Ryegrasses--Hyperaccumulator of Phosphates. (A05-sharma132220-Poster)

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Abstract:

Practice of spreading poultry litter on farmlands is causing movement of soluble soil phosphates through erosion, leaching and run off, endangering the natural aquatic systems in different regions of USA. Need for phytoremediation of soil using phosphate hyperaccumulator crops in thus currently emphasized. In the present study, two varieties of annual ryegrass (Lolium multiflorum): Marshall and Gulf ryegrass were tested for P accumulation potential using in vitro solution culture. These plants accumulated P up to 5% of dry weight in their aerial parts. Phosphate accumulation was correlated with the concentration of phosphate (0-15000 mg/L KH_2PO_4) in medium. These grasses were further characterized as phosphate hyperaccumulators employing Scanning electron microscopy (SEM) and Energy dispersive X-ray spectroscopy (EDS). SEM and EDS revealed high contents of P in different cell types of root and shoot tissues. This study also sheds light on mechanism of Pi uptake in abundance of medium phosphate

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Presentation Information:

Presentation Date: Tuesday, November 12, 2002
Presentation Time: 9:00-11:00 am
Poster Board Number: 338

Keywords:
Phosphate, Ryegrasses, Phytoremediation, Hyperaccumulation