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P. R. Henson

Robert S. Carr

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# Soybean Varieties and Dates of Planting in the Yazoo-Mississippi Delta

By

PAUL R. HENSON and ROBERT S. CARR

MISSISSIPPI STATE COLLEGE  
AGRICULTURAL EXPERIMENT STATION

CLARENCE DORMAN, Director

STATE COLLEGE

MISSISSIPPI

## Summary

Uniform soybean variety tests were located at Tunica, Stoneville, Anchorage, Sartartia, and Onward in 1945. Yields, other agronomic data, and the chemical composition of the strains and varieties have been summarized according to maturity.

The strains C101 and S100 have yielded significantly more than Macoupin, a commonly known commercial variety of these strains maturing in early September. The variety, S100, is taller, produces seed of slightly higher quality and matures approximately 10 days later than C101. S100 is low in oil, while C101 is a good oil bean containing approximately 2 percent more oil than S100. One serious objection to these early maturing strains when grown in the Delta is the low quality of seed produced. In the past, Delta farmers have reported low germination of Macoupin due to adverse conditions encountered at harvest and during the storage period. It is expected that similar problems will prevail with these strains.

Ogden is definitely the highest yielding variety of those normally maturing between October 1 and 15. The 2-year average yield of this variety at Tunica, Stoneville, and Anchorage, was 34.5 bushels or 40 percent more than the next highest yielding variety. The chief objection to Ogden is that it shatters on certain soil types and under dry climatic conditions at harvest. It has been observed that shattering is more severe on light or droughty soils and on heavier soils of low fertility. Even on soils where shattering usually occurs, many farmers prefer Ogden to such non-shattering, lower

yielding varieties, as Arksoy 2913 and Ralsoy.

In the breeding program under way at the Delta Station, plants coming out of crosses between Ogden and other varieties are being studied. It is hoped that strains carrying the high yield of Ogden and the non-shattering habit of Arksoy will be developed.

Of the varieties normally maturing the last half of October, Volstate and Roanoke, were equally productive. These varieties are similar in many respects and differ in that the oil content of Roanoke is slightly higher than that of Volstate. Both are non-shattering, erect growing, and of sufficient height to combine readily. Wood's Yellow has been quite productive in a number of locations in the Delta; however, it is low in oil and shatters under dry conditions. To farmers growing a large acreage of soybeans, the practice of planting the acreage to varieties of different maturity to increase the optimum combining period seems advisable, particularly in the production of soybeans for oil. The late maturing varieties have not been as productive or as high in content of oil as the better varieties of earlier maturity. The yields of strictly grain types, such as Mamotan, Mamloxi, Delsta, and Nanda have not been greatly different from those of the tall growing Louisiana strains, Acadian, L. Z., and Pelican. These late varieties are particularly well suited for interplanting in corn in that they usually mature after the corn crop is made. Appreciably lower seed yields were obtained from the hay varieties, Avoyelles, Gatan, Red Tanner, and from two vegetable varieties, Cherokee and Seminole.

# SOYBEAN VARIETIES AND DATES OF PLANTING IN THE YAZOO-MISSISSIPPI DELTA<sup>1/</sup>

By PAUL R. HENSON and ROBERT S. CARR<sup>2/</sup>

Soybean variety and dates of planting tests have been conducted at the Delta Experiment Station, Stoneville, Mississippi, for a number of years. In 1943 the program of the U. S. Regional Soybean Laboratory<sup>3/</sup> was enlarged to include 12 southern states with headquarters for the Southern section at Stoneville, Mississippi. As a part of this program, uniform variety tests have been conducted at a number of locations in the Yazoo-Mississippi Delta. The results of these variety tests and a study of the dates of planting at the Delta Station are reported herein.

## Soybean Variety Tests in the Yazoo-Mississippi Delta

Uniform variety tests were again conducted at a number of locations on the Yazoo-Mississippi Delta to determine the adaptation of these varieties and strains to Delta conditions. Tests in 1945 were made in Tunica, Washington, Sunflower, Humphreys, Leflore, Yazoo, and Sharkey Counties.

Since the normal maturities of existing soybean varieties that may be adapted to the Delta range from mid-August to mid-November, the varieties were grouped according to their maturity in order

to obtain more accurate information of the performance of each one. The grouping was as follows: (1) Early strains, maturing prior to September 15; (2) medium strains, October 1 to October 15; (3) medium-late strains, October 16 to November 1; and (4) late strains, which mature after November 1. At present there are no promising varieties which normally mature between September 16 and October 1. The origin of the varieties and strain included in the tests, grouped according to maturity is given in table 1.

Plant height and lodging notes were taken on the varieties as they matured. Yields were determined from the weight of seed harvested from a 16-foot section of the four one-row plots of each variety. All yields were analyzed statistically to determine whether the differences between varieties were significant. In this connection the two seasons at some locations were so different primarily in the amount and distribution of rainfall, that the yield and rank of some varieties was quite different. Because of this year-variety interaction, the differences required for significance between varieties in the 2-year averages are unusually high at some locations. Fair to excellent yields were obtained on all tests except those at Heathman and Greenwood. The Heathman test failed as a result of the extreme droughty condition at the time of planting. Livestock grazed the test at Greenwood destroying the comparative value of any yields.

Notes on seed quality and size were taken on each variety. A seed composite of each variety was taken for analysis. All analyses were made at the U. S. Regional Soybean Laboratory of Urbana, Illinois. Average yields for 1944 and 1945, the 1945 yields, other agronomic data, percentage of protein, percentage of oil, and iodine numbers of the oil, are sum-

<sup>1/</sup>Cooperative investigations between the U. S. Department of Agriculture; the Bureau of Plant Industry, Soils and Agricultural Engineering; U. S. Regional Soybean Laboratory; and the Mississippi Agricultural Experiment Station.

<sup>2/</sup>Agronomist and Assistant Agronomist, respectively.

<sup>3/</sup>"An organization participated in by the Bureau of Plant Industry, Soils, and Agricultural Engineering, Agricultural Research Administration, U. S. Department of Agriculture, and the Agricultural Experiment Stations of Alabama, Arkansas, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Nebraska, North Carolina, North Dakota, Ohio, Oklahoma, South Carolina, South Dakota, Tennessee, Texas, Virginia, and Wisconsin."

Table 1. Origin of soybean varieties and strains.

Variety or strain	Source of originating agency	Origin
<b>Early maturing strains</b>		
Boone	Missouri Agr. Exp. Sta.	Sel. from P. I. 54563-31/
Chief	Illinois Agr. Exp. Sta.	Sel. from Illini x Manchu
Gibson	Purdue Agr. Exp. Sta.	Sel. from Midwest x Dunfield
Macoupin	Elmer Hulcher	Sel. from commercial lot
Patoka	Purdue Agr. Exp. Sta.	Sel. from P. I. 70218-2
C101	Purdue Agr. Exp. Sta.	Sel. from Dunfield x Manchu
S55-10	Missouri Agr. Exp. Sta.	Sel. from Virginia x P. I. 37062
S55-35	Missouri Agr. Exp. Sta.	Sel. from Virginia x P. I. 37062
S100	Missouri Agr. Exp. Sta.	Rogue from Illini
<b>Medium maturing strains</b>		
Arksoy 2913	Ark. Agr. Exp. Sta.	Sel. from Arksoy
Armredo	Ariz. Agr. Exp. Sta.	Sel. from Mamredo
Magnolia	U. S. Dept. of Agr.	P. I. from 85537 from Suigen, China, 1929
Mamredo	Delta Exp. Sta., Stoneville, Miss.	Sel. from a cross (Mam. Yel. x Laredo)
Rose Non-Pop	W. P. Rose, Goldsboro, N. C.	Origin unknown
Ogden	Tenn. Agr. Exp. Sta.	Sel. from a cross (Tokyo x P. I. 54610)
P. I. 97066	U. S. Dept. of Agr.	Nanmen, Chosen, 1930
Ralsoy	Purina Mills, C. H. Banks	Sel. from Arksoy 2913
2-40A	Paul B. Hutchens	Sel. from Arksoy
6-40M	Paul B. Hutchens	Sel. from a mixed seed lot
Delsoy	Delta Exp. Sta.	Sel. from P. I. 85355
<b>Medium late maturing strains</b>		
C. M. S.	J. E. Wannamaker, St. Matthews, S. C.	Sel. from Clemson
26-39M	Paul B. Hutchens	Sel. from a mixed seed lot
Missoy	U. S. Dept. of Agr.	P. I. 71664 from Nanking, China, 1927
Monetta	U. S. Dept. of Agr.	P. I. 71608 from Nanking, China, 1927
Roanoke	N. Car. Agr. Exp. Sta.	Sel. from mixed seed lot
Wood's Yellow	T. W. Woods & Sons	Sel. from Mammoth Yellow
Palmetto	U. S. Dept. of Agr.	P. I. 71587 from Nanking, China, 1927
P. I. 89775A	U. S. Dept. of Agr.	Tang Shang, China, 1930
Volstate	Tenn. Agr. Exp. Sta.	Sel. from a cross (Tokyo x P. I. 54610)
<b>Late maturing strains</b>		
Acadian	La. Agr. Exp. Sta.	Formerly La. 40-290
Avoyelles	La. Agr. Exp. Sta.	Sel. from Ootoot
Cherokee	U. S. Dept. of Agr.	P. I. 93057 from Hangchow, China
Delsta	Delta Exp. Sta., Stoneville, Miss.	Station Sel. No. 6677, 1935
Gatan	Ga. Exp. Sta.	Sel. out of Ootoot
L. Z.	La. Agr. Exp. Sta.	Formerly La. 40-400
Mamloxi	Delta Exp. Sta., Stoneville, Miss.	Sel. from a cross (Mam. Yel. x Biloxi)
Mamotan	Delta Exp. Sta.	Sel. from a cross (Mam. Yel. x Ootoot)
Nanda	U. S. Dept. of Agr.	P. I. 95727 from Shariin, Chosen, 1932
Pelican	La. Agr. Exp. Sta.	
Seminole	U. S. Dept. of Agr.	P. I. 93058 from Hangchow, China

<sup>1</sup>/Division of Plant Exploration and Introduction, Bureau of Plant Industry, Soils, and Agricultural Engineering, U. S. D. A.

marized by maturity groups in tables 2, 3, 4, and 5.

### Tunica Tests

The most northern tests in the Delta were located in Tunica County, on Highway 61, in cooperation with Richard W.

Owens, landowner, and D. D. Gibson, county agent. The soil, a Dubbs silt loam of high fertility is a major soil type of that section. No fertilizer was applied to the area in 1945. The land was thoroughly disked and the beans planted flat

in 38-inch rows on May 4th. The varieties and strains of early, medium, and medium-late groups were tested in this location.

Of the early group, the Missouri strains, S100, S55-35, S55-10, and the Indiana strains C101 have all yielded well at Tunica, with S100 and C101 yielding equally high at Stoneville, the only other location at which this group was grown. Many of the early strains not only failed to provide sufficient ground cover to check weed growth, particularly in late summer, but are frequently too short to combine readily. In this connection, S100 provides fair ground cover and combines easily since it is a tall growing variety. All of these strains are lacking in seed quality. Chemical analyses of the seed show S100 to be lower in percent oil than the other varieties.

Ogden was again the highest yielding variety of those of medium maturity. This variety shatters on certain soil types under dry climatic conditions. Other good yielding varieties are Rose Non-Pop, Armredo, and Ral soy. Delsoy yielded well but shattered badly. The protein and oil contents of the higher yielding varieties are relatively high with the exception of Delsoy, a variety definitely low in oil.

Volstate and the North Carolina strain, Roanoke, were the higher yielding varieties of those normally maturing between October 16 and November 1. Varieties of this maturity were not grown at Tunica in 1944.

#### Stoneville Tests

The tests on the Experiment Station at Stoneville were located on Robinsonville very fine sandy loam, commonly known to farmers in this vicinity as Deer Creek loam. It is a fertile soil, frequently producing in excess of one bale of cotton or 50 bushels of corn per acre. In 1945 the field was plowed, thoroughly disked, and the soybeans planted flat in 40-inch rows on May 22. The soybeans were not fertilized. The varieties and strains of all

maturity groups were grown at Stoneville.

Relatively high yields were obtained in 1945 from all strains of the early group at Stoneville as shown in table 2. C101 and S100 are the leading varieties for the 2 years, 1944-45, with yields of 33.4 and 33.3 bushels per acre, respectively.

As at Tunica, the Ogden variety, maturing October 4, led the medium group with a 2-year average yield of 38.6 bushels, which was 11.9 bushels or 44 percent above that of the next highest yielding variety.

Of the varieties maturing at a medium-late date, i. e., October 16 to November 1, Roanoke, Volstate, and Wood's Yellow were the highest yielding at Stoneville in 1945. Wood's Yellow, however, shatters more and yielded significantly less than either of the other two varieties in 1944. Volstate and Roanoke have consistently been the highest yielding varieties of this maturity. The oil content of the seed of Roanoke is slightly higher than that of Volstate.

Grain or oil, hay, and vegetable types are included in the late group. None of the late varieties was outstanding in yield. Equally good yields were secured from the grain varieties, Manotan, Mamloxi, and Delsta. The Pelican, Acadian and L. Z., developed by the Louisiana Experiment Station, are intermediate grain-hay types and have given fair yields at Stoneville. The yields of grain from the hay varieties, Avoyelles, Gatan, and Red Tanner, are low for the group. Nanda, long considered a vegetable variety, was equal to the best of these varieties in content of oil and but slightly lower in yield. The vegetable varieties, Seminole and Cherokee, introductions from Hangchow, China, by the U. S. Department of Agriculture, are not particularly well adapted to Delta conditions.

#### Anchorage Tests

The tests at Anchorage, in Humphreys County, were located on a fertile Yazoo silt loam on the plantation of L. S. Stoner. Plantation yields of soybeans at this lo-

Table 2. Summary of agronomic and chemical data for the soybean strains of early maturity, 1944-45<sup>1</sup>

	C101	S100	S55-35	S55-10	Gibson	Chief	Macoupin	Boone	Patoka	Mean	Diff. re- quired for sig. (.05)
2-yr. av. yields, 1944-45											
Tunica	28.8	30.3	28.7	28.1	27.1	25.8	25.2	23.8	—	27.2	Not sig.
Stoneville	38.0	36.3	31.7	31.5	31.0	30.5	29.5	28.0	—	32.1	5.9 bu.
Mean	33.4	33.3	30.2	29.8	29.0	28.1	27.4	25.9	—	29.6	3.9 bu.
1945 yields											
Tunica	28.3	34.2	28.8	27.7	27.3	27.7	25.1	22.9	27.8	27.8	6.0 bu.
Stoneville	33.8	32.6	32.0	30.3	29.5	31.2	24.5	24.1	36.9	30.5	5.6 bu.
Mean	32.0	33.8	30.4	29.0	28.4	29.4	24.8	23.5	32.3	29.3	4.3 bu.
2-yr. av., 1944-45											
Date mature	9-5	9-14	9-3	9-3	9-6	9-5	9-6	9-7	9-5	9-6	—
Lodging <sup>2</sup> /	2.6	2.6	2.4	2.9	2.9	2.9	2.5	3.3	1.6	2.6	—
Height, inches	37	46	36	36	37	44	45	42	30	39	—
Seed quality <sup>3</sup> /	3.7	3.3	3.3	3.2	3.7	3.8	3.2	4.4	3.8	3.6	—
Beans per lb.	3290	3660	3130	3500	3420	3730	3580	3520	3180	3446	—
Percent protein <sup>4</sup> /											
Tunica	40.1	40.7	42.3	41.9	40.3	40.5	38.8	41.1	40.5	40.7	—
Stoneville	40.4	44.0	43.5	43.1	40.7	40.8	40.4	41.5	43.6	42.0	—
Mean	40.3	42.4	42.9	42.5	40.5	40.7	39.6	41.3	42.1	41.4	—
Percent oil <sup>4</sup> /											
Tunica	21.4	20.1	20.7	21.5	21.4	21.7	22.3	21.5	21.3	21.3	—
Stoneville	20.9	18.5	20.2	20.6	20.7	21.3	21.4	20.7	21.0	20.6	—
Mean	21.2	19.3	20.5	21.1	21.1	21.5	21.9	21.1	21.2	21.0	—
Iodine No. of oil											
Tunica	126.4	131.2	129.5	131.4	128.9	127.1	218.6	126.8	131.5	129.0	—
Stoneville	131.3	130.7	131.9	134.2	130.5	129.3	130.1	125.3	132.6	130.7	—
Mean	128.9	131.0	130.7	132.8	129.7	128.2	129.4	126.1	132.1	129.9	—

<sup>1</sup>/All chemical analyses made by the U. S. Regional Soybean Laboratory, Urbana, Illinois.

<sup>2</sup>/Lodging notes recorded on a scale of 1 to 5 as: (1) Nearly all plants erect; (2) plants leaning slightly; (3) plants leaning moderately or 25 to 50 percent down; (4) plants leaning considerably or 50 to 80 percent down; (5) 80 percent or more of plants down.

<sup>3</sup>/Seed quality recorded on a scale of 1 to 5 as: (1) Very good; (2) good; (3) fair; (4) poor; (5) very poor; based on development of seed wrinkling, damage, and color for the variety.

<sup>4</sup>/Percentage based on moisture-free material.

Table 3. Summary of agronomic and chemical data for the soybean varieties and strains of medium maturity, 1944-45.<sup>1</sup>

	Ogden	Armredo	Ralsoy	2-40A	6-40M	Arksoy 2913	Mamredo	Magnolia	P. I. 97066	Rosc Non-Pop	Delsoy	Mean	Diff. re- quired for sig.
1945 yields													
2-yr. av. yields, 1944-45													
Stoneville	38.6	25.6	25.7	26.7	22.5	20.8	23.0	26.2	24.5	25.6	24.0	25.7	5.0
Tunica	31.2	24.6	25.4	23.0	23.6	27.1	23.2	17.9	17.0	—	—	23.6	7.4
Anchorage	33.6	26.2	22.9	18.6	22.2	19.1	20.2	19.0	18.0	24.5	18.8	22.1	4.3
Mean	34.5	25.5	24.7	22.8	22.8	22.3	22.1	21.0	19.8	—	—	23.9	5.6
1945 yields													
Stoneville	26.7	20.1	16.2	20.3	14.4	16.0	15.7	21.0	20.1	23.9	17.6	19.3	4.2
Tunica	36.9	24.2	28.4	21.4	27.6	26.1	27.0	20.9	22.1	29.7	31.7	26.9	4.2
Anchorage	37.3	25.5	22.8	16.0	21.9	16.5	18.0	17.4	15.6	26.9	22.1	21.8	5.9
Onward	31.0	18.3	24.3	24.0	17.3	18.0	13.4	18.7	12.0	31.1	25.2	21.2	5.8
Mean	33.0	22.0	22.9	20.4	20.3	19.2	18.5	19.5	17.5	27.9	24.2	22.3	4.9
2-yr. av. data, 1944-45													
Date mature	10-2	10-5	10-3	10-5	10-5	10-4	10-7	10-4	10-11	10-9	10-6	10-5	—
Lodging <sup>2/</sup>	1.9	3.0	2.1	2.2	2.2	2.4	2.9	3.8	3.9	2.1	2.6	2.7	—
Height, inches	30	32	30	29	23	28	34	44	48	33	32	33	—
Seed quality <sup>3/</sup>	2.6	1.9	1.9	2.3	2.0	1.8	2.8	2.7	2.4	2.3	2.0	2.3	—
Seed per lb.	3310	4775	3780	3720	2930	4010	3690	3630	4360	3490	3360	3720	—
Percent protein <sup>4/</sup>													
Stoneville	41.7	40.0	42.9	42.7	44.1	43.0	40.8	43.2	43.6	42.4	44.8	42.4	—
Tunica	39.5	39.9	41.9	40.7	41.0	41.6	39.4	41.6	41.7	—	—	40.8	—
Anchorage	41.6	40.3	43.3	42.8	42.2	43.6	41.7	43.6	42.6	39.9	43.0	42.4	—
Mean	40.9	40.1	42.7	42.1	42.4	42.7	40.6	42.8	42.6	—	—	41.9	—
Percent oil <sup>1/</sup>													
Stoneville	19.8	19.9	19.8	19.6	18.6	19.7	19.6	20.4	18.3	19.4	17.1	19.5	—
Tunica	21.7	20.4	20.7	21.4	20.6	20.8	20.4	21.0	20.0	—	—	20.8	—
Anchorage	21.5	20.4	20.8	21.1	20.4	20.6	20.2	21.1	19.9	21.1	18.8	20.7	—
Mean	21.0	20.2	20.4	20.7	19.9	20.4	20.1	20.8	19.4	—	—	20.3	—
Iodine No. of oil													
Stoneville	138.2	135.5	136.0	135.0	131.6	136.2	132.8	130.3	132.7	133.4	131.6	134.3	—
Tunica	134.1	133.6	133.2	132.2	127.9	133.3	129.4	129.2	131.0	—	—	131.5	—
Anchorage	130.8	132.9	131.0	128.8	125.6	131.9	125.9	125.8	126.9	128.4	131.0	128.8	—
Mean	134.4	134.0	133.4	132.0	128.4	133.8	129.4	128.4	130.2	—	—	131.5	—

See footnotes, table 2.



cation have been well above the average for the Delta in past years. The test area was thoroughly prepared and planted flat in 38-inch rows on May 3. The varieties and strains of the medium and medium-late groups were grown at Anchorage.

In the medium group, Ogden, with a yield of 33.6 bushels led all other varieties by more than 10 bushels per acre as shown in table 3. The 2-year average yield of Ogden of 37.4 bushels per acre, as compared to 26.3 bushels for the next highest yielding variety, is indicative of the superiority of Ogden.

In the medium-late group, table 4, the yields of Volstate and Roanoke were significantly greater than that of any other variety in the group. The 2-year average of these two varieties was slightly less than 30 bushels per acre.

#### Sartaria Tests

The tests at Sartaria, in Yazoo County, were located on Vicksburg silty clay loam, and conducted in cooperation with M. F. Cresswell, landowner, and A. R. Ruby, county agent. The medium-late and late groups of varieties were grown at this location. The area was thoroughly disked and the tests planted flat in 40 inch rows on May 3. The level of fertility of this soil is high, usually producing in excess of a bale of cotton per acre.

In the medium-late group Roanoke made the greatest yield, 38.7 bushels per acre. Wood's Yellow and Volstate ranked second and third, with yields of 31.3 and 29.7 bushels, respectively. In the late group, table 5, yields of Mamloxi, Mamotan and Nanda were approximately the same and were significantly greater than yields of the other varieties.

#### Onward Test

The test at Onward, in Sharkey County, was located on Sharkey clay commonly known as "buckshot," on the Reality Plantation of J. H. Hand, Jr. The medium and medium-late groups were planted at this location. The land was well prepared and the soybeans planted flat in 40-inch rows on June 1.

In the medium group, as given in table 3, Ogden and Rose Non-Pop made significantly greater yields than that of all other varieties. These were approximately 10 bushels greater than the average for the test. The highest yielding varieties in the medium-late group for this one year were Wood's Yellow, Roanoke, and Volstate; however, all yields were relatively low. Wood's Yellow was lower in percent oil than the other two varieties.

#### Dates of Planting Soybeans

Each year a part of the soybean acreage in the Delta is planted on a poorly prepared seedbed, frequently too dry for prompt germination, because of the possibility of not getting soybeans planted in time for maximum production. The stands secured from such plantings are usually thin and weedy. Poor stands result in lower yields at higher costs, because of the necessity for additional hand labor for hoeing. The Delta Experiment Station has for a number of years con-

ducted dates of planting tests to determine the best period for planting soybeans. For 1945, consisted of four replications of five varieties of soybeans to be planted at 3-week intervals beginning April 2 and continuing through July 16. Excessive rains in late March and early April delayed the first planting until April 13. The next planting was delayed accordingly for better adjustment of the time intervals between the first three plantings. The five varieties planted at each date were S100, Arksoy 2913, Ogden, Volstate, and Acadian; these varied in normal maturity from early September for S100 to early November for Acadian. Plant height and lodging notes were taken as the varieties approached maturity. Yields were based on harvested weight of seed from a 16-foot section from each row. Notes were taken on the threshed samples to record the effect of date of planting on seed quality and size. Samples of seed were composited by variety and date of planting for chemical analysis. Yields

Table 4. Summary of agronomic and chemical data for the soybean varieties and strains of medium-late maturity, 1944-45<sup>1/</sup>

	Roanoke	Volstate	Wood's Yellow	26-39M	89775A	Missouy	CNS	Monetta	Palmetto	Mean	Diff. re-quired for sig.
2-yr. av. yields, 1944-45											
Stoneville	34.8	32.8	28.1	26.9	23.9	22.0	20.5	20.9	14.1	24.9	11.4
Anchorage	28.1	29.3	19.5	20.7	14.1	14.8	13.2	12.1	10.3	18.0	11.0
Mean	31.5	31.1	23.8	23.8	19.0	18.4	16.9	16.5	12.2	21.5	10.1
1945 yields											
Tunica	34.7	38.4	27.1	30.0	24.7	22.7	14.1	17.1	23.4	25.8	4.7
Sartaria	38.7	29.7	31.3	26.0	21.1	23.1	22.1	17.2	19.3	25.4	5.5
Stoneville	26.7	28.1	27.3	21.1	20.9	18.3	19.2	20.0	16.1	22.0	6.0
Anchorage	34.5	35.6	24.5	19.6	10.5	19.6	15.2	12.2	16.1	20.9	9.0
Onward	17.8	17.7	19.5	13.9	16.3	11.9	13.0	11.8	12.2	14.9	5.2
Mean	30.5	29.9	25.9	22.1	18.7	19.1	16.7	15.7	17.4	21.8	4.9
2-yr. av. data, 1944-45											
Date mature	10-23	10-25	10-23	10-18	10-16	10-20	10-22	10-14	10-22	10-20	—
Lodging <sup>2/</sup>	3.3	3.4	2.3	2.8	3.7	4.3	3.4	3.8	4.3	3.5	—
Heights, inches	41	37	38	26	46	55	34	40	59	43	—
Seed quality <sup>3/</sup>	1.9	1.9	2.4	1.9	3.1	2.8	2.2	2.3	3.2	2.4	—
Seed per lb.	3260	3150	2480	3410	3750	4010	3600	4320	3170	3460	—
Percent protein <sup>4/</sup>											
Stoneville	39.1	39.6	43.4	42.6	43.6	43.8	46.7	44.1	45.5	43.2	—
Anchorage	41.7	39.0	43.1	43.6	42.7	43.9	45.7	44.4	46.2	43.4	—
Mean	40.4	39.3	43.3	43.1	43.2	43.9	46.2	44.3	45.9	43.3	—
Percent oil <sup>5/</sup>											
Stoneville	21.3	20.5	19.1	18.5	18.5	19.1	17.8	15.8	17.4	18.7	—
Anchorage	22.1	21.7	18.5	18.4	19.2	19.2	17.8	15.7	17.8	18.9	—
Mean	21.7	21.1	18.8	18.5	18.9	19.2	17.8	15.8	17.6	18.8	—
Iodine No. of oil											
Stoneville	135.2	131.6	132.2	136.9	135.3	129.0	130.8	134.5	127.9	132.6	—
Anchorage	129.4	130.7	128.2	131.2	131.0	128.3	128.3	131.3	127.5	129.5	—
Mean	132.3	131.2	130.2	134.1	133.2	128.6	129.6	132.9	127.7	131.1	—

See footnotes, table 2

Table 5. Summary of agronomic and chemical data for the soybean strains of late maturity, 1944-45<sup>1/</sup>

	Mamotan	Mam-loxi	Delsta	Pelican	Acadian	Nanda	L. Z.	Avoyelles	Gatan	Seminole	Cherokee	Red Tanager	Mean	Diff. required for sig.
Average yields in bushels per acre, 1944-45														
Stoneville	29.0	25.7	25.7	25.6	25.5	23.7	23.6	17.2	15.8	12.7	12.4	—	21.5	8.1
Average yields in bushels per acre, 1945														
Stoneville	28.1	31.1	28.8	26.5	24.9	23.5	26.8	17.4	14.3	16.2	16.3	9.9	22.0	5.2
Satartia	32.4	33.3	24.3	23.2	25.0	30.5	20.6	16.3	17.1	15.0	17.1	19.2	22.8	5.8
Mean	30.3	32.2	26.6	24.9	25.0	27.0	23.7	16.9	15.7	15.6	16.7	14.6	22.4	6.9
2-yr. av. data, 1944-45														
Date mature <sup>5/</sup>	10-30	11-1	10-28	11-1	10-29	10-28	10-30	10-30	10-30	11-2	10-30	10-20 <sup>6/</sup>	—	—
Lodging <sup>2/</sup>	3.0	3.1	2.9	4.3	4.1	3.4	4.1	4.5	4.5	3.9	3.2	5.0	—	—
Height, inches	43	45	47	60	60	39	60	56	57	46	49	35	—	—
Seed quality <sup>3/</sup>	2.1	2.4	2.2	2.2	2.0	2.3	2.4	2.5	2.0	3.4	2.7	3.4	—	—
Beans per lb.*	2500	2800	2100	3800	3200	2400	3700	3600	4400	1600	2200	3900	—	—
2-yr. av. Stoneville, 1944-45														
Percent protein	41.8	42.7	42.7	41.6	43.3	42.1	44.0	42.5	45.0	45.7	46.6	—	43.5	—
Percent oil	19.6	18.2	19.2	19.8	19.8	20.4	19.3	18.3	16.9	19.3	18.0	—	19.0	—
Percent protein, 1945														
Stoneville	42.2	43.2	42.7	40.5	43.4	43.3	43.8	41.9	45.4	46.5	46.9	46.3	43.8	—
Satartia	41.2	43.0	40.3	41.4	41.8	41.0	41.1	39.4	41.1	44.2	44.4	44.2	41.9	—
Mean	41.7	43.1	41.5	41.0	42.6	42.2	42.5	40.7	43.3	45.4	45.7	45.3	42.9	—
Percent oil, 1945														
Stoneville	18.8	18.1	18.5	19.4	19.0	19.2	18.7	18.1	16.4	18.6	17.7	16.1	18.2	—
Satartia	19.4	18.8	19.7	20.9	20.2	20.0	19.4	19.0	18.1	20.1	18.3	17.2	19.3	—
Mean	19.1	18.5	19.1	20.2	19.6	19.6	19.1	18.5	17.3	19.4	18.0	16.7	18.8	—
Percent Iodine, 1945														
Stoneville	138.5	137.3	135.1	137.4	136.3	133.3	136.9	137.8	138.8	135.1	133.5	140.3	136.7	—
Satartia	135.4	136.0	131.7	136.3	135.0	129.8	136.5	137.7	137.7	131.7	133.6	138.3	135.0	—
Mean	137.0	136.7	133.4	136.9	135.7	131.6	136.7	137.8	138.3	133.4	133.6	139.3	136.0	—

<sup>1/</sup>, <sup>2/</sup>, <sup>3/</sup>, and <sup>4/</sup>, See footnotes, table 2.<sup>5/</sup>1945 average for Stoneville and Satartia.<sup>6/</sup>Stoneville only.<sup>6/</sup>1945 only

were not taken on the varieties planted July 16 because of poor stands. The stands of Acadian planted June 24 were so badly damaged by rabbits that comparable yield data could not be obtained of this variety.

The 1945 average yields of the varieties at each date of planting are given in table 6. These yields closely substantiate the results of tests of previous years. Since these results are more complete than previous years data, only the data for 1945 are given. Each variety yielded equally well at the different planting dates from April to early June, although the data indicate slightly lower yields from the planting of June 4. The yields of all varieties planted June 25 were significantly lower than those of earlier plantings.

Since the results show but small differences in yield between early April to early June plantings, it is of interest to note the effect of date of planting on the maturity of the various varieties. The 2-year data as given in table 7 is very interesting in this regard. The maturity of the early variety, S100, was affected much more by date of planting than the

later varieties. The differences in maturity dates between early and late plantings was 26 days for S100 and 18, 6, and 2 days for Ogden, Arksoy, and Volstate, respectively. It is of particular interest to note that Ogden in the early plantings matured 5 days ahead of Arksoy and 7 days later when planted June 4. The spread in maturity of Ogden from early to late plantings of 18 days suggests the possibility of planting this variety at different dates to increase the length of the combining period. Such a practice would be a desirable one for Delta farmers, since Ogden in particular does shatter under very dry conditions if not combined promptly.

Late plantings usually result in shorter, more erect plants. The later plantings in 1945, because of well distributed rainfall in July through September, were as tall and lodged to the same degree as the earlier plantings. The results also indicate better seed quality from later plantings. Chemical analyses of the seed of the varieties have indicated a slight decrease in oil content with the later plantings. The oil content of seed from late

Table 6. Effect of date of planting on yield of soybeans, Stoneville, Mississippi, 1945.

Date of planting	Average yields (Bu. per acre)					Mean
	S-100	Arksoy 2913	Ogden	Volstate	Acadian <sup>1/</sup>	
April 13 .....	35.4	27.8	33.2	31.6	30.4	32.0
May 1 .....	35.8	26.7	30.5	34.3	26.5	31.8
May 15 .....	33.8	26.3	31.5	31.3	22.4	30.7
June 4 .....	28.0	24.3	32.4	29.1	22.7	28.5
June 25 .....	14.1	13.5	15.7	23.3	—	16.7
Mean .....	29.4	23.7	28.7	29.9	—	—

Difference required for significance (5% level):  
 Between date: 4.2 bushels.  
 Between varieties: 3.0 bushels

<sup>1/</sup> Not included in the mean.

Table 7. Effect of date of planting on the maturity of four varieties of soybeans, 1944-1945, Stoneville, Mississippi

Date planted	Average date mature			
	S-100	Ogden	Arksoy	Volstate
April 13 .....	Sept. 5	Sept. 30	Oct. 5	Oct. 27
May 1 .....	Sept. 10	Oct. 6	Oct. 6	Oct. 28
May 15 .....	Sept. 17	Oct. 8	Oct. 7	Oct. 28
June 4 .....	Oct. 1	Oct. 18	Oct. 11	Oct. 29
Spread in maturity .....	26 days	18 days	6 days	2 days

June and July plantings has been consistently low.

In conclusion, the dates of planting tests have shown that soybeans may be planted from early April to early June with equally good results. This long

planting period should enable Delta farmers to readily fit soybeans into their planting schedules. The results indicate the optimum combining period of the Ogden variety of soybeans can be increased by early and late plantings.