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Texas; Connecting the Old West to the New East. May, 2006.

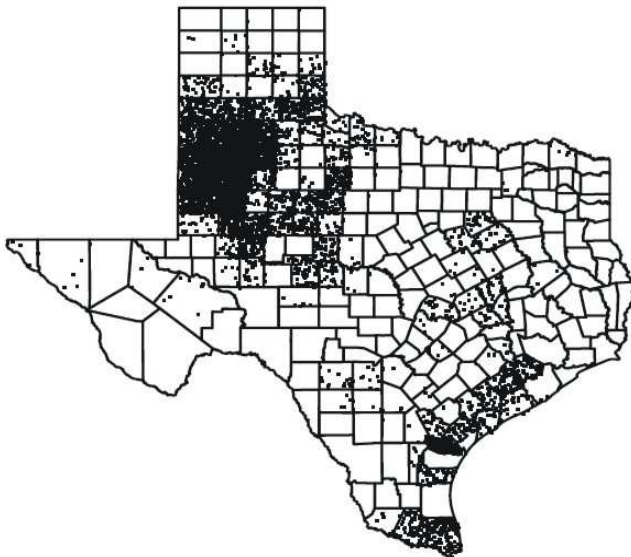
Trends and Prospects for Texas Cotton

John R. C. Robinson and Dean A. McCorkle

This article discusses the trends in Texas cotton plantings, yield, lint quality, and statewide economic impact. Cotton has been grown in Texas for almost two hundred years, and the State has led the U.S. in cotton production since the 1880s. Over this long history, Texas cotton growing practices have adapted to different opportunities and challenges. The process of change has continued in recent years, creating opportunities for improved productivity on the one hand, and possibly inducing regional restructuring on the other.

Texas Production Regions. Texas cotton plantings are widespread, but are concentrated in opposite corners of the State with very different growing conditions and production systems. The heaviest concentration of cotton acreage in Texas (and the U.S., and the world) lies in the northwestern High Plains region (Figure 1). This region is characterized as arid with variable rainfall, intermittent dust and hail storms, and limited heat units. Production systems vary between rainfed and irrigated, with the latter increasingly adopting higher level technology. The next most concentrated area of Texas cotton production is along the Gulf of Mexico. The Gulf Coast climate varies considerably from semi-arid to humid as one travels up the coast. Production systems in the coastal region in some ways resemble those in the U.S. Delta states.

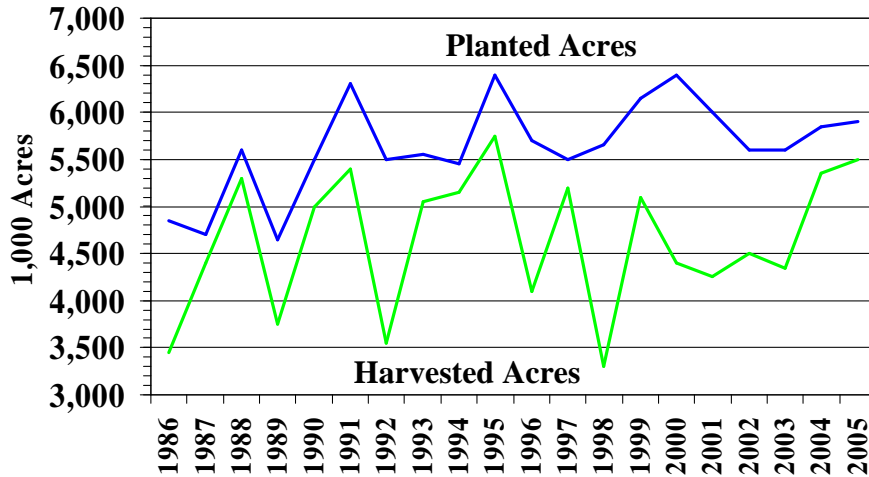
Figure 1. Regional Concentration of Texas Cotton Plantings, 2004 (Source: USDA/TASS).



Texas cotton planted and harvested area (in acres) is shown over the last twenty years in Figure 2. Texas typically accounts for roughly one third of the U.S. planted area. Variations in Texas cotton plantings during those two decades occurred for a variety of reasons, including profitability of cotton relative to substitute crops and farm program benefits (or constraints).

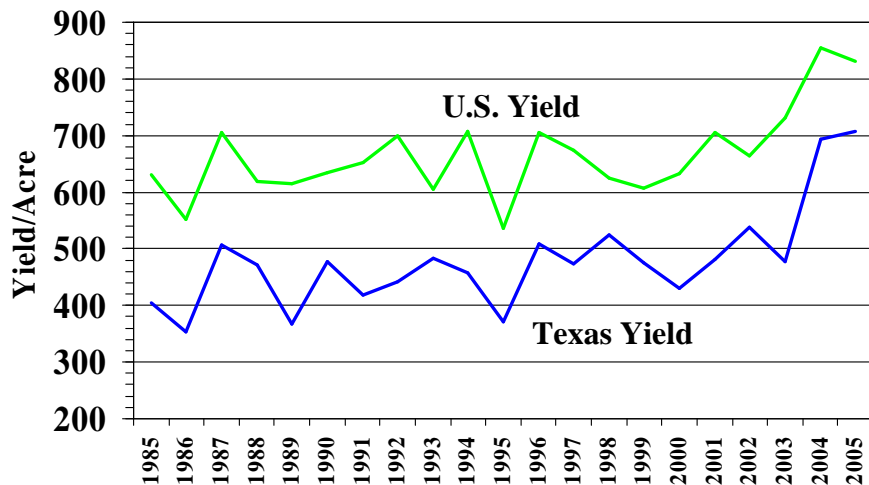
Harvested acres, as a percentage of planted acres, also varies considerably and is heavily influenced by the incidence of dry weather. For example, a severe drought in 1998 resulted in an abandonment of planted acres in excess of 40% statewide, with these losses concentrated in non-irrigated regions.

Figure 2. Texas Upland Cotton Planted and Harvested Acreage



Yield and Quality. As a result of the variable weather in all regions of Texas, the State's cotton production has a history of variable yields and quality. Historically, both yield and quality have trended below the U.S. average (Figure 3), although the gap has been closing for both yield and quality as Texas producers adopt higher yielding varieties with better quality attributes. In addition, the eradication of the cotton boll weevil has created potential for late-season productivity that previously did not exist. Therefore, when the conditions are optimal, e.g., timely summer rainfall in northwestern Texas during the last two growing seasons, Texas can experience record-breaking yields (Figure 3, for the years 2004-05).

Figure 3. Texas and U.S. Yield (lb/acre) for Upland Cotton



Tables 1 and 2 provide more evidence of the improving trend in Texas cotton lint quality. Many lint qualities vary with variable weather conditions (e.g., growing season drought or harvest time rainfall). The 2005 growing season was exceptionally good for both yield and quality, so the high values for lint strength (Table 1) and staple length (Table 2) are not surprising. However, the values in Table 1 and 2 document improvement in these qualities for Texas regions relative to the U.S. Delta region (i.e., Memphis). This improvement is likely due to the adoption of new varieties, successful eradication of the boll weevil, and relatively good growing conditions.

Table 1. Average Cotton Strength for Three Texas Regions and Memphis, TN.

Class Office	2000	2003	2004	2005 ^{1/}
Lamesa, TX	26.9	29.1	28.3	28.7
Lubbock, TX	27.0	29.1	28.5	28.8
Corpus, TX	27.2	30.6	31.3	30.2
Memphis, TN	27.2	28.0	28.4	29.2

^{1/} As of March 9, 2006 (source: USDA/AMS)

Table 2. Average Cotton Staple for Three Texas Regions and Memphis, TN.

Class Office	2000	2003	2004	2005 ^{1/}
Lamesa, TX	33.1	33.9	33.9	34.9
Lubbock, TX	32.9	34.2	34.4	34.8
Corpus, TX	33.9	35.4	36.0	34.7
Memphis, TN	34.2	34.6	34.7	34.7

^{1/} As of March 9, 2006 (source: USDA/AMS)

Economic Impact. The current economic impact of cotton in Texas is substantial (Table 3). The gross value of Texas cotton production in 2005 was estimated at \$2.07 billion (excluding government payments). “Economic Output” in Table 3 is a measure of broader business activity, i.e. sales revenue. Direct economic output is equal to the gross value of Texas cotton production. Indirect economic output (\$1.19 billion) is business sales that occur in other sectors of the economy that provide inputs into the production of cotton (such as fertilizer sales, seed, chemicals, equipment, fuel, etc.). Induced economic output (\$0.73 billion) is business activity that occurs primarily because of household spending of the income generated from cotton production (i.e. restaurants, groceries, clothing, etc). “Value Added” is net income resulting from the production of cotton and includes net proprietary income (net farm income, net income for other business that supply inputs to cotton), wages, and a few other minor income items. “Jobs Supported” refers to full time, part time, and self employed. This level of gross income (\$2.07 billion) supports an estimated 23,191 jobs in the Texas cotton production sector (i.e., farm level jobs), another 17,901 jobs indirectly (input suppliers), and another 7,553 induced jobs resulting from household spending, for a total of >48,000 jobs supported.

Table 3. Statewide Economic Impacts of Cotton in 2005

Value of Production (2005 TASS)	
Lint	\$1,771,200,000
Cottonseed	\$ 307,040,000
Total	\$2.07 billion *
*Does not include any government payments	
Economic Output	
Direct	\$2.07 billion
Indirect	\$1.19 billion
Induced	\$0.73 billion
Total Output	\$4.00 billion
Value Added (income)	\$1.76 billion
Jobs Supported	
Direct	23,191
Indirect	17,901
Induced	7,553
Total	48,645

Summary. Cotton in Texas represents an important cash crop with relatively few alternatives. The magnitude and density of the Texas cotton industry implies a very large regional fixed investment in cotton-related human capital, farm level machinery, gins, compresses, and warehouses. The economic implications of this industry structure imply only marginal changes in cotton plantings the near term to intermediate time period. Continued investment in more stable and productive irrigated production systems will keep certain regions of Texas competitive in the global market. The biggest threat from competition, lower prices, or reduced government support lies to the more variable, non-irrigated production regions. Since these regions are large in Texas, a decline of cotton production would seriously impact local economies in the non-irrigated regions.