

COTTON GENE FLOW: GENETIC DIVERSITY IN OUTCROSSING

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Abstract

Previously we have reported on the finding of genetic differences in the abiotic stress tolerance of cotton pollen. Genetic differences in sensitivity to humidity were observed impacting pollen survival in dry environments. The present study evaluated out-crossing rates in cotton lines whose pollen exhibited different abiotic stress tolerances. Greenhouse studies were used initially to evaluate the reproductive competitiveness of pollen with known differences in dehydration stress tolerance. Genetic diversity in pollen germination and ovule fertilization were observed among the six lines evaluated. Field studies were used to evaluate gene flow from these lines under irrigated and dryland conditions. Initial findings showed genetic diversity in outcrossing under dryland conditions.