USDA Agricultural Marketing Service
U.S. DEPARTMENT OF AGRICULTURE

Cotton & Tobacco Program

Module Averaging Program

C&T

What is Module Averaging and How Does it Work?

Module averaging is a voluntary program offered by the USDA, AMS, Cotton & Tobacco Program since 1991 to all customers at no additional charge. It started as an effort between the USDA and an industry taskforce group to improve the accuracy of the strength measurement. The success of the initial program led to the inclusion of micronaire, length, and length uniformity in 1992. These four measurements have been included in the module averaging program since that time.

For a given module, the individual High-Volume Instrument (HVI) measurements taken on each bale for micronaire, length, length uniformity, and strength are averaged. This average is then assigned to all of the bales within the module. Any outliers are identified by the program and handled according to a very strict set of criteria and rules.

What is the Basis for Module Averaging?

Statistics. Module Averaging utilizes the fiber qualities of the bales within a module and the fact that modules are typically homogenous and well-blended to determine a more accurate classification. The averages of the measurements for micronaire, length, length uniformity, and strength for the bales collectively within a module provide a better statistical representation of each of the bale's individual measurements. This data is more reproducible and reliable than that of just a single bale test.

Rules of Module Averaging

- Only factors of micronaire, length, strength, and length uniformity are averaged.
- The maximum number of bales allowable for a module is 50.
- Module averaged bales are HVI tested exactly as those not averaged.
- Quality assurance testing rules apply to all bales whether module averaged or not.
- After HVI testing all bales in a module, the individual values are collected and averaged.
- Once averaged, the USDA computer calculates the differences from the average for each bale. Any bales that have measurements outside of the pre-established module average tolerances are considered "Outliers."

Benefits to the Cotton Industry:

- Improved accuracy in quality measurements.
- Stands up to scrutiny, challenges and re-class both domestically and internationally.
- Positive economic value (on average).
- Enhances storage, staging, and shipping options.

Benefits to the USDA Cotton & Tobacco Program:

- Improved accuracy in quality measures to customers that are more stable, reproducible and repeatable, statistically reliable, and consistent for all data users.
- Reduced variability = Increased Accuracy and Precision.
- Increased Accuracy and Precision = Increased Data Reliability, Confidence, and Marketing.