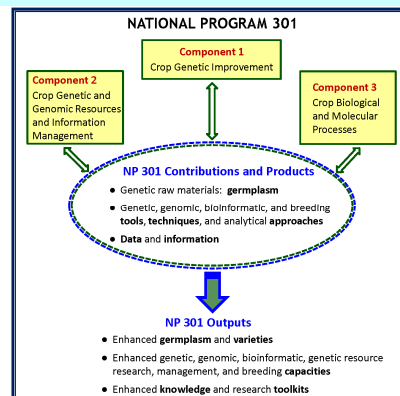


Crop Production and Protection

- Plant Genetic Resources, Genomics, and Genetic Improvement
- Plant Biological and Molecular Processes
- Plant Diseases
- Crop Protection and Quarantine
- Crop Production
- Methyl Bromide Alternatives

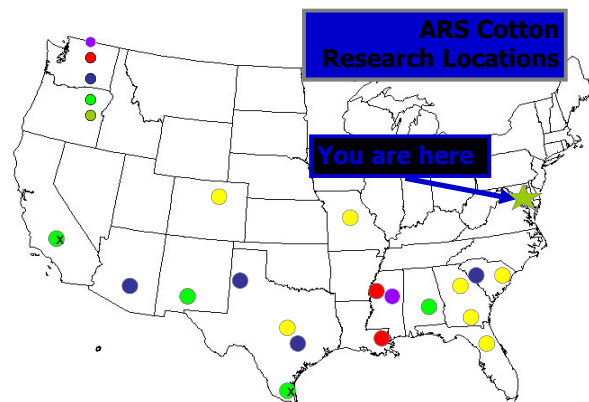


NP 301 Research Components are interactive, collaborative, and blend resources

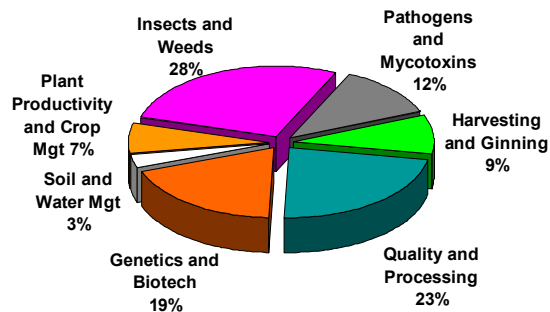


ARS is One of Several Partners in Cotton Research in the U.S.

- ✓ **ARS:** Broad, long-term problems of regional or national scope. Responsible for collecting data for U.S. regulatory agencies.
- ✓ **State Universities:** Regional or local issues, education/extension
- ✓ **Private Companies:** Product development and commercialization



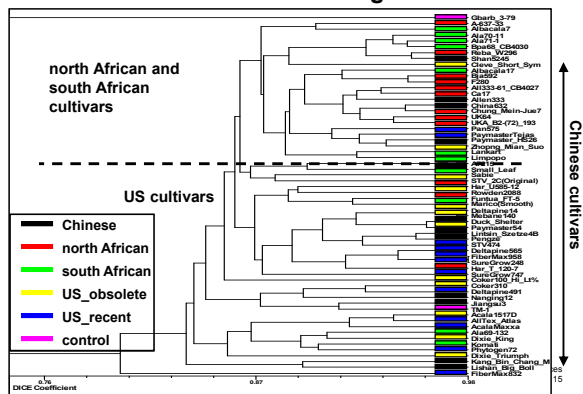
ARS Cotton Research (Total funding: \$49.8 million US per year)



Unique Features of ARS Cotton Research in the U.S.

- ✓ Cotton Germplasm Collection
 - ✓ 9,000+ genetic accessions (cultivated and non-cultivated)
 - ✓ Removing redundancy
 - ✓ Resource for geneticists around the world

African cultivars and US cultivars form clusters; Chinese cultivars have wide range



Unique Features of ARS Cotton Research in the U.S. (cont'd)

- ✓ Cotton Ginning Laboratories
 - ✓ 3 laboratories do applied research on ginning technology
 - ✓ Responsible for most of the advances in ginning technology of the last 50 years

Unique Features of ARS Cotton Research in the U.S. (cont'd)

✓ Integration

- ✓ Research spans from field to fabric, all in one organization
- ✓ Proposed changes in cotton production practices can be evaluated economically, including effects on spinning and weaving

Unique Features of ARS Cotton Research in the U.S. (cont'd)

✓ Biotechnology Risk Assessment

- ✓ Long-term experiments on ecological safety require stable funding and a national approach
- ✓ Monitoring of insect resistance to Bt for the Environmental Protection Agency

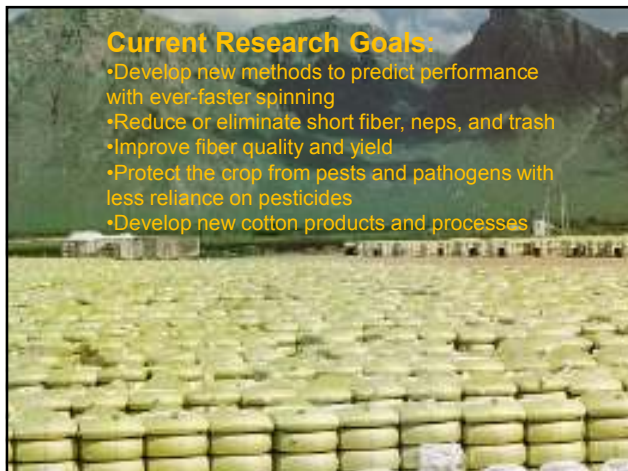
Goal of ARS Cotton Research

To Make U.S. Cotton Production and Processing Efficient, Sustainable, Safe, and Highly Competitive



Current Research Goals:

- Develop new methods to predict performance with ever-faster spinning
- Reduce or eliminate short fiber, neps, and trash
- Improve fiber quality and yield
- Protect the crop from pests and pathogens with less reliance on pesticides
- Develop new cotton products and processes



ARS Cotton Research

Cotton Breeding and Genetics

- Genetic and Cultural Practice Improvement for Sustainable Cotton Production - Florence
- Improving Cotton yield and Fiber Quality through Genetics and Management - Stoneville
- Improving Cotton Fiber Quality through Conventional and Molecular Approaches - College Station
- Characterization of the ARS Cotton Germplasm Collection - College Station
- General Cotton Genetics and breeding Research - MS State

Management of Cotton Insect Pest, Nematodes, and Diseases

- Cotton Leaf Curl Virus Research
- Fusarium wilt and Program Research
- Sustainable Pest Management Strategies

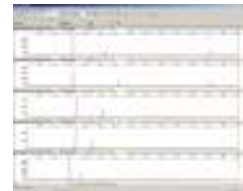
Cotton Ginning, Quality and utilization

- Enhancing Quality, Utility, Sustainability Environmental Impact of Cotton and its By-products through Improvement in Harvest/Gin Processing
- Cotton Production and Processing Research
- Cotton Structure and Quality
- Cotton Ginning Research as it Relates to the US Cotton System
- Value-added Products from Cotton Seed

Cotton



Molecular Marker Uses



Selecting for useful traits

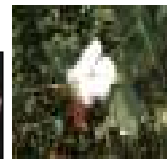


Nectary



Eliminating nectaries that attract insects

Tracking the transfer of useful traits from wild relatives



Improving fiber



Nematode Resistance



For More Information on ARS's Research on Crop Production and Protection

<http://www.ars.usda.gov/Research/Research.htm>

Roy A. Scott

National Program Leader, Crop Production & Protection
Oilseeds, Cotton and Bioscience

United States
Department of
Agriculture
5601 Sunnyside Ave.
Room 4-2216
George Washington Carver Center
Beltsville, MD 20705
Agricultural
Research
Service
301-504-4870 (voice)
301-504-6191 (fax)
roy.scott@ars.usda.gov