ON-FARM COTTON FIBER QUALITY MAPPING USING RADIO-FREQUENCY IDENTIFICATION

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Abstract

Nowadays digital agriculture makes intensive use of technologies, and in cotton harvesting, new machines with technology makes it possible the mapping of fiber quality parameters on commercial fields through the Harvest Identification Cotton (HIDC®), that provides information such as variety, bale coordinates, moisture, and fiber yield. The objectives of this research were: Use the information from HIDC to create the harvest path of the cotton modules on-farm; Test three cotton fiber collection methods and compare results from HVI classification; and Map the fiber quality parameters to check the difference among sampling methods. The experiment was conducted in 2021 season, in Sorriso, MT, Brazil. The three cotton fiber collection methods were 1) Hand collection from picker (during the harvest); 2) Hand collection from bale (after harvest); 3) Standard procedure gin. All samples were ginned and sent to the Cotton Fiber Laboratory to get HVI classification. We made the categorized maps of 15 bales in each method and the parameters results as micronair, maturity, strength, uniformity index, short fiber index and color grade were analyzed, and we compared on maps to observe the variability in the field. The bales show variability for fiber quality parameters. Statistical differences were observed between the sample methods for the HVI classification, probably because the industrial ginning mode be better than 10 Saw Gin used to small lots. It is possible to map fiber quality parameters if you have interrelated bale and cotton gin information. We are grateful for the support and partnership of GMS Agrobusiness for the HVI data for this study and also acknowledge the projects USDA (LAB94427) and Louisiana Cotton Board and Cotton INC for the PhD sandwich of Francielle Morelli Ferreira financial support.