

**RELATIONSHIP BETWEEN INDIVIDUAL FIBER LENGTH AND LINEAR DENSITY  
WITHIN-SAMPLE**

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**Abstract**

Sixty four bales of cotton from eight different locations were collected to investigate the within sample relationships between individual fiber length, maturity and linear density. The bales were sampled and fiber quality determined with HVI and AFIS. Then, combed ring spun yarns 30Ne were produced. During processing, lint samples from the raw material, combed sliver, and noils were collected. Fiber quality of these samples was determined with the AFIS PRO. Results obtained show drastic differences in fiber maturity and linear density between noils, combed sliver, and raw material. Fibers from the noils have a much lower maturity and linear density than fibers from the raw material and combed sliver. These results tend to confirm that the hypothesis of a constant linear density among length groups within-sample needs to be revisited.