

**UNIVERSITY OF ILLINOIS —  
COLLEGE OF AGRICULTURE  
Department of Horticulture**

Mr. Ray Gerber, Editor  
The Bull Sheet  
865 Hillside Ave., Glen Ellyn, Ill. 60137

Dear Ray:

This is to sincerely thank the Midwest Association of Golf Course Superintendents for its generous support of the turfgrass research program at the University of Illinois. As our program is highly dependent upon outside grants, the benefits from turfgrass research are tied closely to the amount of financial support received from commercial firms, government agencies, and professional organizations like the MWGCSA. Turfgrass technology is undergoing some very rapid changes today with the introduction of new equipment, mechanical devices, herbicides, fungicides, insecticides, fertilizer carriers, turfgrass varieties and other materials used in the establishment and culture of turf. It is imperative that the universities conduct comprehensive evaluations and research with new products from industry in order to properly assess their value in contemporary turfgrass culture. Also, continued study of traditional and proposed practices can reveal new insights into the causes of, and hopefully solutions to, problems encountered in the culture of fine turfs. Let me review some of the findings of our research during the past three years:

New preemergence herbicides have been evaluated each year in order to find better materials for controlling crabgrass, goosegrass, and annual bluegrass without producing unacceptable injury to turf. The most significant find has been oxadiazon which will probably be available next spring as Ronstar from Chipman. This material has performed exceptionally well, especially in conjunction with vegetative plantings of Kentucky bluegrass for controlling annual bluegrass and other troublesome weeds without retarding turfgrass establishment. Other studies in which a number of commercially available herbicides were applied repeatedly for several years disclosed the thatch-inducing effect of calcium arsenate and bandane. Associated with this were shallow rooting, higher wilting tendency during summer, and increased susceptibility to *Helminthosporium* leaf spot disease in spring. We have also determined that the reduced water infiltration rates observed with these thatched turfs was not due to the thatch, per se, but rather the physical condition of the underlying soil presumably resulting from poor rooting and the absence of earthworms. Another study involving the use of preemergence herbicide for controlling existing infestations of annual bluegrass in closely clipped Kentucky bluegrass revealed the futility of using herbicides without adjusting other cultural practices to favor Kentucky bluegrass. Even where good annual bluegrass control was obtained using calcium arsenate, other results included substantial bentgrass invasion and serious thatch development.

Turfgrass renovation procedures employing herbicides have often resulted in serious reinfestation by perennial weed grasses due to inadequate control. Also, soil residues of applied herbicides have delayed or precluded turfgrass establishment on treated sites. The introduction of glyphosate will provide the turfgrass manager with a more effective herbicide for controlling perennial grasses. Yet, the absence of any soil

residual activity from this herbicide allows for re-planting as soon as adequate weed control has been obtained. However, our work has shown that premature planting of Kentucky bluegrass with a Rogers seeder into treated bentgrass severs the bentgrass stolons thus interrupting translocation of the herbicide and reducing control. However, glyphosate is a substantial improvement over presently available materials and it will undoubtedly become an important herbicide for use in turf.

Aquatic herbicides, for controlling algae and other types of vegetation in water bodies, are a matter of concern when the treated water is subsequently used for irrigating turf. Our results from research with aquatic herbicides in irrigation water have enabled us to characterize these herbicides in terms of their relative safety to putting green turf. For example, no injury was observed from multiple applications of endothall, copper sulfate, Cutrine, fenac or 2,4-D amine while dichlobenil and simazine were highly injurious to the turf. Some injury was observed from 2,4-D ester, silvex and diquat. We are currently developing literature that will tie together aquatic weed identification and control, and relative hazards associated with using herbicide-treated water for turfgrass irrigation.

Another important aspect of our research program is the evaluation of new turfgrass varieties with the greatest emphasis on Kentucky bluegrasses. Some turfgrass writers have criticized the efforts of plant breeders in providing such a long list of new varieties, and, certainly, there is some confusions with so many choices among the new commercially available grasses. However, with the tremendous variability within the Kentucky bluegrass species, we can test for adaptability to different cultural intensities and eventually we will be able to recommend blends for specific uses based on the known features of each grass in the blend. For example, we now know that the selections Ba 61-91, P-140 and RAM#1 are highly competitive with annual bluegrass at  $\frac{3}{4}$  inch cutting height while Park and Galaxy are quickly overtaken by annual bluegrass under the same conditions. Thus, an important control for annual bluegrass is selecting those varieties that are most adapted to the conditions under which annual bluegrass develops. To carry this a bit further, the golf course of the future may be all Kentucky bluegrass (excepting the putting greens) but with different blends of varieties for the tees, fairways, and roughs based on the adaptation of different varieties to these intensities of culture. Our concern at the University of Illinois is to help clarify this seemingly confusing varietal picture (what Nutter calls VD—varietal dilemma) so that turfgrass managers can take full advantage of the variability within Kentucky bluegrass in developing and sustaining the best possible turfgrass quality under prevailing environmental conditions.

The progress that we have made in these and other studies is largely due to the fine financial support that we have received from the MWGCSA and other organizations. We are sincerely appreciative that you have provided us with the opportunity to serve you better.

Sincerely yours,  
A. J. Turgeon  
Assistant Professor and  
Extension Turfgrass Specialist