USDA Agricultural Marketing Service
U.S. DEPARTMENT OF AGRICULTURE

**Cotton & Tobacco Program**

# Module Averaging: FAQs

## What is module averaging?

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.

## What are the benefits of module averaging to the cotton industry?

- Improved accuracy in quality measures to customers that are more stable, reproducible and repeatable, statistically reliable, and consistent for all data users.
- Increased data reliability and confidence.
- Enhances storage, staging, shipping and marketing options.
- Stands up to scrutiny, challenges and re-class both domestically and internationally.
- Positive economic value (on average).

## 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.

## How does module averaging work?

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 are the 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”.

## What is the gin required to do?

The gin must do only two things: 1. specify the permanent bale identification (PBI) numbers to be included in each module for module averaging. 2. submit these bales electronically with the letter “M” to designate them for traditional module averaging. The maximum number of bales allowed for a module is 50.

## What is the process in the USDA classing offices to module average?

USDA classes and accounts for all of the bales submitted in the module, then the data can be released to the customer.

## What internal verifications are in place to ensure the assigned quality for the whole module?

USDA follows quality assurance rules for all cotton classed, including in modules. Also, appropriate tolerance levels ensure that true outliers are not included.

## Is module averaging accepted across the industry segments?

Yes. Since its introduction in 1991, voluntary module averaging has gained widespread acceptance by all segments of the cotton industry for its reliability. As of crop year 2024, 67 percent of all bales classed are module averaged.

## Why should I consider module averaging?

Research shows that quality measurements are more accurate and reproducible than a single bale test, which can enhance the value of the bales. Additionally, there are significant advantages for staging and shipping once the bales have been stored.

**More questions?** Contact Cotton Grading Division: **901-384-3010**. Director: Robert “Robbie” Seals, Jr.; Robert.Seals@usda.gov. Deputy Director: Byron Cole; Byron.Cole@usda.gov