Cotton Production in Texas

Chapter 1

Cotton production has a long and storied history in Texas and the United States. In 1745, Spanish missionaries reported that indigenous tribes were growing wild cotton with a staple of 1/8 to 1/4 inch, compared to current varieties that range from 1 to 1.5 inches in North America. By the time of the War of 1812, Georgia was producing 50 percent of the cotton crop in the United States.

Cotton farming was introduced to Texas in 1822, when Stephen F. Austin brought the first settlers to the state. These pioneers settled primarily in the southeast part of Texas and raised cotton in the river bottoms of the Brazos and Colorado rivers. The first gin in Texas was established near Hempstead in 1827. When the rail system expanded, cotton production moved west.

By 1860, Texas ranked fifth in cotton production the United States, and by 1890, it led the nation. Cotton remains the leading cash crop for Texas farmers, generating $1.6 billion at the farm level annually and having a statewide economic impact of $5.2 billion.

Over the past 50 years, cotton acreage in Texas peaked at 12 million acres in 1951 and dropped to a low of 3.5 million acres in 1967. Since 1970, Texas producers have planted 5 million to 6 million acres of cotton annually.

Cotton production has changed dramatically since it was first introduced to Texas. It originally centered in regions that received more than 30 inches of rain a year. However, the introduction of the boll weevil into East Texas in 1899 prompted the cotton industry to migrate west.

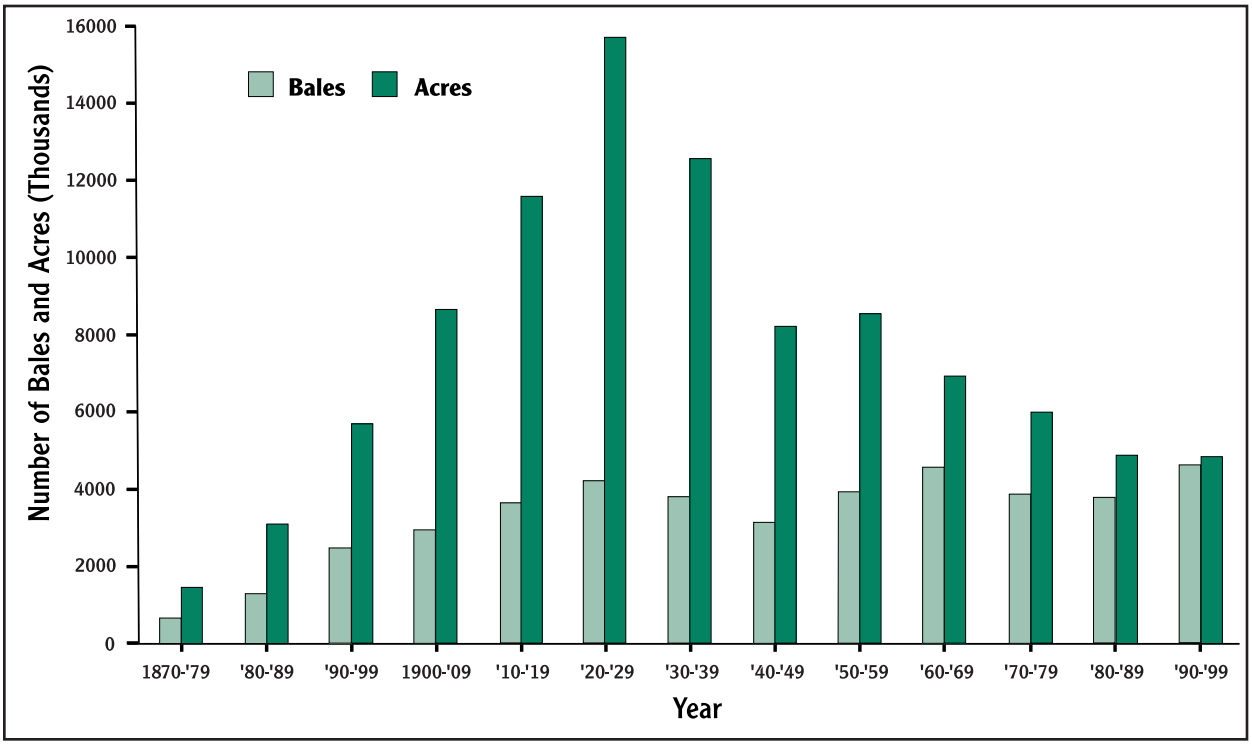

Figure 1-1. Ten-year averages, 1870-1999, for Texas cotton production and acreage.

Today, more than 60 percent of the state's cotton acreage is located in the High Plains of northwest Texas.

Cotton production in Texas can generally be divided into eight regions. Each region is distinct and has its own environmental and production characteristics, such as climate, soils, variety selection, irrigation and harvesting techniques.

The **Lower Rio Grande Valley** region, located at the southern tip of Texas, has the earliest planted cotton in the Cotton Belt as well as the first bale produced each year. Cotton is planted in February and March. Acreage fluctuates from 200,000 to 350,000 acres.

Of this acreage, 65 percent can be irrigated, depending on the availability of water. Irrigation has been very limited in the region over the past several years. The area primarily uses picker varieties, along with a few stripper varieties. Yields average 512 pounds of lint per acre.

Because of the subtropical climate, damage from insects is high, one of the major factors limiting yield and profit. Other factors limiting profitability include tropical storms in late summer, untimely rains, soil salinity, poor drainage and cotton root rot.

The **Coastal Bend** region, located between the Lower Rio Grande Valley and Upper Gulf Coast, was one of the first in the Cotton Belt to use the short-season production system. Cotton is planted in late February and March and harvested in August. Cotton production in the area is about 450,000 to 500,000 acres.

The region consists primarily of dryland production; however, irrigated acreage is increasing. The region primarily uses picker varieties and over the past few years has experienced very good yields and quality. Yields vary widely, depending on rainfall, with averages between 450 and 1,200 pounds of lint per acre.

The major factors limiting yield and profit are insect damage and unfavorable weather. During the harvest season, tropical storms also threaten production.

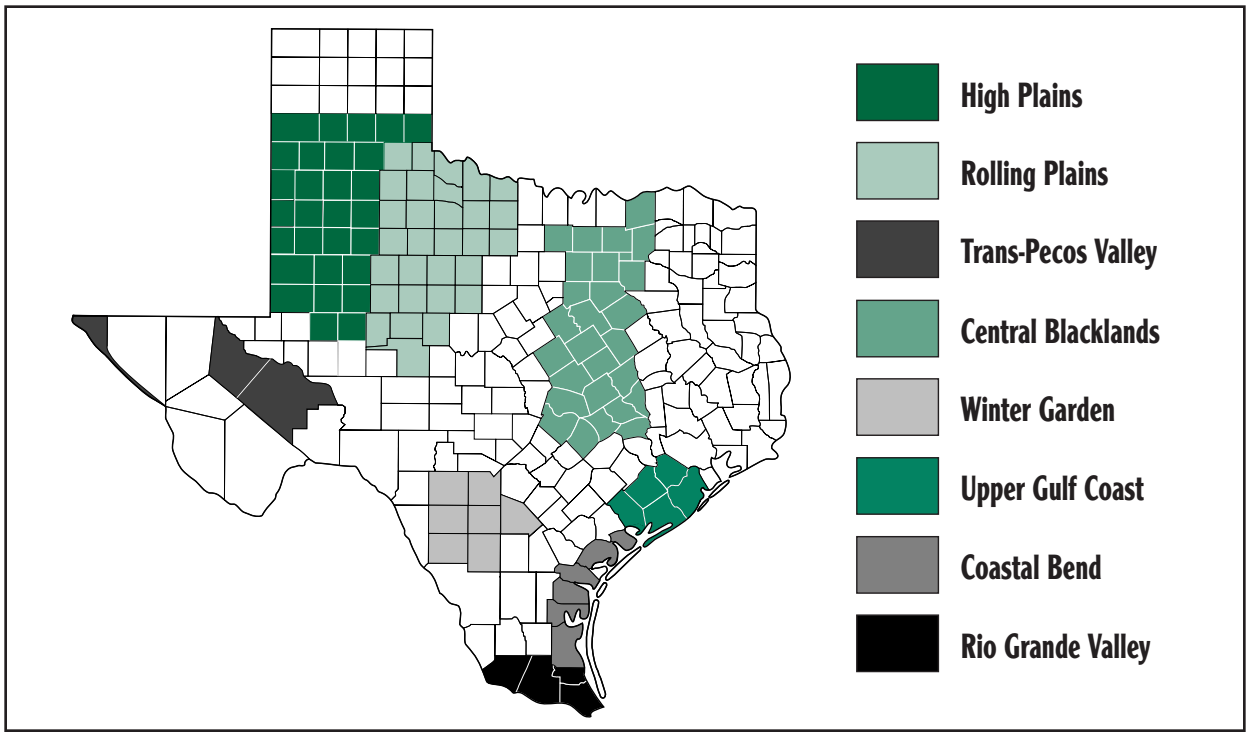

Figure 1-2. Major cotton production regions in Texas.

The **Upper Gulf Coast** region is similar to the Coastal Bend but receives more rain. Cotton is planted from mid-March to mid-April and harvested in August and September. Acreage ranges from 250,000 to 300,000 acres.

Although the region is primarily dryland, producers are developing irrigated cotton acreage. The varieties grown are mostly picker cotton, and most harvesting is done with a spindle picker.

Yields range from 500 to 1,000 pounds of lint per acre. Production can be limited by insect outbreaks as well as unfavorable weather during planting and harvest.

The **Central Blacklands** region stretches from Austin to north and east of Dallas. Cotton acreage ranges from 90,000 to 150,000 acres, is planted from late March through April and harvested in August and September.

The region consists primarily of dryland production but also includes irrigated acreage along the Brazos and Trinity River systems. The region primarily uses picker varieties that are stripper harvested.

Yields on dryland production range from 350 to 550 pounds of lint per acre; irrigated yields range from 750 to 1,100 pounds of lint per acre. Production is limited by late planting, poor rainfall distribution, insects and cotton root rot.

The **Winter Garden** region is located just west and south of San Antonio. Cotton acreage has plummeted over the past few years to a low of 6,000 to 10,000 acres. The area established its reputation as a high-yielding, high-input production region characterized by high-capacity irrigation. As water and production costs have increased, production has shifted to a short-season approach.

The crop is planted during March and harvested in August, with yields ranging from 600 to 1,100 pounds of lint per acre. The region uses picker cotton varieties. Production can be limited by late planting, poor rainfall on dryland acreage and insects.

The **Trans-Pecos Valley** production region is located in Far West Texas. Cotton acreage in this region ranges from 50,000 to 100,000 acres. The area has some dryland production, but most acreage is irrigated.

Production is a mixture of stripper, picker and long staple (Pima) varieties. The long staple production is located primarily in the Upper Rio Grande Valley near El Paso.

The crop is planted from April 15 to May 15; it is normally harvested in October and November. Yields range from 500 to 1,000 pounds of lint per acre. Limiting factors include high irrigation costs, salinity and insects.

The **Rolling Plains** production region is in west central Texas. Compared to the High Plains, this region has lower elevation and fewer irrigated acres. Cotton acreage ranges from 1 million to 1.5 million acres. Except for a few scattered areas of irrigation, most of the cotton is grown under dryland conditions.

The area practices a delayed, uniform planting to help control boll weevils and to take advantage of late season rainfall. For this reason, this region has the latest planting date in the state, from May 1 to June 15.

Harvest occurs in October and November, usually after the first killing frost, although harvest aids (chemicals to assist harvest) are widely used. Inadequate moisture and poor rainfall distribution limit dryland yields on stripper cotton to 250 to 315 pounds of lint per acre.

The **High Plains** production region is in the northwest region of Texas. Generally, 3 million to 4 million acres are planted, constituting more than 60 percent of the state's cotton acreage. Although about 60 percent of this acreage has some type of irrigation, well capacities have decreased over the past several years, and many systems do not support full irrigation.

The predominant varieties are stripper types, although some picker types are used in the southwestern part of the region. Cotton is planted in

May and harvested in October through December. Harvest aids are now widely used.

Irrigated yields average 500 to 1,500 pounds of lint per acre, depending on climate and irrigation capacity; dryland production averages 270 pounds of lint per acre.

Major production problems include a short growing season, sand and hail damage, declining water supplies, vascular wilts and seedling disease, and cool conditions during boll maturation.

This publication consolidates cotton production information for cotton producers, consultants and agricultural industry representatives in Texas. Because conditions vary across the state, few production techniques fit every situation. But those involved with cotton production can benefit from knowing about plant physiology, soil and water management and the proper use of crop protection chemicals. Differences in production systems across the state will be noted as appropriate.