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TESTS OF VARIETIES OF COTTON IN 1909

BY

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AND

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TESTS OF VARIETIES OF COTTON IN 1909.

BY

J. F. DUGGAR AND E. F. CAUTHEN.

In 1909 thirty varieties of cotton were tested on plots on the Experiment Station Farm at Auburn. The cotton was left one plant in a hill in checks 3 1-2 by 3 1-2 feet. The fertilizer per acre consisted of 240 pounds acid phosphate, 120 pounds nitrate of soda and forty pounds of muriate of potash, making a total of 400 pounds.

The rather large yields (up to about 1 1-2 bales per acre) for this grade of naturally thin, gray, sandy land were attributable chiefly to plowing under with a disc plow early in April, 1909, a crop of crimson clover, which was then ten to eighteen inches high and beginning to bloom. Seed of crimson clover had been sown on this inoculated land September 9, 1908, and merely cultivated in between the rows of corn.

After making allowance for vacant hills, the varieties ranking highest in combined value of lint (at 14 cents) and seed (at \$25.00 per ton) were the following: Cook, No. 206; Cook, No. 221; Dixie; Hardin; and Poulnot.

Cook, No. 206, and Cook, No. 221, are both strains of Cook Improved that have been bred up at the Alabama Experiment Station. In yields of lint per acre, (793 pounds and 736 pounds), and in total value of seed and lint per acre, (\$125.58 and \$117.36), and in per cent. of lint (40.6 and 39.1 per cent.), they show superiority to the parent variety and to the other varieties tested.

These two improved strains of Cook suffered severely from anthracnose, generally called boll rot; so did all strains of Cook, whether improved or not; also Brown, No. 1, Blue Ribbon and Hardin. All varieties were attacked by this disease, but to a smaller extent than those mentioned.

Varieties of cotton in 1909, ranked according to total value per acre of seed and lint.

VARIETY	Actual Yield per Acre. (Stand variable)		Percentage of lint.	Corrected to Uniform Stand.	
	Lint	Value per acre of lint at 14c. and of seed at \$25 per ton		Lint per acre	Value per acre of lint at 14c. per pound and of seed at \$25 per ton
	<i>Lbs.</i>	<i>\$</i>	<i>Per ct.</i>	<i>Lbs.</i>	<i>\$</i>
Cook, No. 206	746.7	\$117.73	40.6	793.5	\$125.58
Cook, No. 221	687.9	109.29	39.1	736.1	117.36
Dixie	602.5	98.59	31.9	681.3	113.75
Hardin	693.2	110.22	38.8	693.5	110.96
Poulnot	602.6	96.69	37.1	666.6	107.35
Peterkin	654.9	104.68	37.8	658.1	105.63
Cleveland	634.5	102.77	35.4	643.1	104.65
Layton	661.2	104.83	39.4	659.1	103.85
Cook	607.9	97.43	37.3	629.0	101.26
Texas Bur	602.5	98.41	34.8	610.4	100.22
Brown, No. 1	597.2	95.87	37.4	606.1	97.72
Broadwell's Double Jointed ..	575.9	92.77	36.1	599.6	97.21
Georgia Best	586.5	94.37	36.6	591.5	95.60
Cook, No. 232	554.9	88.05	41.2	596.2	94.06
Toole	581.2	92.03	39.7	587.3	93.36
Truitt	575.9	94.61	33.1	565.2	93.35
Russell	522.6	86.89	31.4	556.5	93.13
Cook, No. 239	527.9	83.50	39.9	585.1	92.95
Blue Ribbon	521.5	85.37	31.6	541.5	90.54
Dillon	479.9	77.32	36.3	557.9	90.28
Gold Coin	533.2	85.50	37.2	545.4	87.78
Rowden	525.5	85.15	34.4	526.9	86.28
Strickland	485.2	79.22	32.6	514.0	85.20
Drake (Defiance)	474.6	77.97	36.2	506.1	83.59
Simpkins	511.9	82.79	35.7	512.7	83.33
King	474.5	76.77	35.6	502.4	81.69
Triumph	495.9	80.88	34.3	499.7	81.92
Allen Long Staple	469.2	78.62	30.4	485.8	82.00
Keenan	399.8	67.05	30.3	414.1	69.87
Trice	400.0	66.58	31.2	390.0	64.71

On account of the amount of anthracnose on the Station farm in 1909, and because the seed is believed to be one of the means of conveying this widely spread disease, the Station must decline to send out seed of these strains of Cook until further selection has been made for resistance to this disease.

Dixie, which ranked third in total value of products and fourth in yield of lint per acre, is a strain of wilt-resistant cotton developed by the U. S. Department of Agriculture.

In our variety tests in 1909, Dixie ranked third in value of products. The plant is compact and well supplied with fruit limbs, on which the bolls are borne close together. Its conspicuous merits are (1), its ability to thrive on land where most other varieties are killed by cotton wilt or black root, and (2), its productiveness, the results of scientific selection. The chief faults are lateness, small bolls and a low percentage of lint.

Hardin, which ranked fourth in corrected yield, is a small-bolled, semi-cluster variety. In none of the previous tests at Auburn has it shown conspicuous productiveness nor given nearly so high a percentage of lint, (38.8) as in 1909.

Poulnot is a semi-cluster variety, with medium to large bolls. It has usually ranked rather high in our variety tests. Its worst fault is its rather late maturity.

The other varieties that stood above the middle of the list in 1909 ranked, in value of total products per acre, in the following order: Peterkin (6th), Cleveland, Layton, Cook Improved, Texas Bur, Brown No. 1, Broadwell Double-jointed, Georgia Best, Cook No. 232 and Toole.

Fifteen other varieties ranked below all of those mentioned above. The ranking varieties in the last four variety tests at Auburn are as follows:

1905.	1906.	1908.	1909.
Toole	Cook	Dillon	Cook, No. 206
Cook Improved	Cleveland	Gold Coin	Cook, No. 221
Cleveland	Layton	Dixie	Dixie
Bancroft Herlong	Toole	Cook Improved	Hardin
Christopher	Poulnot	Hart	Poulnot

From this it appears that Cook was in the list of "five best" in each of three years; Toole, Cleveland and Poulnot, each occurred twice in the list of most productive varieties.

Each of the most productive varieties has some shortcoming, Cook is more susceptible than most varieties to

boll rot; Toole has small bolls; Cleveland readily drops the seed cotton from the burs; Dixie and Poulnot are late. Each grower can decide which of these faults he considers least objectionable, or whether, to avoid all of them, he will choose some good variety which, at this Station, has proved less productive,—for example, Triumph.

The earliest varieties grown in 1909 were Trice, Broadwell Double-jointed, Simpkins and King; the last two appeared to be practically identical.

A number of varieties additional to those mentioned in the table were grown for observation on areas too small to determine the yields per acre.

NUMBER OF DISEASED BOLLS.

Anthraxnose of the bolls, generally called boll rot, was so prevalent on the Station farm in 1909 that an unusual opportunity was offered to test the relative susceptibility of different varieties to this disease. The figures in the following table are based on counts made in winter of the total number of burs and of the number of bolls that had been so injured as to cause the loss of one or more locks. Diseased bolls as here reported consisted chiefly of those injured by anthracnose, but the figures include also smaller losses due to another disease. They also doubtless include a small number of bolls damaged by boll worms.

Percentage of diseased bolls; varieties arranged in order of freedom from diseased bolls.

<i>Varieties.</i>	<i>Per cent.</i>
Rowden	5
Cleveland	5
Dixie	5
Simpkins	5
Strickland	6
Trice	6
Drake Defiance	7
Truitt	7
King	7

Cook, No. 206	8
Broadwell Double-jointed	8
Blue Ribbon	8
Gold Coin	8
Texas Burr	9
Poulnot	9
Peterkin	9
Triumph	9
Toole	9
Russell	10
Dillon	11
Allen Long Staple	11
Layton	11
Keenan	11
Georgia Best	15
Hardin	17
Cook Improved	23
Cook, No. 221	28
Cook, No. 239	33
Brown, No. 1	33
Cook, No. 232	35

ADDRESSES OF GROWERS.

The Experiment Station has no seed for distribution. The seed used in the variety test was secured from the following parties:

Cook Improved—J. R. Cook, Ellaville, Ga.

Cook, Nos. 206, 221, 232, and 239—Alabama Experiment Station, Auburn, Ala.

Brown No. 1—M. L. Brown, Decatur, Ga.

Hardin—W. P. Letson, Glen Allen, Ala.

Dillon—U. S. Department of Agriculture, Washington, D. C.

Dixie—U. S. Department of Agriculture, Washington, D. C.

Keenan—U. S. Department of Agriculture, Washington, D. C.

- Poulnot—J. E. Bradberry, Athens, Ga.
 Drake's Defiance—J. C. McAuliffe, Harlem, Ga.
 Broadwell Double-jointed—J. B. Broadwell, Alpharetta,
 Ga.
 Blue Ribbon—South Carolina Experiment Station, Clem-
 son College, S. C.
 Allen Long Staple—Amzi Godden Co., Birmingham, Ala.
 Layton Improved—R. D. Layton, St. Mathews, S. C.
 Gold Coin—Excelsior Seed Farm, Bennettsville, S. C.
 Peterkin—J. A. Peterkin, Fort Motte, S. C.
 Cleveland—Alabama Experiment Station, Auburn, Ala.
 Rowden—Ben Crawford, Blake, Okla.
 Texas Bur—R. D. Tatum, Palmetto, Ga.
 Strickland—J. R. Strickland, Pleasant Grove, Ala.
 Triumph—Wade Brothers, Alexander City, Ala., and
 Chas. L. Gay, Montgomery, Ala.
 Georgia Best—G. W. Stone, Oxford, Ga.
 Russell,—A. M. Troyer, Calhoun, Ala.
 King—J. W. Mitchell, Youngsville, N. C.
 Simpkins—W. A. Simpkins, Raleigh, N. C.
 Trice—W. N. McFadden, Warren, Tenn.
 Toole—W. F. Covington, Headland, Ala.
 Truitt—G. W. Truitt, LaGrange, Ga.