



Fig. 1. — Bermuda grass area (left of pencil) was treated with Maleic Hydrazide before overseeding with rye while section on right was left untreated. Notice the difference in texture.

*Chemical Inhibits Bermuda Growth  
In Fall Changeover of Greens*

## **Tells Use of Maleic Hydrazide in Summer-Winter Turf Transition**

By **JOSEPH S. FOLKNER\***

**A** NNUAL rye is most often used to overseed permanent Bermuda turf to produce green color during the winter in southern states. Seaside bent in combination, or seaside bent alone are occasionally used.

The fall transition period—warm season to cool season grass—is often complicated by warm temperatures which keep the Bermuda grass growing vigorously at the time when overseeding with a cool season grass should be performed.

Several years of exploratory work with Maleic Hydrazide in Arizona have indicated that Bermuda grass growth can be inhibited for periods up to six weeks without injury or discoloration of the turf. Maleic Hydra-

zide, in addition to inhibiting growth, also inhibits seedstalk and pollen production.

Results obtained with Bermuda grass, however, are contrary to those reported by workers testing Maleic Hydrazide on cool season turfgrasses.

### **Large Scale Trial**

Based on this work, Gene Reid, Supt. of Parks, Tucson, in cooperation with the Horticulture Dept. of the University of Arizona, agreed to a large scale trial involving Maleic Hydrazide as an aid in the fall changeover of greens at Randolph Municipal GC.

On Sept. 10, 1954, 18 temporary putting greens were sprayed with .18 per cent MH-30 per gal. of water applied at the rate of 4-gals. per 1,000 sq. ft. The maximum temperature was 99 on that date. Test plots lo-

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cated on fairways were sprayed with concentrations of .09, .18, .27, and .45 per cent per gal. of MH-30.

The .18 per cent solution applied Sept. 10, inhibited the Bermuda grass where applied properly. Uneven coverage and an irrigation too soon after applying reduced the overall effectiveness of this treatment.

In fairway test plots, no discoloration of turf occurred; yet growth was inhibited and seed stalks reduced or eliminated.

### Complete Growth Stoppage

On the basis of preliminary observations, the 18 permanent greens were sprayed with a .45 per cent concentration on Oct. 21, 1954. Immediately prior to treatment, greens were mowed at a one-half in. height of cut. Following treatment, all cultural practices — including watering and mowing — were omitted for one week. At the end of the week the greens were cut again at one-half in. No clippings resulted. This lack of clippings indicated complete cessation of growth.

To prepare greens for overseeding, mowers were set at 3/16 in. and the turf cover removed. Clippings resulting from this mowing were a green chaff rather than clippings as such. This close mowing or scalping removed all of the green Bermuda leaves and left only brown stems.

Annual rye and Seaside bent were seeded and mulched with finely ground sewage sludge on Oct. 29 and 30. At the end of one week the Bermuda stems had greened up and the areas were showing seedlings of rye one-half in. tall.

The competition factor was eliminated by Maleic Hydrazide at a time when temperatures were conducive to the growth of both warm and cool season grasses, thus allowing much earlier establishment of a satisfactory winter turf. The new seedlings were apparently unaffected by the chemical, indicating no residual toxicity.

The winter-summer transition was satisfactory with the rye and bent going out and gradually being replaced by Bermuda. The greens were never out of play during this period.

The same treatment of the greens was employed during the 1955-56 season with equally satisfactory results.

### Rapid Transition

El Rio CC in Tucson for the past several years has been overseeded with Seaside bent. The transition period generally has been slow and late due to high temperatures favoring the growth of Bermuda grass. This created considerable competi-

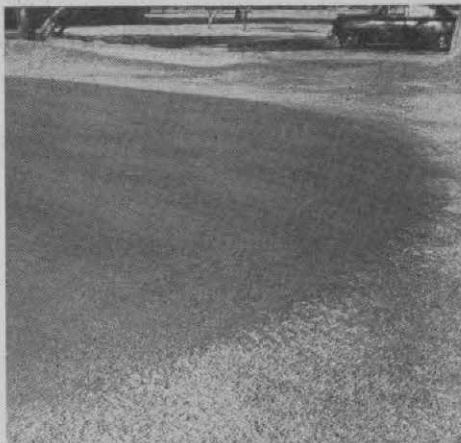


Fig. 2 — Contrast in texture between treated area and untreated portion of 17th green (foreground) is well emphasized in this photo at Randolph MGC.

tion for the bent grass seedlings.

In the fall of 1955, Ellis J. AuBuchon, chmn. of the green committee, and Otto Grieshaber, supt., requested assistance in preparing the course for the Arizona Women's Open early in December. Maleic Hydrazide was suggested as a possibility for a more rapid transition. On Sept. 21, temporary greens were sprayed with 120 cu. cm. of an aqueous solution of MH-30 in 5-gals. of water per 1,000 sq. ft. One oz. of Velsicol was added to the solution as a spreader. The temperature on that date was 97. Irrigation was withheld one week allowing time for the compound to be absorbed and translocated. The greens were verticut, fertilized with 10-lbs. 16-20-0 per 1,000 sq. ft. and seeded to rye on Sept. 29 and 30. Play was transferred to these greens Oct. 11.

The regular greens were sprayed Oct. 11, and with one exception, treated in the same manner as the temporaries. Seaside bent (instead of rye grass) was seeded at the rate of 5-lbs. per 1,000 sq. ft. and then topdressed. The seedlings emerged Oct. 30. The greens were mowed for the first time Nov. 15, at 9/16 in. Succeeding mowings were progressively lower until Nov. 30, a 1/4 in. height was attained. Greens were in play the first week of December.

Approximately one-fourth of one regular green was left unsprayed to serve as a check. In this area Bermuda grass reappeared and was growing strongly prior to the emergence of the bent. Fig. 2 shows the coarse texture of the Bermuda on the untreated right-hand side of the green. Fig.

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## Golf Boom in Hobbs

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was drilled in April, 1927, and is still producing. A monument has been erected and dedicated to that well. Now there are 6,000 producing wells in Lea County, which furnishes 90 per cent of the state's production. New Mexico ranks seventh in the nation among oil states.

There are only a half dozen days a year — during a dust storm or a snow storm — when you can't play golf in Hobbs. There's a "Teeoff at 12:30 Club" that meets six days a week for "business" sessions. The dozen members skipped meetings about eight times last year.

They were back in no time, though.

## Maleic Hydrazide

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I is a close-up taken Nov. 17, right after the second mowing; the pencil is on the line dividing treated and untreated areas of the green.

Temperatures of 100 and higher during the month of June, 1956, favorable to the growth of Bermuda, brought a gradual transition from bent to Bermuda. When observed June 21, the greens were approximately 75 per cent Bermuda and 25 per cent bent. On the check green the sprayed and unsprayed areas were alike in appearance.

It should be pointed out that the above work applies only to common Bermuda grass. Before large scale applications are made on the numerous fine leaved strains of Bermuda or on other warm season grasses, test plots should be established. Too, it should be emphasized that the above results were obtained under Arizona conditions and that climatic conditions in other areas where common Bermuda is grown may be sufficiently different to produce variable results. Nevertheless, Maleic Hydrazide may prove a valuable tool in transition from warm to cool season grasses on courses throughout the Bermuda grass area.

## Park Executives Meet

The 58th conference of the American Institute of Park Executives will be held Sept. 9-14 in the Olympic Hotel, Seattle, Wash. One of the highlights of the conference will be the golf course planning clinic scheduled for the 12th.