IMPROVING WATER USE EFFICIENCY AND HEAT TOLERANCE BY EXPRESSING A RICE GENE OsSIZ1 IN TRANSGENIC COTTON

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Abstract

Drought and heat are the two major environmental factors that limit cotton production in Texas High Plains. To sustain cotton production in the semiarid land of Texas High Plains, it is imperative that drought- and salt-tolerant cotton be developed. In an effort to substantially improve cotton's performance under water limited conditions in West Texas, we expressed a rice gene named OsSIZ1 in transgenic cotton. Our preliminary data indicate that OsSIZ1-transgenic cotton plants perform significantly better than wild-type cotton in photosynthesis, water use efficiency, as well as in fiber yield under heat and drought conditions in laboratory conditions. Field testing of OsSIZ1-transgenic cotton plants is on-going, and most recent data will be reported at the meeting.