

Influence of water stress and *Macrophomina phaseolina* in growth and grain yield of common beans under controlled and field conditions

S. Hernández-Delgado[^] M.A. Cantu-Almaguer[^] A.L. Arroyo-Becerra[^],
M.A. Villalobos-Lopez[^] J.M. González-Prieto[^] and N. Mayek-Pérez[^]

Centro de Biotecnología Genómica-Instituto Politécnico Nacional (IPN). Reynosa, México; [^]Campo Experimental Río Bravo-INIFAP, Río Bravo, México; and [^]Centro de Investigación en Biotecnología Aplicada-IPN. Tlaxcala, México Granted by CONACYT (89854) and IPN (SIP20080488).

Abstract

Drought stress reduces common bean {Phaseolus vulgaris L.} grown and grain yield as well as increases susceptibility to root rot pathogens such as Macrophomina phaseolina (Tassi) Goid (Mp) (2, 3). Under controlled conditions water stress rather than Mp affects growth, water relations and grain yield of common beans (2) and resistant cultivars show xeromorphic traits compared with susceptible germplasm (3). Some efforts have been conducted to identify RAPD (6) and QTLs (5) associated to Mp resistance but not to combined resistances. The aim of this work was to compare the response to combined Mp and water stress under both controlled and field conditions of two contrasting common bean cultivars.