

DEVELOPING SALT, DROUGHT AND HEAT RESISTANT
TURFGRASSES FOR MINIMAL MAINTENANCE

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El Paso, Texas

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1987 Research Grant: \$15,000
(fourth year of support)

I. Research Accomplished:

1. Late in 1986, Texas A&M University completed a major research facilities expansion program at the El Paso Research Center. The turfgrass salt resistance program moved into a new controlled environment glass greenhouse with high intensity lighting. This new facility has reduced the time necessary for each salt resistance evaluation run by 10 to 15 percent.
2. Unexpected results of buffalograss salt resistance research is differences in germ plasm susceptibility to Pythium spp. in the vegetative establishment phase of development. About 15 percent of the entries evaluated appear to be susceptible.
3. Additinal evaluation runs on the current buffalograss germ plasm base indicate a low potential of rapidly obtaining salt resistant cultivars.
4. Initial salt resistance evaluation of 29 zoysiagrass selections from a diverse germ plasm base indicate high potential of obtaining salt resistant cultivars. Seventeen percent of the selections were able to maintain significant growth at salt levels half of that found in sea water.
5. Selections from the buffalograss improvement program under the direction of Dr. Terrance P. Riordan, University of Nebraska, recently arrived. This is the germ plasm base which will make up the synthetic scheduled for future release.
6. Salt resistance evaluation of three current turfgrass types have now been completed or are well under way. Salt resistance ranking of these turfgrasses is of the following order from least to most salt resistant. Buffalograss, St. Augustinegrass, and Zoysiagrass.

II. Current Research:

Vegetative material of 29 buffalograss and zoysiagrass germ plasm entries are being evaluated for salt resistance.

III. Research Planned:

1. Complete evaluation of current buffalograss germ plasm. Begin evaluation of the Nebraska buffalograss synthetic germ plasm in summer 1988.
2. Complete evaluation of Zoysiagrass germ plasm (1988 to 1989).
3. Receive and increase bentgrass and bermudagrass germ plasm. Thirty-two advanced bentgrass selections are scheduled from the Texas improvement program, under the direction of Dr. M. C. Engleke. Evaluation for salt resistance may begin by late spring to summer 1988.