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Seed Coat Fragments, Motes, and Neps: Cultivar Differences

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Cotton lint with large quantities of neps, seed coat neps (SCN), or seed coat fragments (SCF) causes problems for textile mills. This lint can be difficult to spin into yarn and the fabric can be difficult to dye. Cultivars grown in three tests as part of the Mississippi Regional Cotton Variety Trials were processed through a typical gin sequence and analyzed manually for SCF and motes (aborted seed) in the lint. The Advanced Fiber Information System (AFIS) was used to measure neps and SCN in lint. These results were used to characterize cultivars and identify trends between measurements. The most discernable difference among cultivars was the number of neps, which ranged from 140 to 292 neps/g lint. Cultivar differences were also found for the number of SCF, motes, and SCN. Across all tests, the SCF number ranged from 6 to 35 and averaged 13 SCF/g lint, and the SCN number ranged from 6 to 22 and averaged 11 SCN/g lint. The correlation (r) between manual SCF and AFIS SCN ranged from 0.59 in one test to 0.84 in another, so these measurements were similar. But, statistical analysis revealed that these measurements yielded different results. For the 19 cultivars common to the three test groups, three cultivars (SG215BR, BCG28R, and SG105) were statistically equal to the minimum number of both SCF and SCN content, and DES810 had the highest number of both.