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University of Arizona
College of Agriculture
Agricultural Extension Service

The ABC of King Cotton



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Extension Circular No. 75
January, 1933

PUBLISHED BY
University of Arizona
TUCSON, ARIZONA

University of Arizona

COLLEGE OF AGRICULTURE
AGRICULTURAL EXTENSION SERVICE

P. H. ROSS, DIRECTOR

Cooperative Extension Work in Agriculture and Home Economics, the University of Arizona College of Agriculture, and the United States Department of Agriculture cooperating. Distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914

Foreword

EVERY WOMAN knows of the different qualities of cotton goods that can be bought but few realize that much of this difference is dependent upon the quality of the cotton as it grew in the field.

A good many years ago the best cottons were imported in the raw state from Egypt or in the form of manufactured goods from England. Today America grows cotton fully as good and in some cases better than that of imported cottons.

The housewife, if she wishes the best, needs no longer ask for imported fabrics! If she obtains products made from Arizona Pima long-staple cotton, she is buying the best. Furthermore, it is made from American-grown cotton and manufactured by American factories.



Cotton in the United States can be classified into three main groups, namely: Upland short staple, Upland long staple as represented by the Delta type, and American-Egyptian commonly known as Arizona Pima.

The above pictures show these three types of

cotton growing under comparable conditions in Arizona.

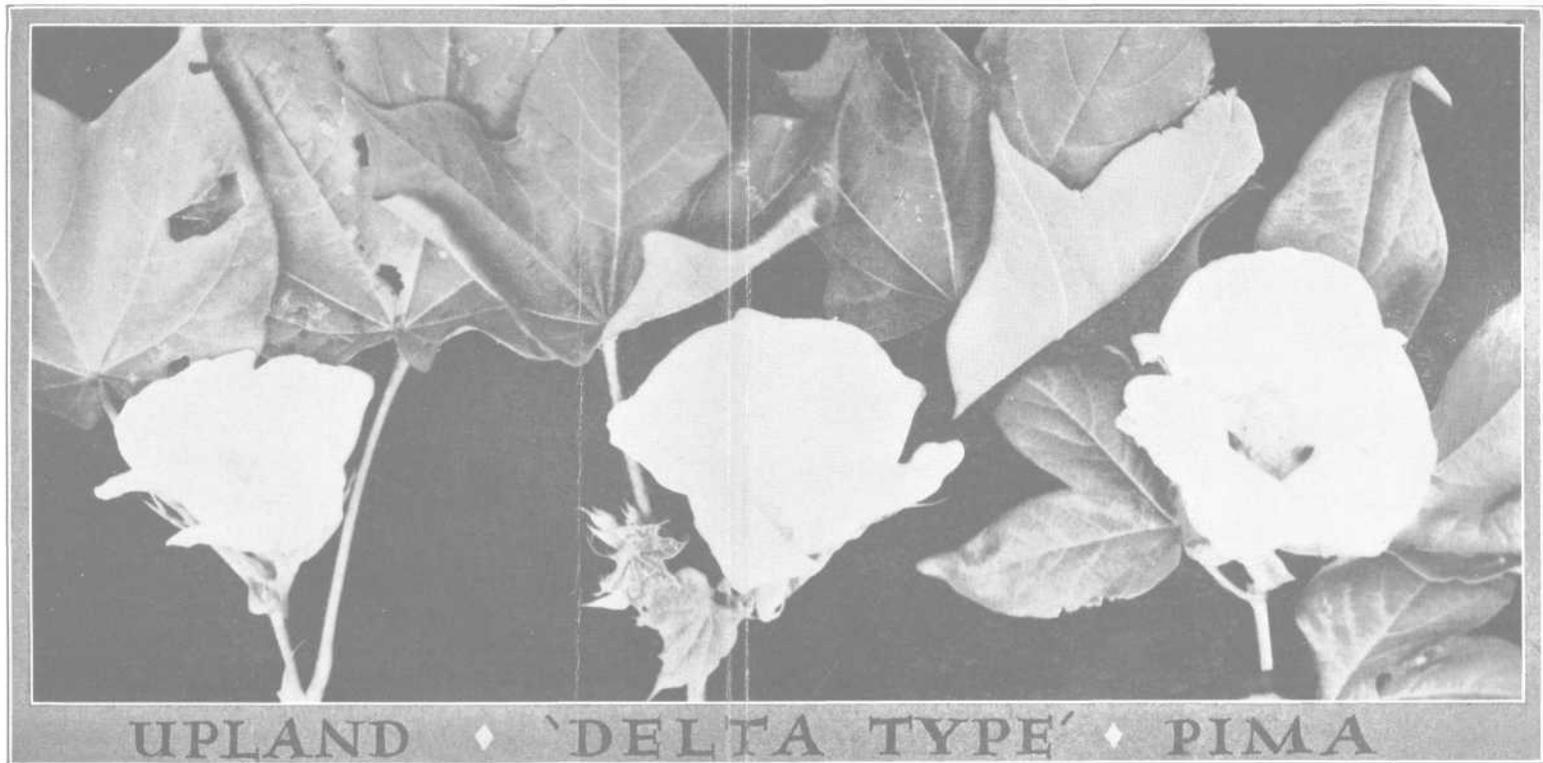
For illustrative purposes the Mebane variety has been chosen to represent Upland short staple, and the Delfos variety to represent "Delta type" Upland long staple.



The above pictures show the general characteristics of the different types of cotton grown in the United States.

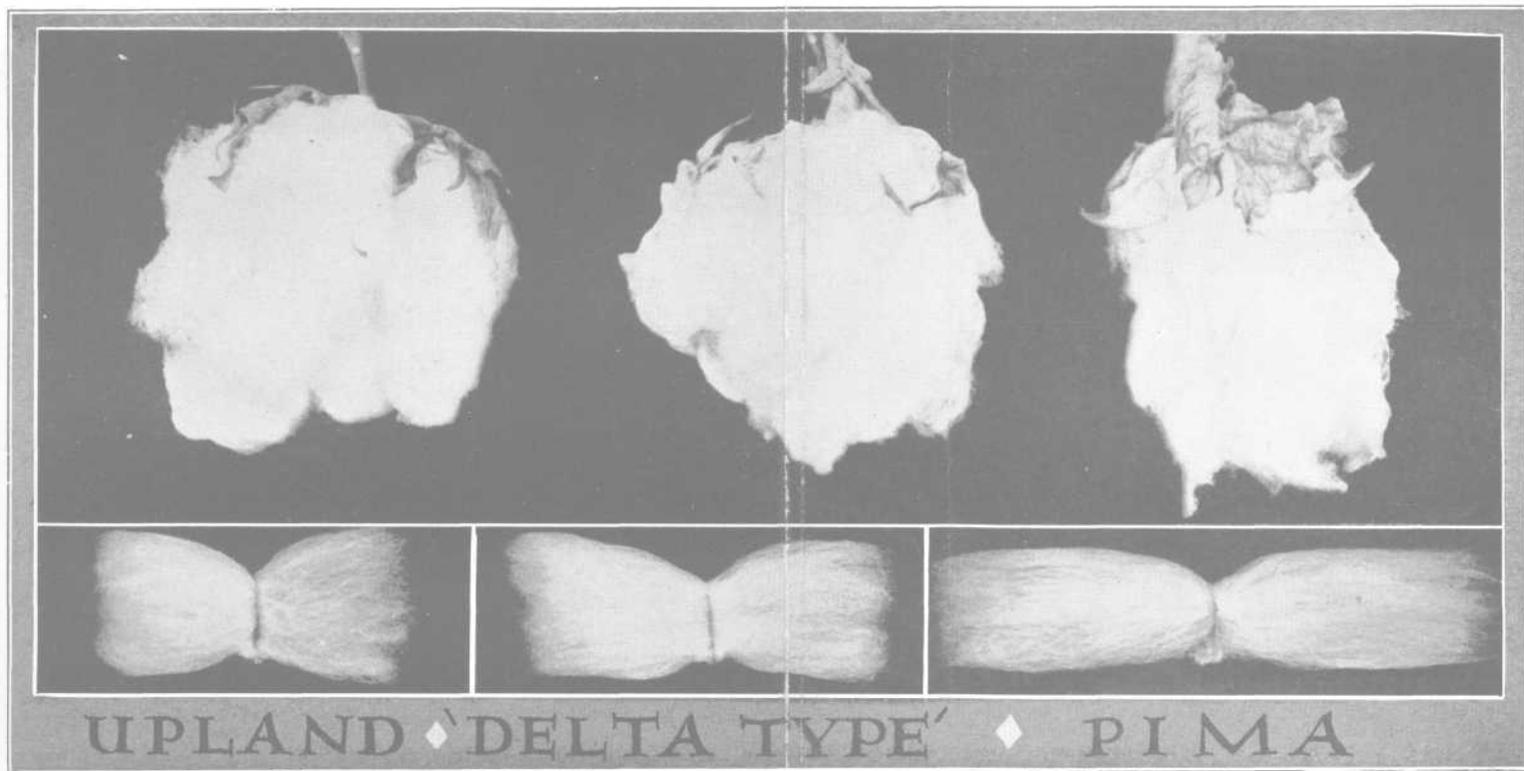
Ninety-four and nine-tenths per cent of the cotton grown in the United States in 1931 was of the Upland type with a cotton staple length of $1\frac{3}{16}$ to $1\frac{1}{8}$ inches, the average being $\frac{7}{8}$ inch. Five and one-

tenth per cent of the cotton grown in the United States the same year was of the "Delta type" with a cotton staple length of $1\frac{1}{8}$ inches to $1\frac{1}{4}$ inches or over. Only one-tenth of one per cent of the cotton grown in the United States was Pima with a staple length of $1\frac{1}{2}$ inches or over. Only one bale in every one thousand produced was Pima!



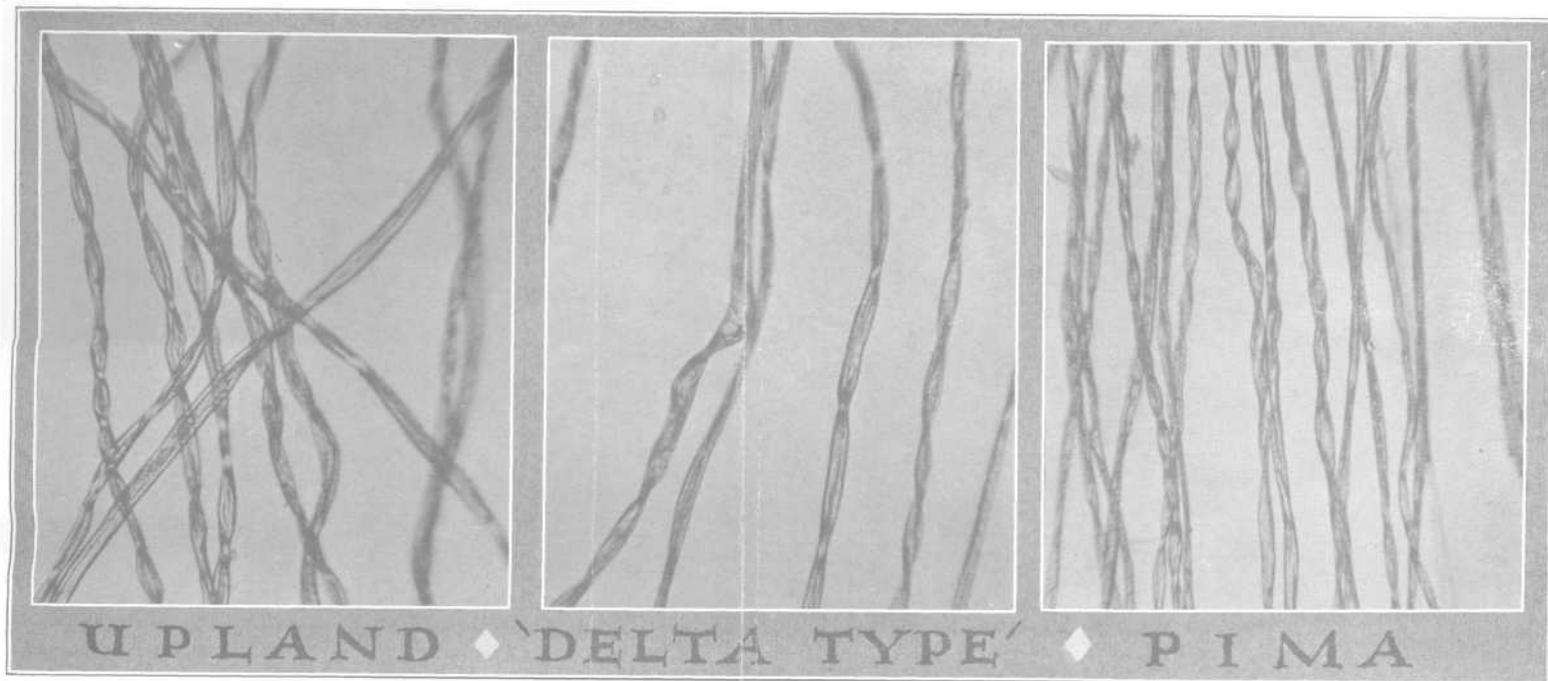
The flowers of Upland cottons are usually entirely white while those of Pima are a delicate yellow with a bright red spot at the base of the

petal. Few flowers are more beautiful than those of the cotton plant. Pima flowers are especially beautiful.



The beauty of the open cotton boll almost equals that of the flower. An individual seed with combed out lint is pictured below each boll type. In this

case the length of the lint of the Upland is $\frac{7}{8}$ inch, the "Delta type" $1\frac{1}{8}$ inches, and the Pima $1\frac{1}{10}$ inches.



Highly magnified lint of the common types of cotton. Note the difference in size!

Due to their small diameter and comparative greater length Arizona Pima cotton lint can be spun

into much finer yarns and threads than can other cottons.

Threads of the long staple cottons are much stronger than those of the short staple cottons.



The above illustrations show highly magnified yarns of the different types of cotton.

Not only can the threads and yarns of the longer-staple cotton be made smaller in diameter and of

greater strength than those of the shorter-staple cottons but they can be made more uniform in size. The longer-staple cottons spin into a smoother thread which frays less and is less likely to collect dirt.

Physical Tests on Cotton

RESULTS of the U. S. DEPARTMENT OF COMMERCE, BUREAU OF STANDARDS, PHYSICAL TESTS on Pima Cotton fabric and ordinary duck used for mail-train, post office catcher pouches.

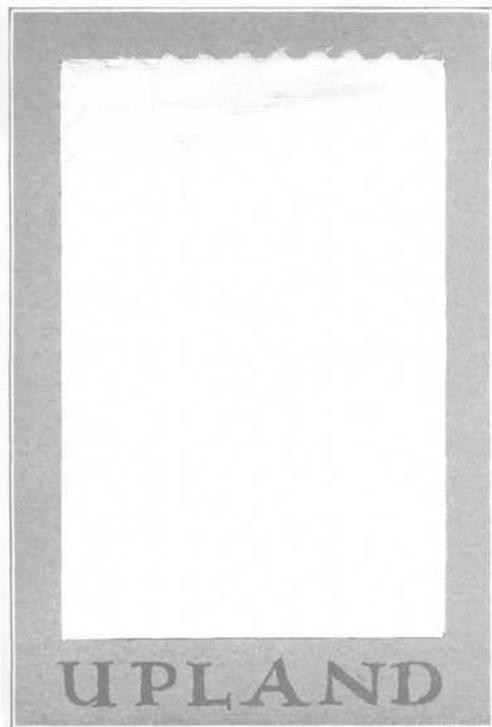
Type	Length of service	Threads per inch		Yarn count		Wt. per square yard Ounces	Breaking strength in pounds 1x1x3 grab	
		Warp	Filling	Warp	Filling		Warp	Filling
Pima	At start	36.5	24.0	7.0	13.0	17.7	470	245
Ordinary		36.5	24.0	7.0	13.0	18.2	285	224
Pima	End of one year	37.0	25.7	6.8	12.5	19.8	430	228
Ordinary		36.7	24.5	6.9	11.9	19.6	281	184

Note: After one year's service none of the Pima pouches had tears in them while ten of the thirty-three pouches of ordinary cotton had tears from 1 to 17 inches long.

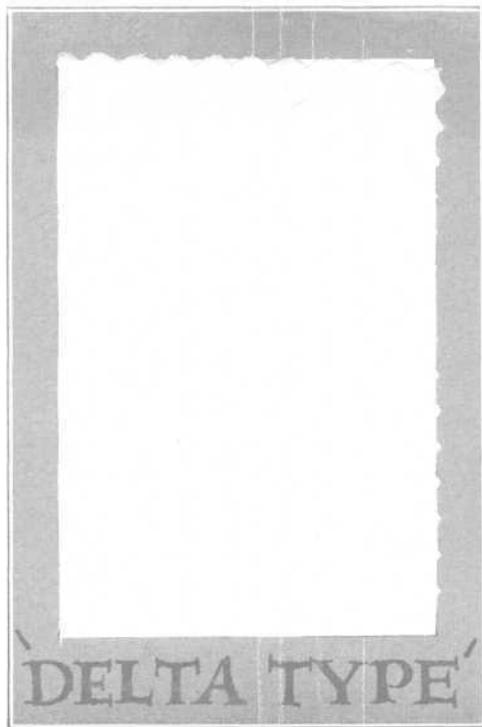
From Tech. Papers of the Bureau of Standards, No. 277.

Test on Pima and Ordinary Broadcloth (furnished by Lustberg, Nast & Co., Inc., N. Y.)

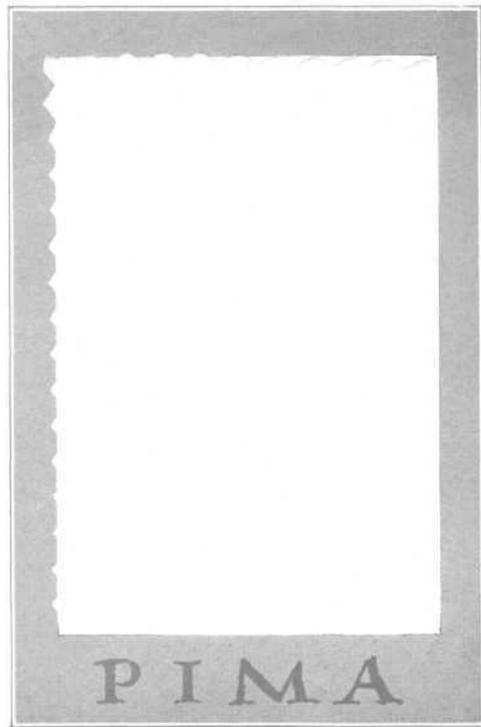
Kind of broadcloth	Weight per yard	Breaking strength in pounds	
	Ounces	Warp	Filling
Pima	3.6	91.5	32.5
Ordinary	4.0	72.0	29.0



UPLAND



DELTA TYPE



PIMA

Mercerized cloths keep their luster well. Fabrics that are made of the better kinds of cotton may actually become more beautiful with each washing.

A good grade of Pima cloth looks very much like silk but has all the advantages of a cotton material.

Some of the Most Common Uses of the Various Cottons

UPLAND	"DELTA TYPE"	PIMA
Absorbent cotton	Good shirts	Airplane wing and fuselage covers
Shirts	Tire fabrics	Balloon cloths
Mattresses	Tarps	Heavy duty truck tire fabrics
Tarps	Fine yarns	Extra fine:
Yardage goods:	Towels	Underwear
Gingham	Fire bed linens	Women's and children's dresses,
Prints	Sewing threads	blouses, collars and cuffs
Flannels	Tapestry	Infants' wear
Cretonne	Fine dress goods:	Girls' dresses
Calico	Sateen	Boys' suits
Cambric	Organdy	Aprons
Broadcloths	Nainsook	Smocks
Cheese-cloth	Broadcloths	Maids' and nurses' uniforms
Felt	Batiste	Men's shirts, shorts, and pajamas
Duck	Madras	Glass curtains
Oil-cloth	Lawns	Over-drapes
Linoleum	Duck	Pillow cases
Roofing	Table linens	Vanity-skirts
Clothing (General)	Automobile covers	Slip-covers
Rayons	Rubberized fabrics	Bedspreads
Paper	Infants' clothing	Fire yarns
Automobile covers	Children's clothing	Fine shirting
Rubberized fabrics	Women's clothing	Broadcloths
Imitation leather	Men's clothing	Marquisette
Gun cotton	Laces	Batiste
Burlap	Drapes	Organdy
Batting and wadding	Socks	Laces

History of Pima Cotton

The ancestors of Pima Cotton originally came from Egypt some 32 years ago and were brought to Yuma, Arizona. Here the United States Department of Agriculture, through selection, adapted this cotton to southern Arizona conditions until it was finally given to the farmers for production purposes. Its improvement did not stop there for the United States Department of Agriculture through the Experiment Station at Sacaton has improved it, by meticulous care and breeding, far in advance of its original parentage and has given to the farmer the result of this labor in the form of our present high quality Pima Cotton.

This is not, however, the culmination of efforts on already the best cotton in the United States, and possibly the world, for each year the Sacaton Station is working for improvement on this variety. Also the farmers of Pima Cotton are not idle, for through their organization, the Farm Bureau, in cooperation with the Sacaton Experiment Station and the Arizona Agricultural Extension Service, a

source of pure seed is maintained through vigilant roguing of the fields used for seed. Pure seed is one of the important requisites in the raising of high quality cotton.

The producers of Pima Cotton are untiring in their efforts to improve the quality of their product. Just recently a group of them have organized what is known as the Pima High Yield Club. This organization studies further the cultural methods for improving Pima quality and better methods of handling the raw product. In this project they have enlisted the help of the Arizona Agricultural Extension Service and the Experiment Station at Sacaton, Arizona.

The Pima Cotton farmer has earned a reputation for progressiveness as he has been instrumental in not only producing the best cotton in the United States, but has laid a sound foundation for a continued performance, and has enlisted the assistance of those public agencies which may be of help to him.