

COTTON GERMPLASM LINES RELEASED BY THE UNIVERSITY OF ARKANSAS IN 2009

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Abstract

Arkot 9811 and Arkot 9815 are noncommercial breeding lines of cotton (*Gossypium hirsutum* L.) that were released by the Arkansas Agricultural Experiment Station in October 2009. Arkot 9811 was derived from a 1998 cross of FiberMax 989 with Arkot 9108. Arkot 9815 was derived from a 1998 cross of GC-251 with Ark 8717-17-13, an advanced breeding line that was derived from crossing two F1 populations; one derived from crossing DES 119 / Miscot 7803-52 and the other one derived from crossing Miscot T8-27 by Miscot 8006. Lint yields of Arkot 9811 and Arkot 9815 were equal to two check cultivars in 15 Arkansas tests. Among 32 entries evaluated over all 10 locations of a 2007 regional test, Arkot 9811 and Arkot 9815 produced the second and third highest lint yields, respectively. Basic and related yield components (number of seed per area, lint index, seed index and fibers per seed) of Arkot 9811 were equal to DP 393. Arkot 9815 produced fewer seed per area, higher lint percentage and fewer fibers per seed than DP 393. Height and maturity of both lines are similar to DP 393. Fiber properties of Arkot 9811 and Arkot 9815 were inferior to DP 393, producing higher micronaire and shorter length. Both lines produced moderate leaf pubescence ratings, but were less glabrous than DP 393. However, bract trichome density of both lines was less dense than DP 393. Both lines expressed resistance to bacterial blight. Arkot 9811 expressed resistance to tarnished plant bug equal to SG 105, while Arkot 9815 expressed higher resistance than either check cultivar. The relative yield, maturity, and line-specific host plant resistance traits make these lines valuable to cotton breeding programs.