Aluminum Tolerance Among Three Poa Species. (C05-liu072711-Oral)

Authors:

- H.LIU - *Clemson University*
- Y.HE - *Clemson University*
- J.W.ADELBERG - *Clemson University*

Abstract:

Aluminum toxicity is a serious problem when a soil is acidic, particularly when a soil pH is below 5.0. There is a lack of literature in comparison of Al tolerance among Poa species. This study was designed to evaluate performance of three Poa species: 'Midnight' Kentucky bluegrass, Supina bluegrass, and Q97-1-3 annual bluegrass under aluminum stress by using a tissue culture method. The three species were seeded and the growing media were treated with 0, 80, 160, and 240 uM of Al at a pH 4.5 with a reduced phosphorus supply. After 20 days, under the treatment of 240 uM of Al, the callus formation rates of Q97-1-3 annual bluegrass, Supina bluegrass, and 'Midnight' Kentucky bluegrass were 75.0%, 42.5%, and 39.7% respectively. The seed germination rates were also reduced and the three species showed a similar trend to the callus formation results from 69.2% to 48.9% when seeded in germination media under the treatment of 240 uM of Al. The three species responded to Al stress differently with concentration changes. Overall, Q97-1-3 annual bluegrass showed better aluminum tolerance and 'Midnight' Kentucky bluegrass was most sensitive to Al among the three species compared. Haibo Liu, 864-656-6367, haibol@clemson.edu

Corresponding Author Information:

Haibo Liu
Clemson University
178 Poole Ag. Center, Dept. of Hort. Clemson Univ.
Clemson, SC 29634

phone: 864-656-6367
fax: 864-656-4960
e-mail: HaiboL@Clemson.edu

Presentation Information:

Presentation Date: Thursday, November 14, 2002
Presentation Time: 9:30 am

Keywords:

Aluminum, Poa species, Tissue culture, callus