



Pima Cotton Planting Now At All-Time High

This year, cotton growers planted Pima cotton on about one-fourth more Arizona acres than ever before. Nearly all of it is an improved variety, Pima S-6, developed by Dr. Carl V. Feaster and first released in 1983.

Pima is a type of cotton that has longer fibers and higher prices than other cotton. Arizona grows more of it than any other state. Its jump in acreage this year resulted largely from loosening of a federal acreage-allotment program.

Feaster has released four new varieties of Pima cotton since 1960, each with better yields than its predecessor. He is a Phoenix-based cotton breeder for the U.S. Department of Agriculture and the University of Arizona.

Pima S-6 has yielded 4 to 18 percent more cotton than the previously dominant variety, Feaster's Pima S-5, in controlled comparisons. It also matures about 10 days earlier. That could save water for growers who irrigate it fewer times, Feaster said.

The quick switchover from the old variety means farmers and advisers are still finding ways to take full advantage of the new variety's potential. For example, bolls of Pima S-6 are susceptible to pink bollworm damage one week longer than S-5 bolls are, so UA entomologist Dr. Roger Huber is working with growers to maximize the new variety's defenses against that pest.

Meanwhile, Feaster is working on the next generation of improved Pima varieties.

Dr. Carl Feaster checks a test variety of Pima cotton. (Photo by R.G. Fowler.)

Demand for Longer Fibers

Pima cotton's fibers, classed as "extra long staple," are in demand for making strong thread and fine fabric, so farmers can usually sell a bale of Pima cotton for about one and a half times what they get for a bale of the more common "upland" or "short staple" class of cotton.

Until this year, a federal allotment program had controlled the amount of Pima cotton planted.

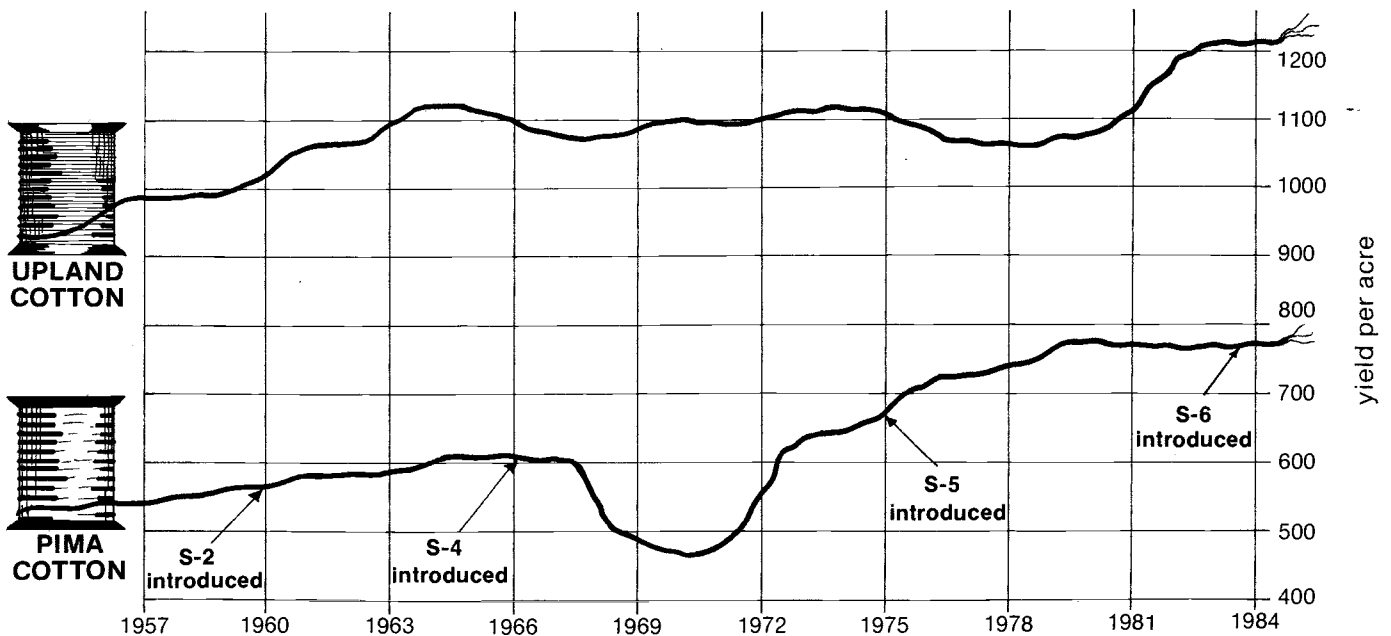
"Now, the lid is off," said Sam Stedman of Casa Grande, cotton specialist and agricultural agent for the university's Cooperative Extension Service. Arizonans' plantings of Pima cotton swelled to 58,000 acres this spring, compared with a previous high of 44,500 acres and a 10-year average of 36,700 acres, according to the Arizona Crop and Livestock Reporting Service. Pima cotton accounts for 11 percent of Arizona's total cotton acreage this year.

Most of the 1984 increase comes on farms that have grown Pima cotton in the past, rather than from new growers, reported County Agent Jim Armstrong of Pima County and Stedman of Pinal County. Graham, Maricopa, Yuma and Cochise counties also produce Pima cotton.

Under the old system, farmers did not grow more acres of Pima cotton than they were allowed under federal allotments based on previous years' crops. The allotments themselves acquired a value in trade. The new federal program offers target-price and loan-price guarantees, like the programs for upland cotton and several other crops. Growers can qualify for deficiency payments if the market price drops below the target price. Loan prices apply if a farmer uses his crop as collateral for a federal loan.

This year, the price-support program was available to growers who cut back their acreage of Pima cotton by 10 percent. However, many growers chose, instead, to pass up those incentives in favor of the chance to grow more acres of the high-price cotton this year and possibly to increase their acreage base for federal programs in the future.

Stan Gladden, a Marana-area farmer, is growing Pima cotton for the first time in three years. He planted Pima S-6, but saw most of his crop



damaged by hail. Gladden predicted that, with the changed federal program, "You're going to see most of the long-staple production shifting to the higher-producing areas — out of Pima County and up towards Pinal and Maricopa."

An Arizona-Born Crop

As its name suggests, Pima cotton is an Arizona-born crop. The late Dr. Walker Bryan, a University of Arizona plant breeder, developed it. He released Pima S-1 in 1953. Arizona usually grows about half of the national Pima acreage, with New Mexico and the El Paso area of Texas contributing the other half.

The trade-off for higher fiber quality is lower yield, compared with other cotton. Over the past five years, Arizona farmers have harvested an average of 762 pounds per acre of Pima cotton and 1,171 pounds per acre of upland cotton.

The difference would be greater if not for Feaster's work. He released Pima S-2 in 1960, Pima S-4 in 1966 and Pima S-5 in 1975.

While commercial yields for upland cotton have held about steady for the past 25 years, commercial yields for Pima cotton have increased after each new variety from Feaster has been adopted by growers. Overall, Arizona's yields of Pima increased 37 percent between the period of 1955-1961 and the period of 1976-1982.

"We've made some drastic improvements in the heat tolerance of these varieties," Feaster said as one explanation for their yield potential.

The newer varieties also can take advantage of richer growing conditions than old Pima varieties. "In years gone by, people put their Pima on the poorest land they had because it had a tendency to grow very rank," said Feaster. "I don't think that's true anymore. . . . We're getting close to the same demands for soil and fertilizer as upland has. You can still overwater Pima easier than upland, though."

Susceptible to Pink Bollworm

Huber, the entomologist, said, "On Pima cotton, the major problem is pink bollworm, . . . but S-6 is quite different from S-5 in susceptibility." The worm — actually the larva of a moth — drowns inside the wet boll if it enters an S-5 boll that is younger than two weeks. Young S-6 bolls are drier; pink bollworms can survive in S-6 bolls as young as one week. In both varieties, bolls five weeks old or older have hulls tough enough to keep bollworms out.

On the other hand, S-6 plants mature faster than S-5 ones, which may give growers more planting-date flexibility, said Huber. He is working on evidence that late-planted cotton has better season-long tolerance to pests than earlier plantings, for planting dates within a normal range.

Several Pima cotton growers are helping Huber collect data this year to get a better understanding of the planting-date effect on pest tolerance. Farmers and county agents in several parts of the state are also helping Feaster test prospective varieties in his breeding program.

One fast-maturing and short-statured experimental variety might fit late planting dates and closely spaced rows, said Feaster. It might be especially helpful in higher-elevation areas such as in Graham County, where germination can be hampered by early-spring coolness.

Higher yield is still the priority of Feaster's breeding program, but shorter-season varieties may provide the side benefits of savings on water and on pest control costs, he said.