience from this experiment, we conducted an actual field trial at the, Bel-Air Country Club. After three treatments at 10-day intervals, following carefully the same procedure that we used in the original trials, the dichondra was successfully removed from two greens. There was very little discoloration of the bent, which, following a top dressing and fertilization, rapidly filled in the area left open by the removal of the dichondra.

During the months of July and August, the Los Angeles Country Club, using a slightly modified program, had excellent success in removing dichondra from their greens. At that time there was greater discoloration of the bentgrass, apparently due to the difference in average day temperatures. The average day temperature at the Bel-Air trial was 65 F., while during the Los Angeles trial, it was 80°F. Annandale and Hillcrest Country Clubs had similar results from spot spraying.

On the basis of data collected last year, the best time to spray bent greens for the removal of dichondra would be the month of April. If any work is to be done we would stress the need of following the procedure outlined here for best results. If there should be any doubt about the material to be used, try out a small test plot in your green nursery.

Since 2, 4-D Formulations come in many different percentages, the following table of dilutions may be helpful:

1 teaspoon = 5 cc
3 teaspoons = 1 tablespoon or 15 cc.
2 tablespoons = 1 ounce

2, 4-D	1-2000 Part Dilution. (CC. to 1 gallon water)	Area To Cover
10	19.40 cc.	200 sq. ft.
20	9.37 cc.	200 sq. ft.
30	6.30 cc.	200 sq. ft.
40	4.80 cc.	200 sq. ft.
50	3.80 cc.	200 sq. ft.
60	2.30 cc.	200 sq. ft.

RECENT GIFTS

Pacific Toro Company -
300 pounds milorganite

GIFTS OF SERVICE:

Hardie Manufacturing Company -
Servicing of equipment.

Pacific Toro Company -
Loan and use of equipment.

THE TURF PLOTS DURING THE PAST YEAR

John E. Gallagher
 Laboratory Technician
 University of California - Los Angeles

Soon after the 1950 spring meeting, a five-man group began to make comparative ratings of the plots of different grasses in our green and fairway.

On April 4, 1951, the 10 readings, taken at 5-week intervals, were averaged. The scoring points are based on a scale of 1 to 10, with 1 being top quality and 10 being very poor. The results are shown in Table I and Table II"

TABLE I
 Rating of Putting Green Turf

Rating	Name	Score
1	Congressional	2.0
2	Arlington-Congressional	2.1
3	Old Orchard	2.4
4	Seaside Bent	2.6
5	Arlington	2.7
6	Old Orchard-Collins	2.8
7	Arlington-Congressional-Collins	2.9
8	Arlington-Congressional-Cohansey	3.4
9	Astoria-Colonial	3.7
10	Collins	3.7
11	Piper Velvet Bent	4.7
12	Los Angeles Country Club	4.9
13	Raritan Velvet	5.3
14	Cohansey	5.6
15	Toronto	5.8
16	Highland	5.9

TABLE II
 Rating of Grasses Maintained At
 Fairway Height

Rating	Name	Score
1	Merion bluegrass	1.7
2	Kentucky bluegrass	2.9
3	Seaside-bent	2.9
4	Highland bent	3.1
5	Seaside, Highland, Astoria	3.2
6	Arlington, Highland, Astoria	3.4
7	Arlington	3.4
8	Alta fescue	3.5
9	Astoria bent	3.5
10	Rainier fescue	3.7
11	Illahee fescue	4.0
12	Chewing's fescue	5.0
13	Raritan Velvet bent	5.2
14	Meadow fescue	5.2
15	Ryegrass (domestic)	8.2

The system of rating does not consider specific individual characteristics, but does give a picture of the year-round performance under Los Angeles conditions. The grass was judged on its appearance the day the ratings were made.

A few comments may be made on the results of the year's ratings. The Congressional bent has been unusually good in performance, it has rated higher than the Arlington, when both are considered alone. On the other hand, a mixture of the two has provided an excellent turf.

From these ratings, the inclusion of Collins bent in a mixture does not add to the quality. The same weaknesses shown by this strain when grown alone may also appear occasionally when grown in the mixture.

The Old Orchard bent continues to perform well, and we are very much interested in its use as a component part of bermuda-bent mixtures. Its vigorous growth habit should allow it to hold its own in the combination. The velvet bent strains have grown well here, but are not to be recommended because of their slow rate of recovery from injury.

Of the fairway lots, Merion bluegrass is still at the head of the list. Seaside and Highland bent both have provided fine turf, the Alta fescue is producing a tough, vigorous sod under a cut.

No zoysia or bermuda was included in these ratings, but both will be rated along with the others, next year.

NEWS ITEMS

The January 26 issue of the Southwest Builder and Contractor carried an article describing the experimental program in turf culture on the Los Angeles Campus of the University of California. The relationship of the Advisory Committee to the work was described, together with some of the more important results of experimental work by several of the divisions involved.

Mr. John E. Gallagher spoke before the members of the California Association of Nurserymen, on "Better Turf for Home Lawns" on May 22, at their annual Refresher Course for nurserymen at California Polytechnic College at San Luis Obispo.

The rapidly expanding golfing magazine, Golf Life, carried an excellent illustrated reprint of the recent turf conference at UCLA in the May issue, together with an article by V. T. Stoutermyer, entitled "New Ideas in Turf Culture." The editor, Miss Aileen Covington, also plans to print articles on turf culture by nationally known authorities. We are pleased to recognize this assistance in furthering the principles of sound turf maintenance among golfers and club officials. The magazine is published at Room 207, 10380 Wilshire Boulevard, Los Angeles 24.

A one-day and evening conference on turf culture will be held in the fall of the present year. The tentative date is Wednesday, November 14.



Looking over the Turf Plots During the Conference
Foreground-left to right: Dr. Fred V. Grau and Prof. H. B. Musser
Rear -left to right: Mr. Colin C. Simpson and Mr. William Beresford



Opening Session of the Conference at the UCLA Turf Plots

THE SOUTHERN CALIFORNIA CONFERENCE ON TURF CULTURE

(Continued From Page 1)

Mr. John E. Gallagher of the Division of Floriculture and Ornamental Horticulture, presented promising results of experimental trials of herbicides for crabgrass and dichondra control. Fertilizer turf plots at UCLA were explained.

These five speakers listed above also conducted a panel discussion on turf culture for a broadcast recording for the Armed Forces Radio, with emphasis on the military aspects of turf.

Additional speakers on turf subjects from the UCLA Campus were Prof. Pierre A. Miller of the Division of Plant Pathology, who discussed turf diseases and their control by fungicides, and Prof. V.T. Stoutemyer, Chairman of the Division of Floriculture and Ornamental Horticulture, who explained the purpose of some of the experimental grass plots. The members of the Research Advisory Committee for the Experimental Program in Turf Culture were introduced by Mr. Colin C. Simpson, chairman of the committee.

Following an evening banquet at the Riviera Country Club, a panel discussion on turf problems, with Dr. Fred V. Grau as leader, proved to be one of the most interesting and educational of all the sessions of the conference.

A panel discussion on trees and turf on the morning session of the second day likewise evoked many questions. This panel was conducted by Mr. Fred W. Roewekamp, City Forester of Los Angeles, Prof. Pierre A. Miller, and Dr. Mildred E. Mathias of the Department of Botany. Dr. Mathias exhibited specimens of trees adapted to Southern California which are desirable in turf areas. Mr. William H. Johnson, president of the National Golf Course Superintendents Association, presided at this meeting.

At the final afternoon session, Mr. John J. McElroy of the Agricultural Extension Service on the Berkeley Campus of the University of California described their methods of operation and the possibility of assistance to those groups concerned with recreational and ornamental turf.

The success of this, the third annual conference devoted to this subject, emphasizes the keen interest in turf culture on the part of many diverse specialized groups, and also illustrates the rapid growth of available information due to experimentation. The practical application of research findings can be expected to result in a vast improvement in turf conditions in Southern California.

TURF CONFERENCE TRANSCRIPTS AVAILABLE

Those attending the recent 1951 Conference on Turf Culture will doubtless want a permanent record of the various talks. A bound set of proceedings, including several photographs, may be obtained for \$2.75 per copy from the Hollywood Convention Reporting Company, Suite 606, 5410

Wilshire Blvd., Los Angeles 36, California.

Those who were unable to attend will also find this book a valuable mine of information on the various aspects of turf growing.