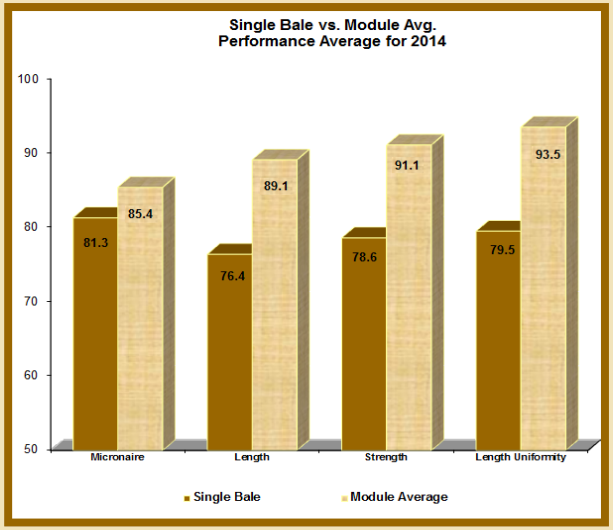
Benefits of Module Averaging

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

USDA Cotton & Tobacco Program:

- Improved accuracy in quality measurements to customers ensuring classing data is more:
- Stable
- Reproducible and repeatable
- Statistically reliable
- Consistent for all data users
- Reproducibility = Repeatability
- Reduced Variability = Increased Accuracy and Precision
- Increased Accuracy & Precision = Increased Data Reliability, Confidence, and Marketing



USDA, AMS, Cotton and Tobacco Program
Cotton Classing Offices
& Area Directors

Abilene, Texas - Kenny Day
Telephone: 325-690-9378

Corpus Christi, Texas - Ted Proske
Telephone: 361-241-4001

Dumas, Arkansas - Keith Maloney
Telephone: 870-382-5328

Florence, South Carolina - Chuck Dubose
Telephone: 843-667-4381

Lamesa, Texas - Ralph Cummings
Telephone: 806-872-8870

Lubbock, Texas - Danny Martinez
Telephone: 806-472-7620

Macon, Georgia - Noah Bell
Telephone: 478-474-2831

Memphis, Tennessee - Byron Cole
Telephone: 901-384-3025

Rayville, Louisiana - Terry Sims
Telephone: 318-728-6418

Visalia, California - Greg Townsend
Telephone: 559-651-3015

USDA United States Department of Agriculture

Module Averaging Program

Increasing Data Reliability, Confidence, and Marketability of ***YOUR*** Cotton

October 2015

Module Averaging

Module averaging is a voluntary program offered by USDA, AMS, Cotton and Tobacco Program since 1991 to all customers at no additional charge. It started as an effort between the USDA and an industry task group on quality to address a problem with 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.

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"

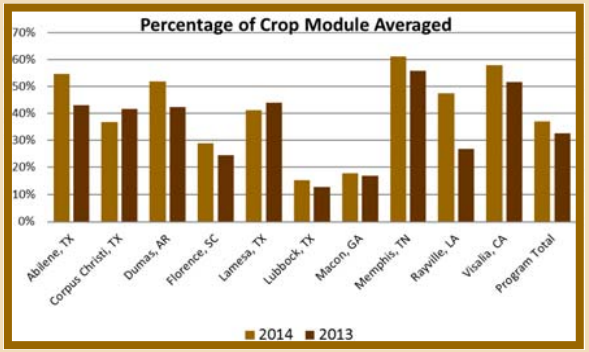
Applying Economic Impact to Entire Upland and Pima Crop - All Offices

	Points					Avg. Gained per	Bales Module	Total Gained for	Total Bales	Est. Gain if all Bales
	Length	Mike	Strength	Uniformity	Total	500 lb. Bale	Averaged	Module Avg. Bales	Classed (5/22)	Module Averaged
Florence	6.6	3.1	1.9	3.8	15.4	$ 0.77	458,859	$ 353,321.43	1,684,745	$ 1,297,253.65
Macon	7.9	5.7	3.3	3.9	20.8	$ 1.04	534,467	$ 555,845.68	3,115,116	$ 3,239,720.64
Rayville	5.5	7.6	0.8	3.2	17.1	$ 0.86	203,017	$ 173,579.54	429,911	$ 367,573.91
Dumas	5.1	6.3	1.8	2.3	15.5	$ 0.78	498,668	$ 386,467.70	981,693	$ 760,812.08
Memphis	4.7	5.0	1.5	1.9	13.1	$ 0.66	1,233,114	$ 807,689.67	2,040,093	$ 1,336,260.92
Abilene	3.3	3.3	1.0	2.6	10.2	$ 0.51	550,020	$ 280,510.20	1,042,240	$ 531,542.40
Corpus	4.4	3.2	1.7	2.8	12.1	$ 0.61	628,803	$ 380,425.82	1,748,541	$ 1,057,867.31
Lubbock	3.6	1.9	1.3	3.3	10.1	$ 0.51	326,150	$ 164,705.75	2,528,493	$ 1,276,888.97
Lamesa	4.5	2.9	0.9	4.1	12.4	$ 0.62	424,092	$ 262,937.04	1,045,647	$ 648,301.14
Visalia	4.6	3.1	0.7	2.6	11.0	$ 0.55	385,874	$ 212,230.70	720,696	$ 396,382.80
Upland Total	5.0	4.2	1.6	2.9	13.6	$ 0.68	5,243,064	$ 3,577,713.52	15,337,175	$ 10,912,603.80
Visalia Pima	2.4	3.4	5.3	0.0	11.1	$ 0.56	306,983	$ 170,375.57	544,691	$ 302,303.51

Source: USDA Cotton and Tobacco Program.

Participation

If you are interested in participating, you should contact your gin or your local classing office. Be sure that the gin is in communication with the Cotton Program to ensure that the numbers and corresponding bale ranges are provided correctly and entered into the system. Feel free to contact your local classing office Area Director with any questions.



When Bales are Flagged as Outliers

Historical studies since 1992 have shown that the majority of outliers move back to the module average within acceptable testing tolerances when retested. The AMS Cotton Program's classification system has a series of internal checks and retest parameters to ensure the accuracy of classification data. If an outlier occurs, the following steps take place:

- Each outlier bale is removed from the module average calculation
- The average for the remainder of the bales in the module is recalculated
- The recalculated module average (minus the outlier) is then assigned to all of the bales in the module except those where outlier exclusions apply
- The module average is not assigned to any first or last outlier bales in a module. Those bales retain their original values. In most instances, middle bale outliers will receive the recalculated module average
- Studies have shown that first and last bales in modules have a higher probability to be true outliers than middle bale outliers
- The USDA will review the class of any outlier bale at no charge that retains its original value that is submitted back to them. The policy has been in effect since the inception of module averaging