

YIELD COMPONENTS IN 53 CONVERTED RACE STOCKS

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Abstract

Fifty-three of the converted race stocks were evaluated for lint traits, boll traits and within boll yield components. These race stocks were: TX0078, TX0087, TX0088, TX0091, TX0096, TX0100, TX0101, TX0102, TX0104, TX0106, TX0113, TX0117, TX0119, TX0120, TX0121, TX0124, TX0140, TX0150, TX0151, TX0154, TX0155, TX0156, TX0158, TX0162, TX0164, TX0165, TX0168, TX0170, TX0174, TX0175, TX0180, TX0182, TX0197, TX0206, TX0212, TX0215, TX0226, TX0228, TX0237, TX0239, TX0243, TX0244, TX0245, TX0247, TX0257, TX0326, TX0570, TX0612, TX0633, TX0634, TX0641, TX1000, and TX1149. Data were collected from plants grown at College Station, Texas in 1998 and 1999. Five plants from each line were sampled by harvesting five mature bolls. Seedcotton was ginned on an eight inch roller gin and fiber analyzed using the Advanced Fiber Information System (AFIS). Upper quartile length ranged from 1.04 in. to 1.20 in., length by number ranged from 0.80 in. to 0.90 in., length by weight ranged from 0.92 in. to 1.05 in., fineness ranged from 182.8 mtex to 213.2 mtex, short fiber content by number ranged from 12.2% to 19.6%, short fiber content by weight ranged from 3.2% to 5.7%, immature fiber content ranged from 3.0% to 5.1%, maturity ratio ranged from 0.96 to 1.02, boll size ranged from 4 g to 5.6 g, seeds/boll ranged from 25 to 32, percent motes ranged from 9.3% to 19.3%, seed index ranged from 9.7 g to 12 g, lint percent ranged from 28.6% to 35.8%, lint weight/seed ranged from 0.04 g to 0.06 g, lint weight/seed surface area ranged from 0.038 g to 0.053 g, fiber/seed ranged from 10,323 to 15,839 and fiber/seed surface area ranged from 9,065 to 13,772/cm². Differences were found among the converted race stocks at the $\alpha=0.05$ level of significance for all traits. Characteristics of TAM 94L-25, an advanced breeding line, typically exceeded those of the converted race stocks. However, potentially useful variability within these fifty-three race stocks for improving lint, boll and within boll yield component traits was identified.