Achieving the Benefits from an Instrument Established Cotton Classing System Designed for Testing Every Bale in a Country

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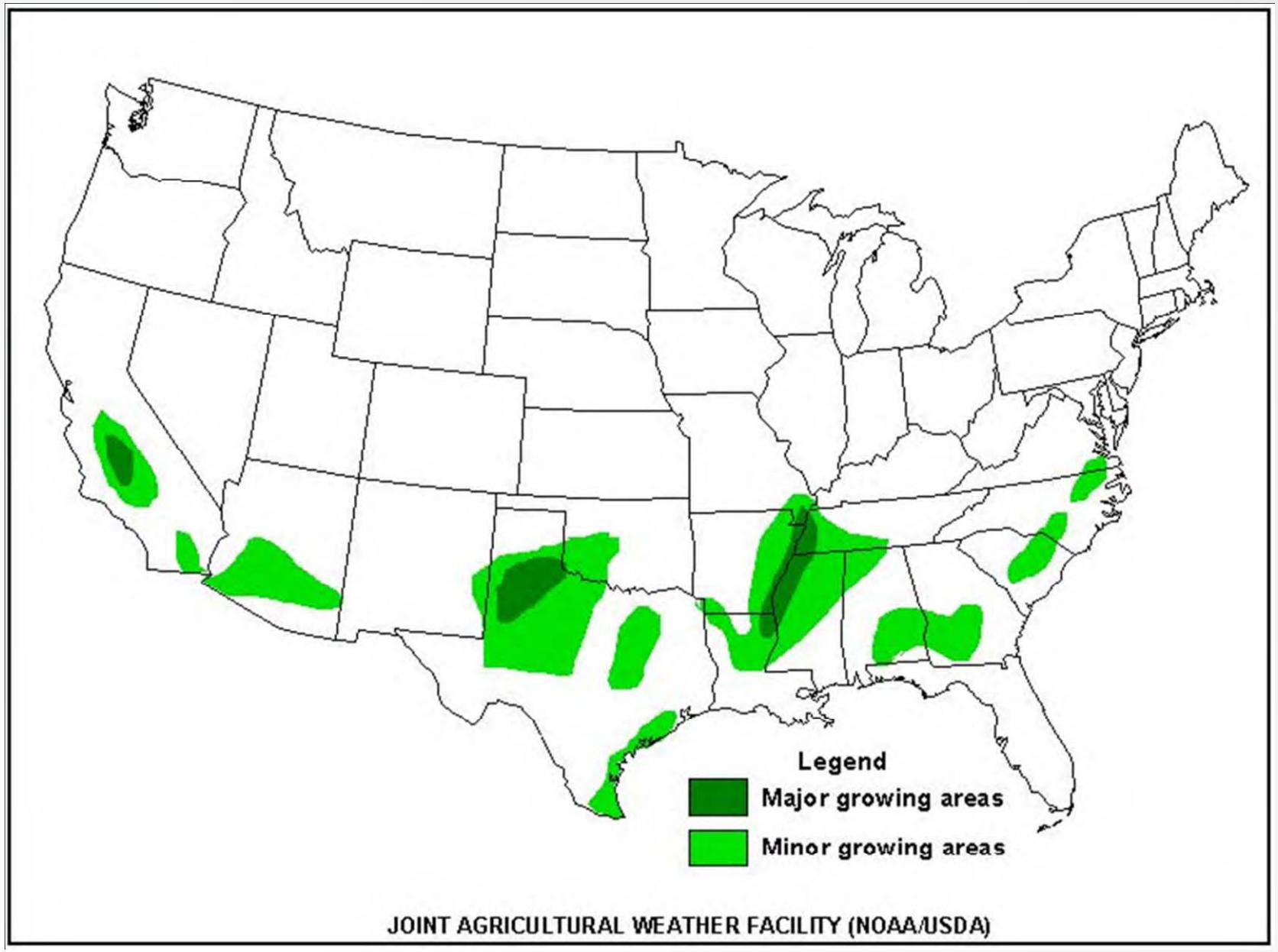
Topics:

- USDA Cotton Program
- The beginning of instrument classification
- Farmer incentive for instrument classification
- Transition difficulties
- Requirements for acceptance & high performance
- International consensus for implementing instrument classification
- Advantages & benefits of instrument classification

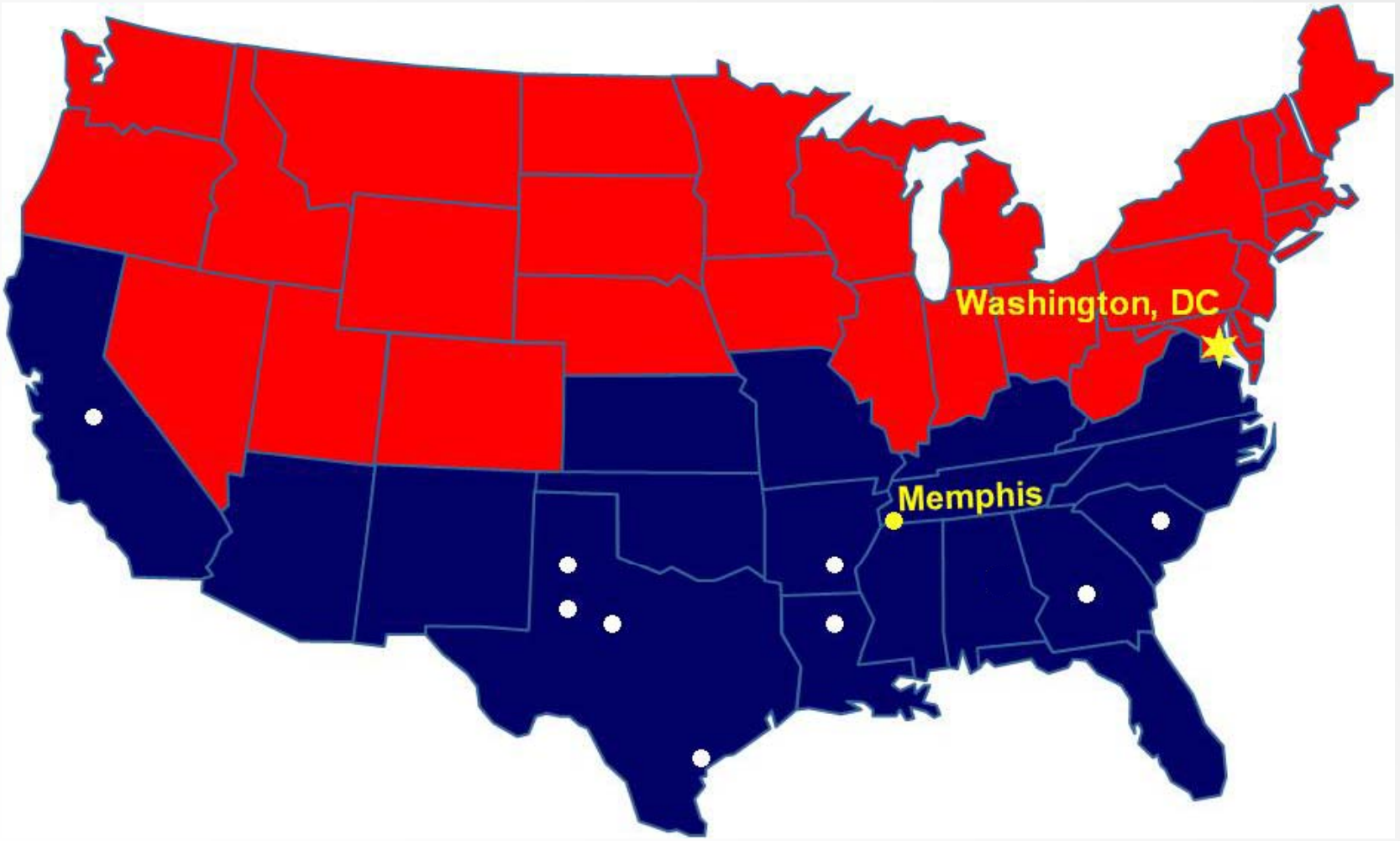
USDA Cotton Program:

- Classification
  - Provide cotton classification on each and every bale of cotton produced in the U.S.
- Standardization
  - Develop, maintain and provide internationally accepted cotton classification standards.

U.S. Cotton Growing Areas



USDA Cotton Program Facilities



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USDA Cotton Program HQ in Memphis, Tennessee

- **USDA Cotton Classification System:**
  - Every individual bale of cotton produced in U.S. is HVI classed by USDA.
  - All USDA cotton classification is performed utilizing exactly the same procedures and standards in all USDA cotton classing locations.
  - HVI data is available from USDA on every bale classed by USDA.

Fiber Properties Classified

By High Volume Instrument

- **Micronaire**
  Fineness of Fibers
- **Length**
  Upper Half Mean (UHM)
- **Length Uniformity**
  Uniformity of Fiber Lengths
- **Strength**
  Grams per Tex

- **Official Color Grade**
- **Rd**
  Degree of Brightness
- **+b**
  Degree of Color
- **Official Leaf Grade**
  Determined in Accordance with Universal Grade Standards
- **Trash**
  Percent Area Non-Lint

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HVI Uster 1000

258 in USDA Classification Service (2011)

Color & Trash

Micronaire

Length, Strength, Uniformity Index

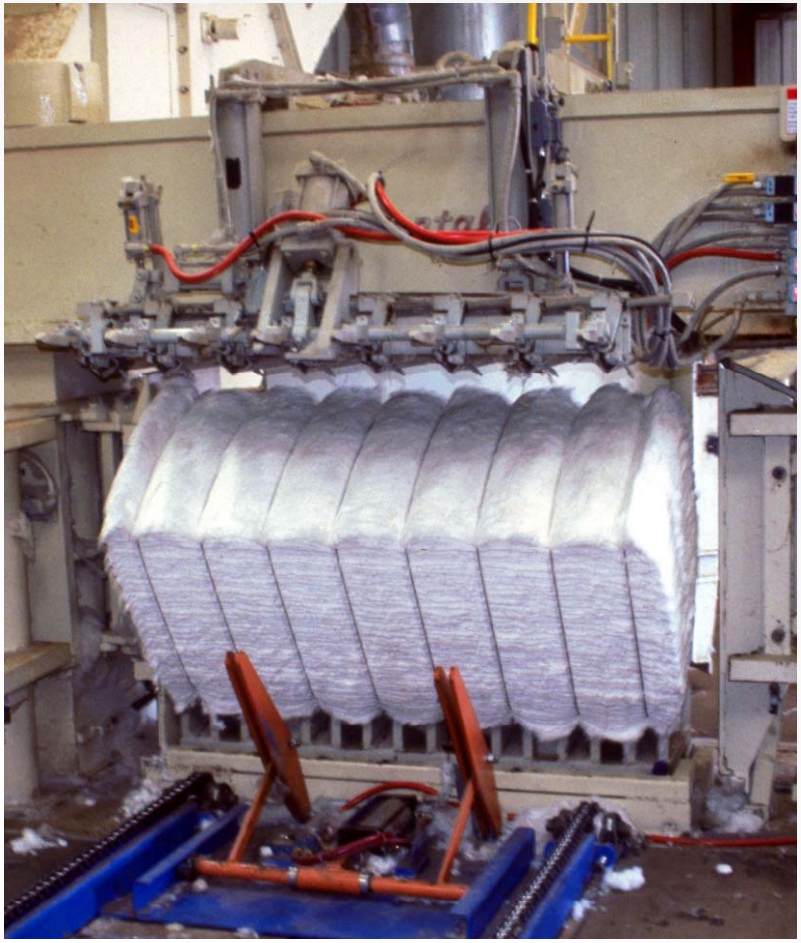
Fiber Properties Classified

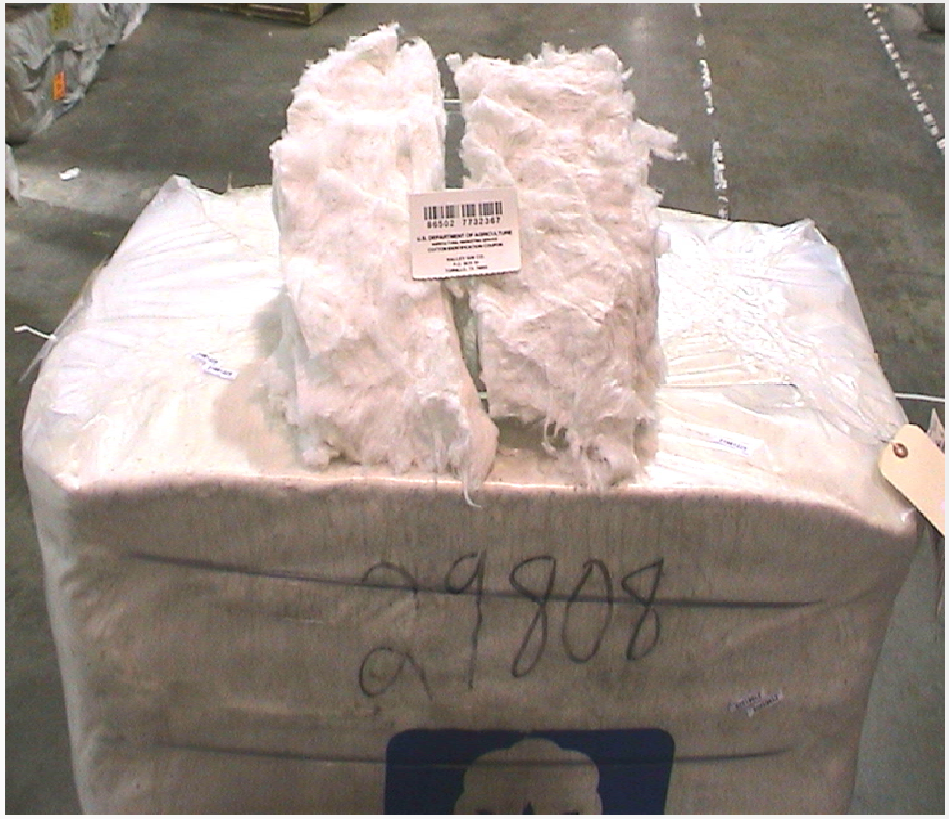
By USDA Classer

➡ **Extraneous Matter**

The Classification Process

- Bale Sampling:





The Classification Process

Permanent Bale Identification (PBI)

The Classification Process

Receiving

Traying

Conditioning

Instrument Testing

Classing

Data Dissemination

Standardization

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The Universal Cotton Standards

- **Internationally Accepted**

Micronaire

Strength, Length, Uniformity Index

Procedures

Rd/+b Color

Grade

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The Beginning of Instrument Cotton Classification

- Lamesa, Texas, USA in 1980
  - 10 HVI's
  - First large scale instrument classing operation

What was the incentive that initiated the move to instrument classing in the U.S.?

- Desire to sell cotton on its true worth
- For many years, Texas cotton (primarily West Texas) was very short staple and weak.

- Variety improvements in Texas began resulting in longer and stronger cottons in Texas. Unfortunately, the manual grading system of the 1970's was not recognizing the improvements and Texas cottons continued to be discounted relative to other U.S. cottons.

HVI Development in 1970's

The Lamesa, Texas Project

- A Texas grower cooperative funded the instrument classing project in Lamesa, Texas in hopes of increasing the value of their cotton.

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The Result

- As a result of the project, Texas cotton began receiving premiums and development of improved cotton varieties for Texas accelerated.
- Today, Texas grows some of the longest and strongest Upland cotton in the U.S. and is rewarded accordingly.
- Throughout the 1980's, other cotton areas in the U.S. eagerly adopted instrument classing.

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In 1991, USDA Fully Implemented Instrument Classing

- Practically every cotton bale in the U.S. has been instrument classed since 1991

What was the Most Difficult Part of the Transition Process for USDA?

- Gaining acceptance of USDA instrument classing data by merchants and mills
- Throughout the 1980's and early 1990's:
  - U.S. merchants continued to operate their own grading rooms and sell on "types" and "descriptions"
  - U.S. mills operated their own HVI's, HVI testing U.S. cottons that had USDA HVI data available

Slow Acceptance of USDA Data

- Beginning in the mid-1990's:
  - More and more merchants began using the USDA HVI data resulting in less and less need for merchant classing rooms
  - More and more mills began using the USDA HVI data for laydown selection resulting in less and less need for mills to maintain HVI testing labs

Acceptance of USDA Data

- Today practically all:
  - U.S. merchants trade cotton without handling or looking at samples. Only USDA data is used for quality determination.
  - Practically all U.S. mills and more and more international mills are buying on USDA class (greencard class) and selecting bale laydowns solely on USDA instrument classing data.

Achieving Acceptance of Instrument Classing Results

- Earn and maintain customer trust
  - Organizational integrity
  - Transparency in practices and procedures
  - Ensure data product is unbiased and accurate

Achieving Acceptance of Instrument Classing Results

- Integrity in Bale Sampling
  - Requirements:
    - Established relations with gins / warehouses
    - Standardized sampling procedures
    - Frequent visits / inspections

Achieving Acceptance of Instrument Classing Results

- Adopt industry accepted standards
  - Procedures, practices, calibration standards
  - Maintain involvement and awareness of CSITC Task Force developments

Achieving Acceptance of Instrument Classing Results

- Realize that although the international industry has embraced the importance of instrument classification, cotton trading is the slowest part of the process to change.

Requirements for a Consistent Level of High Performance

- Technical Requirements:
  - Skilled workforce
  - Reliable servicing
  - Stable power
  - Reliable and accurate HVAC

Requirements for a Consistent Level of High Performance

- Implement a Quality Assurance System
  - Routine calibration verification
  - CSITC Round Trial
  - Internal Round Testing
  - Instrument qualification

Sample Moisture Conditioning

Conditioning Standards:

- USDA requirement:
  - 21°±1° C and 65%±2% RH
  - 6.75% - 8.25% moisture content (dry basis)
  - Methods: Passive (48 hour) or Rapid Conditioning (10 – 15 minutes)

Cotton Sample Conditioning

Moisture Checking

International Consensus for Implementing Instrument Classing

- In 2002, an ICAC technical panel concluded that instrument classing was superior to manual grading. Further endorsed by the member governments at the 61st Plenary Meeting of the ICAC.
- CSITC Task Force formed in 2003
- In the 2011- 4 CSITC Round Trial, 80 facilities from 30 countries participated.

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International Consensus for Implementing Instrument Classing

- In 2004, China implemented a national cotton reform that included full instrument classing by 2010. This infrastructure is now in place.
- As of January 11, 2012, China has instrument classed 19,430,876 cotton bales (4,391,970 tons) by 76 classing offices with approximately 370 HVI systems.

Advantages to Instrument Cotton Classification

- Increased opportunity for cotton growers to be rewarded for actual quality
- Provides objective assessment of cotton quality
- Provides valuable fiber quality information to textile mills for better:
  - bale laydown selection
  - mill processing performance

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Advantages for Cotton with Instrument Cotton Classification

- Since mills do not need to “over buy” on quality to ensure that they are getting the needed quality for processing, mills can buy closer to the actual qualities they need.
- Since mills know more about what they are buying, they will pay more for cottons with instrument classing results.

Benefits of Instrument Classing

- Increased cotton value
- More marketing opportunities
- Better textile mill utilization / processing
- More competitive with synthetic fibers keeping cotton viable for the future

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Thank you for your kind attention!

Cotton Program Home Page:

www.ams.usda.gov/cotton/

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