TIMELY TURF TOPICS

Issued By The

UNITED STATES GOLF ASSOCIATION GREEN SECTION

ROOM 307, SOUTH BUILDING
PLANT INDUSTRY STATION
BELTSVILLE, MD.

TIMELY FAIRWAY RENOVATION PROGRAMS PAY DIVIDENDS

FIELD DAYS: Pennsylvania Experiment Station will have its Field Day at State College on September 15 and 16. The Annual G.S.A. Tournament will be held on the same days, with golf in the forenoons and study of plot work in the afternoons. Professor H. B. Musser is in charge. Room assignments will be made through the College. The USGA Green Section will offer a plaque for Low Medal.

Rhode Island Experiment Station has planned Field Days for September 9 and 10. The first day will be devoted largely to golf turf and the second day to lawns, parks, cemeteries and associated turf interests. Doctor J. A. De France is in charge.

COOPERATIVE RESEARCH IN FLORIDA: Agreements have been completed to establish a USGA Green Section research grant at the University of Florida for the purpose of establishing and maintaining a turf garden for the introduction, testing, increase and distribution of superior turf grasses. The garden will be maintained at the Everglades Experiment Station, Belle Glade, Florida, under the direction and supervision of Dr. R. V. Allison, Director, and Dr. Roy A. Bair, Agronomist. Plans were completed through Dr. Harold A. Mowry, Director of the Florida Experiment Stations, Gainesville. Three hundred dollars a year will be made available on this grant until such time as circumstances permit an increase.

COOPERATIVE RESEARCH IN MICHIGAN: The memorandum of agreement has been signed establishing a three-year $4500-research fellowship in Turf Management at the Michigan State College, East Lansing, Michigan. The fellowship is supported jointly by the

Detroit District Golf Association.....	$2250
USGA Green Section.....	1125
Midwest Regional Turf Foundation.....	1125

The work will be under the joint supervision of Dr. James Tyson, Soils Department, and Dr. Carter M. Harrison, Crops Department. The fellow has not been selected. A study of fairway management problems will be the basis of the project selected, integrated through the Green Section with similar work in progress at the Pennsylvania State College.

CHANGES IN GREEN SECTION STAFF: George E. Harrington, Assistant Director, left the Green Section on July 16, 1947, to rejoin the Army Air Forces as a regular Army officer. George returns to the Army as a Lieut. Colonel, which was his rank at the time he was separated from the Service in March, 1946. His first assignment in the Army will be in Headquarters Army Air Forces, Washington, D. C. We will miss George in this work and we wish him all success in his chosen profession.

Marvin H. Ferguson, formerly with the Green Section, and more recently with the Division of Forage Crops and Diseases, Beltsville, rejoins the Green Section staff as Agronomist, effective August 16.

Ian Forbes, Jr., who rejoined the Green Section in November, 1945, as Research Assistant, leaves the Green Section August 15 to take the position with the Division of Forage Crops and Diseases, Beltsville, which was vacated by Marvin Ferguson.

SUGGESTED READING: The Greenkeepers' Reporter, Vol. 15, No. 3, May–June, 1947, p. 13, col. 2.

FAIRWAY RENOVATION WITH WEED CONTROL PRACTICES

M. E. Farnham and Charles K. Hallowell*

Fairway renovation is considered necessary when the plant population of existing turf is unsatisfactory. Such conditions usually require reseeding in addition to a sound maintenance program.

Before reseeding fairways, it is essential to determine correctly the reason why the existing turf is unsatisfactory. After determining the cause, the program to establish a satisfactory turf is developed. The program usually includes the materials, the equipment, and the season, to insure good results.

If turf is poor due to grub injury, before the reseeding program is started, grubs are controlled either with arsenate of lead or with D D T. Wet areas which have poor turf are tile drained. Weedy fairway areas, due to neglect through the war period or other reasons, are analyzed carefully to determine the kind and type of weeds. After knowing the kind of weed, the correct chemical may be selected for treating the weeds before seeding the fairways.

The materials to use include lime (if soil test shows a need), fertilizer, herbicide, and seed. The equipment includes proper distributors for applying lime, fertilizer, chemicals, and seed.

Some sort of tool is necessary to scarify the soil in the preparation of the seed bed. To date a spike-disc and the soil Aerifier are the two that assist in cultivating, loosening the soil, and assisting in establishing the proper seed bed.

Chemicals which have been used in renovating the weeds in fairways prior to or during the renovation procedure are sodium chlorate, sodium arsenite, and 2,4-D.

If the weeds which predominate are of the broad-leaf type, such as plantain and dandelion, 2,4-D is the chemical to use. It is important to apply it well in advance of seeding as there is evidence that seeding immediately following the application of 2,4-D will retard seriously both seed germination and growth of new seedlings.

Heavy coverings of crabgrass may be effectively removed just as seed heads are formed, by applying sodium chlorate. An application of two and-a-half pounds of this material to each 1,000 square feet, applied either in spray or dry form, has checked this undesirable grass on Pennsylvania fairways and enabled the reseeding program to be started in two weeks after the application of the chemical.

Chickweed, crabgrass in the seed head formation stage, and other weeds unaffected by 2,4-D, may be removed by applications of sodium arsenite. Sodium arsenite will assist also in checking clover and *Poa annua* prior to and at the time of reseeding, so that the establishment of new seedings is accomplished successfully in areas where they would otherwise be smothered by clover or *Poa annua*. A most desirable factor in favor of sodium arsenite is that seeding may be done either at the time of application or immediately afterwards. Its effect on the weeds is quicker than that of 2,4-D, and it discolors the desired grasses less than does sodium chlorate.

After controlling the weeds and correcting all possible causes of poor turf, the reseeding program is started. The best time for seeding, and the choice of seed mixtures, are dependent on the locality. *It should be kept in mind that a fairway turf is desired which can be cut closely without injury.* [Italics are ours.]

Following the application of the necessary lime and fertilizer, the seed bed is prepared. Thoroughness is important; in fact, the disking or spiking must be such as would be rated as drastic on any existing good grasses. It is necessary to loosen hard-pan areas in order to allow lime and fertilizer to become mixed with the soil.

The finishing procedure is the preparation of a fine, firm, smooth seed bed. The seed can be covered by the use of a chain harrow or similar equipment.

The establishment and continuance of a sound maintenance program, including optimum fertilizer applications, are essential to develop fully the results of reseeding and to insure the continuance of satisfactory fairway turf.

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* President, Greenkeeping Superintendents Association, and also Superintendent, Philadelphia Country Club; and Philadelphia County Agent, Philadelphia, Pa., respectively.

2,4-D AIDS THE ESTABLISHMENT OF SOUTHERN TURF GRASSES [1]

Glenn W. Burton [2]

Rapidly-growing southern weeds greatly retard the establishment and may cause the complete failure of turf grass plantings in the Southeast. Many of these weeds are of the broadleafed type susceptible to the selective killing of 2,4-D. It was quite logical, therefore, to study the effect of 2,4-D upon the establishment of the grasses planted in the turf plots at Tifton, Georgia, in the spring of 1947. Rates and methods of application were studied on the principal turf grasses used in this area. The results of these studies may be summarized briefly as follows:

1. Dry 70 percent 2,4-D powder mixed with dry Uramon or complete fertilizer and applied with a fertilizer spreader was as effective as were similar rates of liquid 2,4-D acid sprayed on in a water solution.

2. Applications of 2 pounds of 2,4-D acid to the acre (slightly more than the rate recommended by one manufacturer) killed pussley (*Richardia scabra*) but only stunted such broadleafed weeds as pigweed (*Amaranthus* sp.) and coffee-weed (*Cassia* sp.). Twice this rate was required to kill all broadleafed weeds occurring in the turf.

3. 2,4-D applied at a rate of 8 pounds of acid to the acre in an old lawn injured carpet grass turf severely. Centipede grass, Bermuda grass, Dallis grass, and perennial ryegrass growing in the same turf showed little, if any, injury.

4. Southern turf grasses were more susceptible to 2,4-D injury in the seedling stage than when growing in mature sods.

5. When 2,4-D acid was applied at rates of 2 and 4 pounds to the acre the injury to Bermuda grass due to 2,4-D was negligible.

6. 2,4-D was applied at the rate of 8 pounds of the acid to the acre to 100 different strains of Bermuda grass. The leaves of some strains were burned considerably by such applications while others showed no evidence of leaf discoloration, indicating marked differences due to strains.

7. The newly formed stolons on sprigged plots of such grasses as Bermuda grass, St. Augustine grass, centipede grass, and carpet grass failed to root well at the nodes for a month to six weeks after the application of 2,4-D. This resulted in many loose runners which tended to pile up and give the newly-formed turf an unsightly appearance. It also caused a somewhat slower establishment than might have resulted had the stolons been able to put down active roots at each node. This injury was more pronounced at the heavier rates of application but also was observed where 2,4-D was applied at 2 and 4 pounds of acid to the acre. Stolons developed six weeks after the application of 2,4-D seemed to develop normal roots. In spite of this undesirable effect, 2,4-D applications ranging from 4 to 8 pounds of acid to the acre favored the establishment of sprigged plots of Bermuda grass. In these studies the untreated plots were not hand weeded, and the weed competition greatly retarded their spread. This phenomenon needs further study.

8. Applications of 2,4-D at rates up to 8 pounds of acid to the acre did not kill such weedy grasses as crabgrass (*Digitaria* sp.), fingergrass (*Dactyloctenium aegyptium*), and goosegrass (*Eleusine indica*). It did, however, seem to kill many of their roots, greatly reducing the labor required to remove these grasses from the turf by hand weeding.

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[1] Cooperative investigations at Tifton, Georgia, of the Division of Forage Crops and Diseases, U. S. Department of Agriculture, the Georgia Coastal Plain Experiment Station, the U. S. Golf Association Green Section, and a number of southern golf associations.

[2] Geneticist, U. S. Department of Agriculture, Tifton, Georgia.