United States Department of Agriculture
Agricultural Marketing Service
Cotton Program

International Cotton Advisory Committee
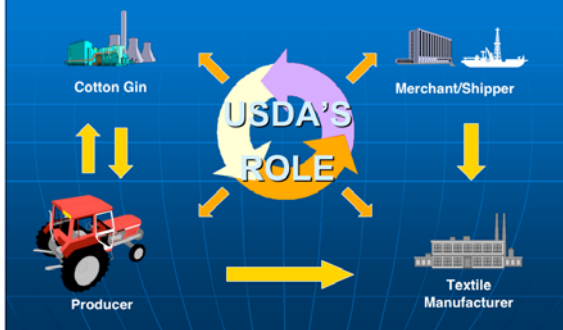
Lee Gibson, Chief
Quality Assurance Branch
USDA

Cotton Program Mission

To promote the efficient marketing of U.S. cotton, domestically and internationally, by providing unbiased classification, standardization, market news, and oversight of the cotton research and promotion programs.

U.S. Cotton Marketing System

Cotton Gin

Merchant/Shipper

USDA'S ROLE

Producer

Textile Manufacturer

Cotton Program Offices

Visalia
Phoenix
Lubbock
Lamesa
Abilene
Dumas
Memphis
Florence
Macon
Birmingha
Rayville
Corpus Christi
Washington, DC

* Washington Headquarters
● Memphis Cotton Complex / Classing Office
● Classing Facilities

Background - Classing

- 294 High Volume Instruments (HVI):
  - Micronaire
  - Strength
  - Length
  - Length Uniformity
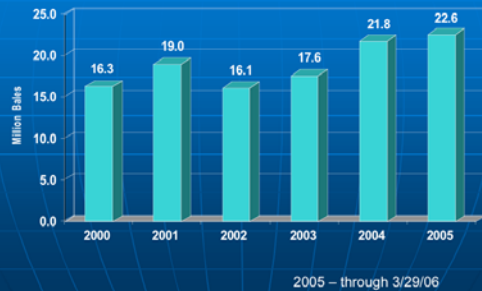 - Trash - % Area
  - Color Rd
  - Color +b

Background - Classing
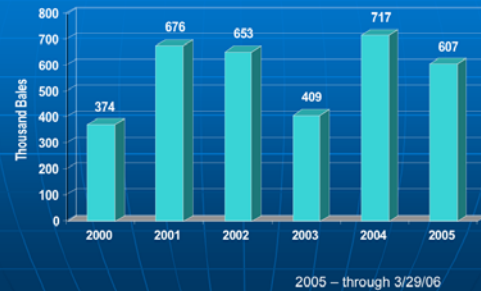
- 330 Manual Classers:
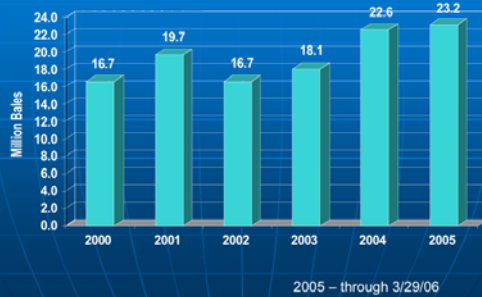 - Leaf Grade
  - Extraneous Matter

Upland Classings 2000 - 2005

Million Bales

Year	Value
2000	16.3
2001	19.0
2002	16.1
2003	17.6
2004	21.8
2005	22.6

2005 – through 3/29/06

Pima Classings 2000 - 2005

Thousand Bales

Year	Value
2000	374
2001	676
2002	653
2003	409
2004	717
2005	607

2005 – through 3/29/06

Total Classings 2000 - 2005

Million Bales

Year	Value
2000	16.7
2001	19.7
2002	16.7
2003	18.1
2004	22.6
2005	23.2

2005 – through 3/29/06

Areas of Discussion

- Standardization

- Classing Office Operation

- Quality Assurance

- Market News

- Research and Promotion

Standardization

Official Grade Standards

2900 Physical Forms of Official Color and Leaf Standards for U.S. Upland Cotton and 340 Physical Forms of Official Color and Leaf Standards for American Pima Cotton are Reproduced each Year

HVI Calibration Materials

40,000 Pounds of Cotton for Calibrating HVI Length, Strength, Uniformity, and Micronaire Prepared Annually

Prepared Annually:
- 200 Sets of Color Tiles
- 200 Trash Tiles
- 100 Color Check Boxes
- 50 HVI Trash Standards

Universal Cotton Standards Agreement of 1923

- Universal Standards governed by the Agreement
- Agreement between USDA, U.S. Cotton Industry & 23 Foreign Signatory Associations from 21 countries
- Provides delegates with a voice in governing the Universal Cotton Standards

Bangladesh
Bangladesh Textile Mills Association
Belgium
Association Cotonnière De Belgique
Brazil
Bolsa de Mercadorias e Futuros
Britain
Council of British Cotton Textiles
The Liverpool Cotton Association Ltd
Egypt
Alexandria Cotton Exporters Association
France
Association Francaise Cotonniere
Germany
Bremer Baumwollbörse
Indonesia
Indonesia Spinners Association
India
East India Cotton Association Ltd
Italy
Associazione Cotoniera
Japan
Japan Cotton Arbitration Institute
Japan Cotton Trade's Association
Japan Spinners Association

Korea
Spinners & Weavers Association of Korea
Malaysia
Malaysia Textile Manufacturing Association
Mexico
Camara National de la Industria Textil
Peru
Comite Textil de la Sociedad National de Industria
Philippines
Textile Mills Association of the Philippines
Poland
Gdynia Cotton Association
Spain
Centro Algodonero Nacional
Switzerland
Industrieverband Textile
Taiwan
Taiwan Cotton Spinners Association
Thailand
Thai Textile Manufacturing Association

The Universal Cotton Standards Agreement: Conferences

1925: First Universal Cotton Standards Conference

Universal Cotton Standards Conferences

- Held Biennially from 1925 to 1933
- Held Triennially from 1936 to present
- Only 2 Interruptions

Classing Office Operations
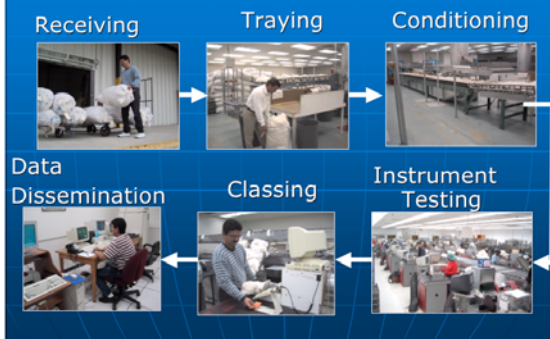
CLASSING OFFICE OPERATION

The Classification Process
- **Bale Sampling:**

The Classification Process

Receiving — Traying — Conditioning

Data Dissemination — Classing — Instrument Testing

Fiber Properties Classified

By High Volume Instrument

➡ **Official Color Grade**
➡ **Rd** Degree of Brightness
➡ **+b** Degree of Color
➡ **Trash** Percent Area Non-Lint
➡ **Micronaire** Fineness of Fibers
➡ **Length** Upper Half Mean (UHM)
➡ **Length Uniformity** Uniformity of fiber Lengths
➡ **Strength** Grams per Tex

By USDA Certified Classer

➡ **Official Leaf Grade** Determined in Accordance with Universal Grade Standards
➡ **Extraneous Matter Determination**

HVI – High Volume Instrument Uster 900U

Micronaire
Color & Trash
Length Strength Uniformity

HVI – High Volume Instrument Uster 1000U

Color & Trash
Micronaire
Length Strength Uniformity

Classification Data Distribution

Textile Manufacturers · Other Gov't Agencies · Cotton Merchants

National Database

Abilene · Visalia · Birmingham · Rayville · Corpus Christi · Memphis, TN · Phoenix · Dumas · Florence · Lamesa · Lubbock · Macon · Memphis

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Quality Assurance

Cotton Variability

For all fiber properties variability exists:

- Within a boll
- Within a plant
- Within a field
- Within a module
- Within a bale
- Within sample
- Within HVI testing
- HVI to HVI
- Laboratory-to-Laboratory

Cotton Variability

For all fiber properties variability exists:

- Within a boll
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- Within a module
- Within a bale
- Within sample

Study to understand

- Within HVI testing
- HVI to HVI
- Laboratory-to-Laboratory

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Work to Control

Quality Assurance Procedures

- Environmental controls and conditioning

- Calibration procedures

- Pre-season precision and accuracy testing

Quality Assurance Procedures

- Pre-season Classer orientations

- In-house checks

- Quality Assurance Checklot Program

Inter-Office Quality Assurance – Environmental Controls

- All classing laboratories and receiving rooms are required to maintain standard atmospheric conditions:

- 70°±1° F
  - 65% relative humidity ± 2%

Inter-Office Quality Assurance – Conditioning

- All cotton samples must be conditioned to a stable moisture content prior to HVI testing

  - 6.75% to 8.25% moisture

Inter-Office Quality Assurance – Instrument Calibration

- Strict calibration procedures are followed by all Classing Offices and the Quality Assurance Branch
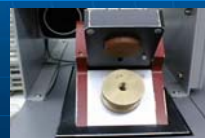

Inter-Office Quality Assurance – Instrument Calibration

- Known-value cottons are used to calibrate length, strength, and length uniformity

Inter-Office Quality Assurance – Instrument Calibration

- Precise mechanical orifices are used to calibrate micronaire

Inter-Office Quality Assurance – Instrument Calibration

- Value-established tiles are used to calibrate Color Rd, Color +b, and Trash

Inter-Office Quality Assurance – Universal Cotton Standards

- Classers utilize the Universal Cotton Standards to assign leaf grade determinations.

Inter-Office Quality Assurance – Pre-season Precision and Accuracy Tests

- Pre-season precision and accuracy tests must be completed for all HVI systems before the system is placed in production

  - Each instrument must pass a series of strict performance evaluations using known value cottons

  - Pre-season checklots samples are submitted to Quality Assurance from all HVI's from each office

Inter-Office Quality Assurance – Pre-season Classer Orientations

- Pre-season refresher and supervisory meetings

  - Review of example samples that were in question from previous season

  - Meet with management to discuss industry issues and upcoming season

  - Review Official Standards and class practice samples

Inter-Office Quality Assurance – In-House Verification Checks

- The testing levels for all instruments are checked every two hours using value established cottons

- The results of the verification checks are recorded to identify any potential problems

Inter-Office Quality Assurance – In-House Verification Checks

- Classer Supervisors assigned to each shift at each classing office to ensure leaf grade and extraneous matter determinations are consistent with the Universal Cotton Standards

Quality Assurance Checklot Program

- Approximately 1% of the entire crop is randomly selected as checklots for retest by the Quality Assurance Branch

- Checklot samples are selected at the classer station after the classification process is complete

- The classification data assigned by the HVI or classer can not be changed after the sample is selected as a checklot

Quality Assurance Checklot Program

- Checklot samples are shipped to the Quality Assurance Branch via overnight delivery for next day classification

- All checklot samples submitted to the Quality Assurance Branch are tested on two QA HVI's and the individual QA HVI results are averaged

Quality Assurance Checklot Program

- Checklot samples are classed for leaf grade and extraneous matter by the Quality Assurance supervisory staff

- Repeatability (reproducibility) and bias are calculated for all HVI factors, classer leaf grade and extraneous matter

Quality Assurance Checklot Program

- Quality Assurance classification results are returned to the respective offices immediately after the QA classification is completed

- All checklot samples tested at the Quality Assurance Branch are tracked back to the Classing Office, shift of operation, classification date, classification time, classing supervisor, classer, HVI operator and HVI

Quality Assurance Checklot Program

- Reports are generated and data are analyzed throughout the day to detect any potential problems or level shifts

- If the Quality Assurance staff detects any actual or potential problem, immediate interaction occurs with the office to ensure correction

Market News

Market News

Provide current and timely price and supply information on cotton and aid buyers and sellers in assessing market conditions and in making purchase and sale decisions

Gathering Market Data

Data From All Sources Collected and Analyzed

Textile Manufacturer

Other Government Agencies

Cotton Merchants

Cotton Producers

Cotton Market News Reporter

USDA Classing Laboratories

Turning Data Into Reports

Analyzed Data from Reporters is Reviewed and Compiled at Branch Headquarters

Daily Spot Cotton Quotations

Other Monthly/Annua Specialty Reports

Weekly Cotton Market Review

Weekly Quality of Cotton Classed

Monthly/Annual Cotton Price Statistics

Getting Reports to Customers

Internet

Mail

E-Mail

Visitors

Customers

Textile Manufacturers

Cotton Producers

Cotton Merchants

Other Gov't Agencies

Market News on the Internet

Cotton Program Market News:

www.ams.usda.gov/cotton/mncs/

• Weekly Cotton Market Review
• Cotton Quality
• Cotton Prices
• Cotton Linters
• Long Staple Review
• Cotton Varieties

Research and Promotion

9

How the R&P Program Works

Textile Research

Advertising

Agricultural Research

Stock Market

Market Share & Profits

A small assessment paid on each U.S. bale and on imported cotton goods funds research and promotion of cotton and cotton products

**United States
Department of Agriculture**
**Agricultural Marketing Service
Cotton Program**

Cotton Program Home Page:
www.ams.usda.gov/cotton/

USDA