

GREENHOUSE SCREENING TECHNIQUE FOR SOIL ACIDITY TOLERANCE IN MAIZE (*ZEA MAYS* L.) R. Urrea¹, H. Ceballos*², S. Pandey³, A.F.C. Bahía⁴, and L.A. León³. ¹FENALCE, A.A. 384, Montería, Colombia; ² Univ. Nac. Colombia, A.A. 6713, Cali, Colombia; ³CIMMYT, A.A. 6713, Cali, Colombia; ⁴CNPMS/EMBRAPA, Caixa Postal 151, Sete Lagoas, MG, Brazil.

Field evaluation of maize for tolerance to soil acidity is expensive. To identify alternative screening techniques for maize, this study adapted a pot bioassay used for other crops. Ten open-pollinated cultivars and diallel crosses from eight parents were evaluated in the field, in nutrient solution, and in pots. Best results were obtained in pots after 14 d of growth in soils with intermediate stress. Fresh root weight, lateral root length, and visual scoring provided the best separation between tolerance and susceptibility, were simple, and rapid measurements, and showed significant correlations (~ 0.55) with yield in the field. While distinguishing tolerant from susceptible genotypes, the pot bioassay could not clearly detect differences in levels of tolerance. Results suggest that maize possesses several mechanisms for tolerance to soil acidity.