

Identification of Anthracnose Resistance Loci in *Sorghum bicolor*

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Colletotrichum sublineola is an aggressive fungal pathogen that causes anthracnose in sorghum. The symptoms of anthracnose are leaf blight and stem rot. *Sorghum bicolor*, the fifth most grown cereal crop in the world, can be highly susceptible to the disease, most notably in hot and humid environments, which favor spread of the fungus. Yield losses of up to 70% have been reported in susceptible germplasm. The sweet sorghum acreage in the Southeastern U.S. is increasing steadily, spurred by growing interest in biofuel production and sorghum's complementary nature to Florida's already established sugarcane industry. Resistance to anthracnose is, therefore, of paramount importance to ensure economically viable commercial production of bioenergy sorghums. We generated a biparental mapping population of 125 F4:5 sorghum lines to identify anthracnose resistance genes in the highly resistant cultivar 'Bk7'. Four field trials have been performed in Florida and the population has been genotyped using sequencing-based single nucleotide polymorphisms. Two resistance loci have been identified, on chromosomes 7 and 9. Current effort is focused on identification of the underlying resistance genes. These data will be used to ultimately identify the molecular basis of disease resistance and to introgress this trait in susceptible germplasm with otherwise attractive agronomic properties. Supported by the Southeastern SunGrant Center and USDA-NIFA Award No. 2010-38502-21854.