

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.

JANUARY, 1952

VOL. 2. NO. 1

CONFERENCE ON TURF CULTURE CONTINUES TO GROW

The Fourth Southern California Conference on Turf Culture was highly successful by all standards with previous years. Nearly 300 people attended, and the registration was the largest thus far. The conference was held on November 14, and the morning sessions were held at the experimental turf plots at 300 Veteran Avenue, The Rancho Golf Course Clubhouse on Pico Boulevard in West Los Angeles housed the afternoon and evening sessions.

The wide range of interests represented among those attending was notable, and there was a marked increase in the number of nurserymen, landscape architects and contractors, seedsmen, park superintendents and other specialized groups. The steady growth of the Athletic and Recreational Turf Association was shown by the fact that about 80 persons went on the tour to the practice football field at U.C.L.A. sponsored by this group.

The morning program included discussions of exoeriments on turf diseasesby Prof. Pierre A. Miller of the Division of Plant Pathology and of trials of the new insecticides, aldrin and dieldrin, by Dr. Roland N. Jefferson of the Division of Entomology. Mr. O. J. Noer, Agronomist of the Milwaukee Sewerage Commission, demonstrated methods of tissue testing of grasses as a guide to fertilizer applications,

Mr. John E. Gallagher of the Division of Floriculture and Ornamental Horticulture, who has supervised the turf plots since their inception, discussed chemical crabgrass controls as worked out in the National Coordinated Crabgrass Trials. All of the chemicals tested, including sodium arsenite, potassium cyanate, and phenyl mercuric acetate, were effective, but each has particular values for special situations. One demonstration by Mr. Gallagher which attracted particular attention was the use of methyl bromide, to which a little chloropicrin had been added as a warning agent, for quick eradication of existing turf by fumigation. Re-seeding can be done a day after the termination of the fumigation, and the group was shown a plot of the new Penn State Polycross bentgrass which had been seeded in fumigated putting green turf without any soil preparation whatever. Fumigation has great possibilities for fighting encroachments of bermudagrass on bentgrass greens, and for the eradication of grasses difficult to control by other means.

Mr. Colin C. Simpson, Chairman of the Research Advisory Committee, opened the afternoon session at the Racho Golf Course Clubhouse by introducing

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METHYL BROMIDE FUMIGATION FOR TURF WEED CONTROL

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Methyl bromide fumigation is not new in the field of ornamental horticulture. It has been used in the past as a soil fumigant for the control of soil fungi, nematode, and other soil insects. Its use as a turf weed control material is relatively new, however, and as such, it is now coming into its own as an effective tool of turf management.

Methyl bromide (or MC-2, as it is sold commercially), has many specialized uses in turf weed control. First, because it affords effective control of most weed seeds, and positive control of all vegetative material, MC-2 can be used to provide weed free seed beds for putting greens or turf nurseries. Secondly, it can be used to control local patches of weed grasses that are potential sources of fairway infestation, A third specialized use of MC-2, which has been successful in other parts of the country, is for the recovery of sections of bentgrass putting greens which have been invaded by bermudagrass. Still a fourth, and certainly an important function of MC-2, is its use as a fumigant of top dressing. Many of the weeds which are troublesome in putting greens can be traced back to weed seeds in the top dressing material.

Here at the U.C.L.A. turf plots, when the need arose for a weed free area which could be used for further ecological studies, we decided to use MC-2. The area to be fumigated was a section of our fairway strip, made up of plots of different grasses. Most of these plots had been contaminated with bermudagrass and dichondra. To make our test as informative as possible, we divided the area into three longitudinal strips; one of which was to be rototilled, the second to be renovated, and the third was to be left untilled. This was done to determine the effect of pre-treatment cultivation. We also replicated rates of 1/2, 1 and 2 pounds to 100 square feet, to determine a minimum effective rate.

An outline of our procedure and precautions follows:

I. What is Methyl bromide?

Methyl bromide is an odorless, colorless, highly volatile, poisonous gas, Dowfume MC-2 is methyl bromide with 2% chloropicrin added as a safety factor (the chloropicrin aids in detecting leaks).

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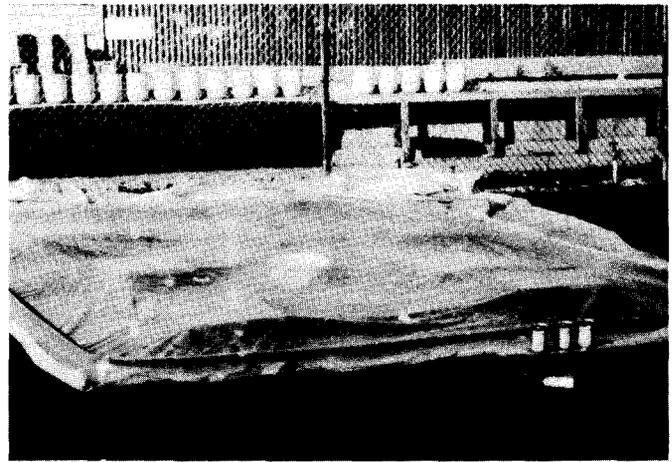
This publication "Southern California Turf Culture" is sponsored and financed by the Research Advisory Committee. Communications regarding this publication should be sent to the Division of Floriculture and Ornamental Horticulture, University of California, 405 Hilgard Avenue, Los Angeles 24, California.

GRASS vs. GROUND COVER

The recent planting of a row of Erythrina trees down the central parkway of San Vicente Boulevard will provide an interesting experiment on the perennial question of the relative cost and merits of grass turf, in comparison with various ground covers. The City of Santa Monica is using a mesembryanthemum, but the portion of the boulevard located in Los Angeles is covered with grass turf.

The local businessmen in West Los Angeles, who seem to have taken the lead in the initiation of this interesting project in city beautification, recommended grass as the cheapest and most satisfactory cover for level areas. Cost comparisons may be possible later and will be interesting.

At the present time we are convinced that the grass presents a finer and more impressive appearance. One other point of superiority in favor of the grass is that papers tend to blow over the area without being trapped by the mat of foliage.



**Plastic Tent Used to Confine Gas
Over Undesired Turf Grass Area**

**METHYL BROMIDE FUMIGATION FOR
TURF WEED CONTROL**

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II. How does methyl bromide act as a weed killer?

Methyl bromide, acting as a soil fumigant, kills all vegetation and most weed seeds with which it comes in contact. K-2 is less effective when soil temperatures in the upper 4 inches are less than 50°F.

III. What equipment is needed for treating turf areas with methyl bromide?

1. A gas proof tarpaulin or paper; flats or some type of frame support which will keep the tarp off the ground. This will form a tent into which the gas can readily diffuse.

2. A flat pan into which the liquid can flow and remain until it volatilizes. (If the liquid is allowed to flow into the ground it will soak in to a small area, and its effect will be localized.)

3. Finally, a small jiffy MC-2 dispenser.

IV. Rates of Application:

1 lb. per 100 sq. ft. has proven effective for control of bermudagrass in undisturbed soil.

V. Procedure:

Space the flats or supports and the pan with the outlet of the dispenser weighted down, all within the area to be treated. Cover everything with the gas proof tarp. If the high point of the tarp is about 10" above the ground, the gas will diffuse more readily. Next, using a spade or sod edger open the turf and force the edges of the tarp into the crack. Make a tight seal by covering the edges with soil. This should be tamped down for a more effective seal. When the tarp is completely sealed, allow the required amount of gas to flow into the pen; then pull the dispenser out from under the tarp. When dispensing gas, work so that the wind will blow any gas that might escape away from you. Allow the tarp to remain in place for 24 hours.

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VI. Removal of Tarpaulin:

After 24 hours, working so that the wind is behind you, pull diagonal corners of the tarp loose, to allow any concentration of gas remaining to be dispersed. Wait 30 minutes before completely removing the tarp.

VII. Precautions to be Observed:

1. MC-2 is a poisonous gas and should be treated as such.
2. Work upwind if possible when dispensing gas and removing tarp.
3. Place DANGER signs, if area is subject to traffic.
4. In the event of leaking gas, allow it to completely disperse before attempting to repair leak.
5. If MC-2 is spilled on clothing, remove clothing at once and allow it to air thoroughly before using again.
6. Do not wear gloves. MC-2 will not burn if spilled on skin, but will burn if spilled on clothing.

VIII. Approximate cost of material and equipment:

Plastic tarpaulin -	3 1/2 c per sq. ft.
Snake - - - - -	20 per linear foot
Dispenser - - - - -	\$5.00
Methyl bromide - -	85 d per lb., in 24-lb. case

All material, except the gas, can be used again if handled carefully.

- Snake - a plastic hose which can be filled with water. When filled it has a diameter of 4" and provides a tight seal.

IX. Observations of our trials:

1. On the fairway strip, regardless of whether the turf was rototilled, renovated, or left undisturbed, an apparent kill was obtained.

2. After 30 days the only evidence of regrowth was in areas where the seal was poor. In the center area, which was not tilled, but was under the high point of the tarp, bermudagrass seemed to be completely killed.

3. In the putting green plot where we used the snake for sealing the edge, there was some seepage. A great amount of work can be saved by using the snake.

4. One-half of the putting green plot was seeded to Polycross bentgrass 48 hours after the removal of the tarp. Apparently there was no detrimental effect to the bentgrass seed, which germinated in 7 days.

5. Although our trials have been limited to this season's work, the results conform with results obtained in other sections of the country. On the basis of the combined data, we feel that MC-2 can be used to solve some weed problems with turf.

(In order that the information in our publications may be more intelligible it is sometimes necessary to use trade names of products or equipment, rather than complicated descriptive or chemical identifications. In so doing it is unavoidable in some cases that similar products which are on the market under other trade names may not be cited. No endorsement of named products is intended, nor is criticism implied of similar products which are not mentioned.)

CONFERENCE ON TURF CULTURE CONTINUES TO GROW

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members of the Research Advisory Committee. Mr. Charles Wilson, Extension Agronomist of the U. S. Golf Association Green Section, described the development of the National Coordinated Turf Program, and showed many slides illustrating recent progress in the field of turf culture.

Dr. O. R. Lunt of the Division of Irrigation and Soils, discussed the subject of soil amendments and their relation to the preparation of soils. He discussed various organic compounds, soluble silicates and certain trivalent compounds which offer some promise of improving soil structure, although they have not yet been tested under turf conditions.

Mr. O. J. Noer discussed turf management in relation to disease control and turf quality, and presented slides illustrating important points in turf culture. Other slides on the same subject were shown by Mr. Thomas Mascaro of West Point Lawn Products, West Point, Pennsylvania.

A very interesting discussion of turf culture and turf research in the British Isles, as well as in several countries of Continental Europe, was presented by Mr. Verne Wickham of the Los Angeles County Department of Recreation and Parks. Mr. Wickham described the research work and the elaborate consulting services which have been built up in the British Isles at the St. Ives Station through a large staff of specialists. However, in equipment and methods of management, Mr. Wickham believed that the U.S. is ahead in most respects.

The conference concluded with a banquet at the Rancho Golf Course Clubhouse, followed by a panel discussion in charge of Mr. O. J. Noer. Written questions were submitted from the floor and were handled by speakers on the conference program. Dr. Robert Hagan from the Davis campus, and Mr. John J. McElroy, of the Agricultural Extension Service at Berkeley, attended the meeting and took part in the discussions,

DOLLAR SPOT CONTROL TRIALS

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Dollar spot is the most prevalent disease of bentgrass turf in the coastal area of Southern California. Seaside bentgrass has been extensively used in the seeding of golf greens and home lawns in this area, either alone or in seed mixtures. It is highly susceptible to dollar spot. The disease appears in the early spring and persists with some variations in severity through the summer and fall months. Periodic applications of calomel and corrosive sublimate mixtures have been the standard control practice. Some instances of turf injury have been reported following applications during periods of hot weather, but experienced greenkeepers can and do avoid much of this injury by reducing the dosage during hot weather.

Plots of the National Cooperative Turf Fungicide Trials on the University of California, Los Angeles campus have given interesting data on the relative merits of various fungicides for the control of dollar spot. Comparable areas of Highland Colonial bent and Seaside bent turf were used for the 1951 trials. Past observation had indicated that Highland Colonial bent was susceptible to brown patch disease, but highly resistant to dollar spot. It was hoped that the fungicidal treatments applied to the Highland turf might yield information on the control of the brown patch disease should it develop in this area. During the trial period, from June 12 to September 5, only one small brown patch appeared for a short time in a single plot treated with a cadmium fungicide.

The figures given in the table below are the average number of dollar spots recorded on three dates during the trial period from June 12 to September 5. Five randomized plots of 25 square feet each were sprayed at 14-day intervals, at the rate of 10 gallons per 1000 square feet of turf area.

Material	Dosage	June 26	July 24	Aug. 21
	per 1000 ft. 10s-allons			
Orhocide 406	3.0 oz.	00.4	82.8	42.4
Calo-Cure	2.0 oz.	115.2	6.4	1.8
Calo-Clor	2.0 oz.	53.6	3.6	3.0
Cadminate	1.6 oz.	6.6	1.0	1.2
Puraturf 177	1.6 oz.	64.6	3.0	.8
Crag 1025	3.0 oz.	55.2	4.8	1.0
PMAS	.1 pt.	49.8	4.0	2.0
Control	- - -	222.2	92.6	68.8

As can be seen from the table, the fungicides containing cadmium the inorganic mercury mixtures, and the phenyl mercury solution were all effective for the control of dollar spot. No turf injury was noted in the trials of this year.

Inconclusive results were obtained from the series of plots receiving different rates of nitrogen fertilization in conjunction with fungicide treatment for the control of dollar spot.

NEW BOOK ON WEED CONTROL

A new book entitled "Principles of Weed Control" by Gilbert H. Ahlgren, Glenn C. Klingman and Dale E. Wolf, has just been published by John Wiley & Sons, New York City. The price is \$5.50 and the book contains 368 pages with numerous illustrations.

The senior author is a well-known agronomist who is a nation wide authority on weed control. He happens also to be unusually well informed on turf culture. This book attempts to cover the entire field of weed control, dealing with all methods and all types of plants. It is without doubt the latest and most up-to-date book on the subject and summarizes all important progress to date. The proceedings of the various regional weed control conferences are becoming quite formidable mimeographed transcripts, and a book such as this boils such information down to usable form for ready reference.

A chapter on turf weed control is included, together with much information on design and operation of sprayers, together with useful tables for preparing different kinds of sprays. The book is essentially a college textbook and gives numerous citations to literature and references, but it can be used for ready reference by anyone with an elementary knowledge of chemistry.

RECENT GIFTS

American Cyanamid Co.
New York
1 lb. potassium cyanate 25%
dust blend

Dunford Associates
Los Angeles
15 gals. Likwid Gro

Northrup, King & Co.
Los Angeles
3 bags Turfood

Pacific Toro Company
Los Angeles
Servicing of equipment

NEW CALIFORNIA LAW CIRCULAR

A valuable new circular "Lawn Planting and Care" is now available to Californians through the offices of the local County Farm Advisors of the California Agricultural Extension Service. This circular is No. 1810f of the Extension Service series, and is written by H. M. Butterfield, Warren R. Schoonover, and Harry W. Shepherd.

This circular of 40 pages deals with all questions apt to be raised concerning the planting and maintenance of lawns. It is beautifully illustrated and has useful charts for quick reference. There doubtless will be a large demand for this excellent bulletin.