

**PAKISTAN COTTON PRODUCTION  
EMERGES FROM DIFFICULT  
GROWING CONDITIONS**

**Ron Roberson  
USDA/FAS  
Washington, D.C.**

**Abstract**

Pakistan is expected to return as one of the major world suppliers of raw cotton in 1995/96, with production forecast to rise 31 percent from 1994/95. Currently, output is estimated at 8.5 million 480- pound bales, the second largest crop in the country's history. Favorable weather contributed to the large increase, but more important was the improvement in the control of insects and disease; mainly the bollworm, whitefly and leaf-curl virus (LVC). Farmers' success in controlling these problems is reflected in crop yields well above those for the last three seasons. Pakistan's yield reached 617 kilograms per hectare, equaling that of the United States in 1995/96, but well below the Pakistani record of 768 kilograms in 1991/92 when production was record large at 10.0 million bales.

**Production**

The 1995/96 season began under optimistic conditions with initial production forecast at 7.5 million 480- pound bales and later increased to 8.5 million bales (Table 1). This crop was preceded by three years of low production. For 1994/95 the output was a disappointing 6.5 million bales when an abnormally high infestation of bollworms drastically reduced production in the Punjab and severe floods reduced area in the Sindh. The unusually large populations of bollworms thrived due to late diagnosis and short supplies of appropriate pesticides. In the two years prior to 1994/95, LCV (Leaf Curl Virus) and whitefly reduced yields sharply.

**Yields**

During the last half of the 1980's, Pakistan's cotton yields steadily increased with the introduction and application of production-enhancing measures and high-yield-varieties (HYV) such as S-12 (Table 2). But after the record crop of 1991/92, with a national average yield of 768 kg/ha, cotton yield declined significantly, as the higher yielding varieties proved to be susceptible to LCV. As a result, national average yields dropped. In 1993/94 and 1994/95 yields were 488 kg/ha and 534 kg/ha, respectively. Not only had LCV damaged the crop causing farmers to reduce area devoted to HYV, but insect outbreaks had occurred as well.

For the 1995/96 crop, HYV's such as S-12 have been replaced for the most part with more disease resistant but lower yielding varieties. Even with the new varieties, crop yields depended heavily on farmers being able to effectively control whitefly, jassids and bollworms. The occurrence of LCV was minimized with the new varieties but a successful campaign to increase production would depend upon the proper use of pesticides.

To accomplish this task, the Government of Pakistan (GOP) strengthened agricultural extension activities in the cotton growing areas and also used media campaigns on national television. Both activities have had good results in making farmers aware of the LCV and insect pest problems. The GOP continued these activities throughout the 1995/96 season, going so far as broadcasting the names of highly effective chemicals on national television for the pests or diseases prevailing at that time. These activities were supported by the expansion of agricultural extension staff to alert and assist farmers.

**Inputs**

The continuing concern over LCV in Pakistan has led farmers to be careful in obtaining appropriate seed. LCV resistant varieties have been planted extensively, encompassing about half of total area in 1995/96. Growers usually procure about half of their seed requirements from the previous crop, buying it back from the gins and storing it for the next planting season. However, this year was an exception, as farmers procured significant volumes of LCV-resistant certified seed from reliable suppliers. The Punjab Seed Corporation provided certified seed to meet about one-third of the total requirement, while private sector trading companies supply the remaining needs. This year, farmers bought so much certified seed that companies sold all of their stocks.

Of greater concern in 1995/96 was the availability of quality pesticides to control the whitefly and the American bollworm. Local pesticide companies indicated that chemicals to treat bollworm were seriously limited, estimating that a single application on 75 percent of the country's fields would exhaust the supply. At the same time, Punjab scientists were predicting the possibility of a large population of the American bollworm for 1995/96. This estimation was based on prevalence of desirable weather during early part of the 1995/96 planting season which has favored their development in past seasons.

The whitefly ranks second to the bollworm in importance as a threat to the crop. However, the whitefly proved to be less of a problem this season than last year. Scientists and pesticide company representatives regularly travel-ling in cotton growing areas reported that the whitefly population was significantly less than in the past several years, as weather conditions restricted their development. There are a number of pesticides used to control the whitefly

population, but whitefly has developed some resistance to them. This is especially true when pesticides are applied at inappropriate concentrations or have been adulterated.

To address the serious problem with pesticide adulteration, GOP strictly monitored and controlled the sale of generic pesticides. In an effort to curb the sale of pesticides of this type, the major pesticide companies registered their dealers and retailers. Non-registered outlets were not allowed to sell their product. On June 12, 1995, the GOP amended the agricultural pesticide ordinance of 1975. Under this revised ordinance, a company or persons convicted of selling adulterated pesticides may be fined a maximum penalty of Rupees one million (about U.S.\$ 325,000) and imprisoned a minimum of three years, extendable up to seven.

Pakistani cotton farmers are fairly progressive regarding the use of improved management techniques. Cotton producers in Pakistan are fully aware of the yield enhancing impact of commercial fertilizers and plant protection chemicals. However, a ready supply of high-quality inputs is often a problem. Because of the production failures of the last three cotton crops and an attractive domestic market price, farmers used all possible measures to acquire the needed inputs necessary to produce a good crop.

### Crop Area

Harvested area for 1995/96 increased 13 percent as bullish prices and the low incidence of Leaf Curl Virus (LCV) in last year's crop encouraged farmers to sow additional area (Table 1). Area that was lost to heavy rains in the Sindh for 1994/95 was recovered and cultivated. In the Punjab, farmers switched from sugarcane to cotton. In 1994/95 cotton area had declined in Punjab in favor of sugarcane. But farmers faced severe problems selling the sugarcane at harvest, experiencing delays in the start of the crushing season and in receiving payments from the sugarcane companies. The dissatisfaction with this situation and high cotton prices led to larger plantings of cotton in 1995/96.

The planting season in Sindh province is from mid-April through mid-May. In the Punjab, planting occurs in stages. Early planting is May 15-31, mid-season planting is June 1-15 and late planting occurs from June 15 through the first week of July. Normally, more than 80 percent of Pakistan's cotton is planted in Punjab province. Harvest begins in the Sindh in late-July and early-August, but stretches through December in the Punjab. The bulk of the cotton, which is all hand picked, is harvested by the end of November.

### Production Policy

Pakistan's cotton production policy centers on government-issued support prices for cottonseed and lint.

These supports, however, serve only the limited role of setting rock-bottom floor prices. With current market performance, they have little impact on rural production decisions. Strong domestic and export demand for raw cotton in recent years has lifted market prices well above the support level, benefitting both farmers and cotton gins. For example, during 1994/95, the average open market seed price was twice the support price of Rs. 423 per 40 kgs. Similarly, the average open market lint price in 1994/95 was nearly double the 1993/94 rate (Rs. 2200 per 40 kgs vs Rs. 1160). Several factors contributed to this robust price hike: strong demand from the domestic spinning industry, the domestic crop shortfall, free trade policy for the import and export of cotton, and tight world supplies.

Currently, farmers are receiving prices comparable to the world market rate due to continued bullish demand, and this is expected to continue. In the event cotton prices fall below the support level, owing to a significant surplus, the Cotton Export Corporation is responsible for boosting market prices through direct purchases.

### Summary

Pakistan appears to have regained its production momentum that was cut short following the record production of 10.0 million bales in 1991/92. Pakistan accomplished this by new varieties, chemical controls, and expanded agricultural extension service activities. These accomplishments have enabled the country to return to a net exporter status in 1995/96.

Based on the 8.5 million bale crop, Pakistan is expected to export 1.2 million bales during 1995/96. This is significantly higher than the 0.3 and 0.1 million bales exported during 1993/94 and 1994/95 when the cotton crop was recovering from insect and disease problems. This could have ramifications for U.S. exports in 1995/96 as Pakistan regains its trade share of their traditional markets of Indonesia, Thailand, Bangladesh, and Japan. During the years of falling Pakistani production, the U.S. gained a significant portion of the Pakistani trade to these markets. Also, U.S. exports to Pakistan will drop in 1995/96 from its large growth over the past three years.

Table 1: Cotton Harvested Area, Yield, and Production by Province in 1,000 hectares, 1,000 Bales and kg/ha

<b>1993/94</b>			
Province	Area	Production	Yield
Punjab	2,249	5,096	493
Sindh	<u>555</u>	<u>1,186</u>	<u>465</u>
*Total	2,805	6,282	488
<b>1994/95</b>			
Province	Area	Production	Yield
Punjab	2,244	5,040	537
Sindh	<u>406</u>	<u>960</u>	<u>515</u>
*Total	2,650	6,500	534
<b>1995/96</b>			
Province	Area	Production	Yield
Punjab	2,420	7,100	639
Sindh	<u>580</u>	<u>1,400</u>	<u>526</u>
*Total	3,000	8,500	617

\*Totals may not add because of small amount of cotton produced in the North West Frontier Province and Balochistan.

Sources: 1993/94 and 1994/95: Ministry of Food, Agriculture & Co-operatives; 1995/96: Office of the Agricultural Attache, Islamabad and Washington, D.C. analyst.

Table 2: Average Yield of Cotton By Province and Country Average (Kilograms per Hectare)

Year	Punjab	Sindh	Average
1985/86	555	401	515
1986/87	589	348	527
1987/88	638	371	572
1988/89	602	334	569
1989/90	623	334	560
1990/91	681	356	615
1991/92	849	435	768
1992/93	574	439	543
1993/94	493	465	488
*1994/95	534	536	543
**1995/96	639	526	617

\* Estimate

\*\*Forecast