

**IMPACT OF TRASH CONTENT ON FIBER QUALITY MEASUREMENTS AND YARN QUALITY****Eric F. Hequet****Texas Tech University and AgriLife Research****Lubbock, Texas****Noureddine Abidi****Texas Tech University****Lubbock, Texas****Abstract**

Multiple breeding lines coming from the main Texas public breeding programs were selected. The lint was evaluated by HVI and AFIS. The lint was then processed to produce ring spun 30Ne carded yarns. Ten bobbins of yarn were produced for each sample. Each bobbin was tested on Uster Tester 3 (400 yards per bobbin), Uster Tensorapid (10 breaks per bobbin), and Skein Tester (1 break per bobbin).

Results obtained with the Advanced Fiber Information System (AFIS) these past few years demonstrated the superiority of the AFIS to predict yarn quality. Not only for yarn strength, as it is possible with HVI, but also for yarn evenness. Nevertheless, we suspect that the presence of excessive trash could impact both the accuracy of the fiber properties measurements and yarn quality. If this was true, it could have important implications on the design of research ginning facilities for breeders. To confirm or not this point, 3 sets of samples were selected over a two year period:

- 74 commercial bales (base line)
- 222 research plots with moderate trash contents
- 87 research plots with high trash content

At this point in our investigations, it appears that the combination of HVI and AFIS data allows us to predict quite accurately yarn quality (ring spun yarn) for commercial bales. Nevertheless, better measurement of both short fiber content and trash content should allow us to predict nearly perfectly yarn quality. The presence of excessive trash content in the lint has a very negative effect on the quality of predictions for all yarn evenness related parameters. This is likely due to both less accurate AFIS readings with trashy cottons and more trash remaining in the lint after carding (translating in poorer yarn evenness). It is therefore essential to upgrade the research ginning facilities (most of them have no seed cotton cleaners and no lint cleaners while the cotton is harvested with a cotton stripper) if we want to breed for improved yarn quality and remain competitive on the international market.