The Effect of Explant Type and Culture Conditions on Turfgrass Callus Initiation and Plant Regeneration. (C05-kuo184013-Poster)

Authors:

• Y.Kuo*. - Chinese Culture University*.

Abstract:

Turfgrass form a more or less contiguous ground cover that persists under regular mowing and traffic. Tissue culture of turfgrass is an expanding research area that may be used for improving the genetic desirability of turfgrass. A stable, uniform whole plant microculture system (WPMC) to evaluate plant variants may also provide a new dimension in the search for superior lines. In this study, callus was induced from nodal explants of Texas Common, Seville, and Floratum St. Augustinegrass, and Tifway 2 bermudagrass; from unemerged inflorescences of Texas Common and from seeds of Seaside creeping bentgrass; zoysiagrass, and common bermudagrass. Callus was induced at a higher frequency with 2.4-D than NAA or Picloram from immature inflorescences of Texas Common. The rate of callus initiation was higher on agar-solidified medium when compared to on filter paper bridges from seeds of Seaside and the immature inflorescence explants of Texas Common. For WPMC salt-tolerant screening test we found that Tifgreen 2 or Tifdwarf regenerated with depressed root number, root length, and shoot length in 1% NaCl media, as compared to growth in media with 0.1% NaCl or no supplemental salt. All explants grown with 0.1% NaCl supplemented media exhibited improved root and shoot growth. Explants exposed to minor salinity stress developed root systems which readily adapted to the stress environment. Conclusively, the cultivar Tifgreen 2 was significantly

more salt-tolerant than Tifdwarf.

Corresponding Author Information:

Yu-Jen Kuo Chinese Culture University 55, Hwa-Ken Rd. Taipei 111 Taiwan, R.O.C. phone: 02-28618459 fax: 02-28617507 e-mail: kuoyj@ccu016.pccu.edu.tw

Presentation Information:

Presentation Date: Monday, November 11, 2002 Presentation Time: 4:00-6:00 pm Poster Board Number: 1016

Keywords:

tissue culture, turfgrass, callus, immature inflorescence