Bulletin 213 January, 1923.

INDEXED
Division of Horticulture Catalog

Report From Raymond Branch Experiment Station

For 1920 to 1922 Inclusive

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AGRICULTURAL COLLEGE, MISSISSIPPI
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Report of The Work at The Raymond Branch Experiment Station

By C. B. Anders

INTRODUCTION

The Raymond Branch Experiment Station was established by the Legislature of 1920 and located at Raymond, Mississippi. During the year 1920 a location was selected, land purchased and some buildings and improvements begun. Complete possession of the farm was not obtained until January, 1921, and farming operations did not begin until that date.

The Station adjoins the farm of the Hinds County Agricultural High School and Junior College. It is one mile from Raymond and sixteen miles from Jackson on the Raymond-Jackson Highway. It consists of one hundred sixty-nine acres of hill and valley land of Brown-loam type, fifty acres of which was purchased by the state, eighty acres donated by Hinds County and thirty-nine acres donated by Hinds County Agricultural High School.

The author fully realizes that all experiments must be run through a series of seasons before definite conclusions can be drawn and for this reason data on many of the projects under way here is not published in this bulletin.

IMPROVEMENTS

The farm as originally purchased was entirely without improvements. There was no barns, buildings or fences; the hills were badly washed, the valleys had little drainage and many parts of the place had been allowed to grow up to bushes, briars and willows. These conditions have made it necessary for a great part of the first two years to be devoted to building, fencing, ditching, terracing and clearing land. This and the lack of sufficient funds have limited experimental work. At the present writing a residence for the Assistant Director has been completed, an old cottage repaired for the Farm Foreman, a barn and an implement shed built, and an efficient system of ditches and terraces put in over a large part of the farm. Most of the land has been cleared and a hog proof fence put around the place.

COTTON

VARIETY TESTS—These tests are conducted for the purpose of comparing the leading commercial varieties and testing new varieties and selections that are put on the market. A wide variation in yields and in money value of different varieties indicates the great need of carefully selected seed adapted to the section in which they are grown.

Results of two years' variety work here are shown in table number 1. Both these tests were conducted on valley land typical of the bot-

tom lands in this section and fertilized with 200 pounds acid phosphate and 100 pounds nitrate of soda per acre.

TABLE I. COTTON VARIETY TESTS—1921-1922

Variety	Yield of Seed Cotton Per Acre		Lint Per cent		Length of Lint		Value of Lint per Lb in Cts		Total Money Value of Seed and Lint		Rank in Mon Value	
	1921	1922	1921	1922	1921	1922	'21	'22	1921	1922	'21	'22
Simpkins	911	1219	39.1	33.5	½	¾	12	23.25	53.89	107.04	23	18
Bank-Account	963		35.9		½		12		53.73		24	
Miss. Station Trice	947	1420	32.2	31.3	1 1/16	1 1/16	21	25.00	76.89	125.68	12	4
Wanna'mkr-Clev'ld	907	1193	38.2	37.4	5/8	7/8	14	23.75	59.79	117.99	18	11
Cleveland-54	1027	1307	37.2	35.2	5/8	15-16	13	24.00	62.56	122.99	17	5
Piedmont-Cleveland	1019	1270	36.7	35.3	½	15-16	12	24.00	57.74	119.94	20	8
Cleveland Big Boll	907		36.7		5/8		14		58.14		19	
Cook-1010	884		42.1		½		12		54.91		22	
Cook-588		983		36.7		7/8		23.75		94.95		22
Half and Half	987	1115	46.1	43.6	½	5/8	13	22.75	69.76	120.13	14	7
Miller	1031	957	35.3	32.6	1 1/16	1 1/16	22	25.00	93.36	87.60	6	23
Triumph	904		38.8		7/8		16		68.16		16	
Lone Star	756		37.8		7/8		16		55.09		21	
Lone Star 65	999	1217	34.6	32.9	1 3/16	1 1/8	27	26.50	100.43	118.43	1	10
Lone Star-79		1233		30.9		1 1/8 - 1 3/16		27.00		115.67		13
Acala Number 5	1079	1032	37.9	35.3	1	1 1/16 - 1/8	16	25.25	78.85	101.85	11	21
Salsbury	987	1160	34.2	33.4	7/8	1 1/8	16½	26.50	68.71	114.06	15	14
Express-432	967		33.6		1 1/8		23		87.64		8	
Express-782	931	1262	32.4	32.7	1 3/16	1 3/16 - 1/4	24	28.00	85.07	120.07	9	3
Express 122-433	963		29.8		1 3/16		24		82.39		10	
Express 350-718	1035		29.8		1 3/16		25		91.44		7	
Express, Walcot		1283		29.8		1 3/16		27.50		118.56		9
Express Lightning		1285		28.3		1 3/16		27.50		113.97		15
Express-630		1338		28.8		1 3/16		27.50		120.44		6
Express-350		1229		27.5		1 3/16		27.50		106.32		19
Delfos-6102	1039	1440	33.4	31.6	1 1/8	1 1/8	26	27.50	104.06	139.76	2	1
Delfos-631	1019	1185	33.5	31.5	1 1/4	1 3/16 - 1/4	26	28.00	102.17	116.67	3	12
Delfos-798		1400		32.6		1 3/16		27.50		139.68		2
Sunpress-61	947	1221	27.5	27.1	1 1/4	1 1/8	32	29.50	97.14	111.01	4	16
Webber-49-4	760	1076	30.1	29.8	1 1/4	1 1/4	28	28.50	74.67	102.61	13	20
Delta-Type Webber	935	1105	31.2	30.4	1 1/4	1 1/4	28	28.50	94.68	107.40	5	17

FERTILIZER TESTS—Tables number 2 and 3 give results from two fertilizer tests. Test number 1 has run two years on the same plats, number 2 one year on an adjoining piece of ground with the order of plats reversed. In these tests the increase in yields where stable manure was used is outstanding. The best yields and increases were obtained with the use of 5 tons stable manure and 200 pounds acid phosphate per acre. Nitrate of soda and cotton seed meal gave good returns. Acid phosphate used without nitrate in some form did very poorly. Second to the stable manure the most economical results were obtained from the use of 200 pounds of acid phosphate and 100 pounds nitrate of soda. This combination is advised as a safe fertilizer for this section. In some instances potash seems to have given profitable returns but at present the writer does not feel justified in advising its use except on soils where rust attacks the cotton.

TABLE II. COTTON FERTILIZER TEST NO. 1—1921-1922

Plat No.	Fertilier Applied Amount Per Acre	Yields in Pounds Seed Cotton Per Acre			
		Yield 1921	Incr. Over Check 1921	Yeild 1922	Increase over Check 1922
1	5 Tons Stable Manure	1584	627	1204.3	549.5
2	Check	957		654.8	
3	200 lbs. Nitrate Soda	1122	165	745.5	90.7
4	400 lbs. Cotton Seed Meal	1083	288	983.8	416.3
5	Check	795		567.5	
6	400 lbs. Acid Phosphate	717	Loss 78	537.3	Loss 30.2
7	200 lbs. Kainit	735	40	384.9	32.6
8	Check	695		352.3	
9	100 lbs. Ni. Soda, 200 lbs. A. P.	816	121	587.6	235.3
10	200 lbs. C. M., 200 lbs. A. P.	693	65	592.1	292.9
11	Check	528		299.2	
12	100 lbs. N. Sod., 100 lbs. Kainit	1020	492	506.9	207.7
13	200 lbs. C. M., 100 lbs. Kainit	1275	354	632.5	212.8
14	Check	921		419.7	
15	200 lbs. C. M., 200 lbs. A. P. 100 lbs. Kainit	1021	100	656.1	236.4
16	200 lbs. C. M., 200 lbs. A. P. 200 lbs. Kainit	1194	240	747.5	164.3
17	Check	954		583.2	
18	5 tons Stab. Man., 200 lbs. A. P.	1746	792	1407.6	824.4
19	5 tons Stab. Man., 100 lbs Kain	1692	654	1380.0	813.2
20	Check	1038		566.8	
21	5 tons Stable Manure 200 lbs. A. P., 100 lbs. Kainit	1443	405	1231.8	665.0

TABLE III. COTTON FERTILIZER TEST NO. 2—1922

Plat No.	Fertilizer Applied Amonnt per Acre	Yields in Pounds Seed Cotton Per Acre	
		Yield	Increase over Check
1	100 lbs. Ni. Sod., 200 lbs. Ac. Phos.	802.3	166.6
2	Check	635.7	
3	200 lbs. C. M., 200 lbs. Ac. Phos.	701.5	65.8
4	100 lbs. Ni. Soda, 100 lbs. Kainit	684.0	266.8
5	Check	417.2	
6	200 lbs. C. M., 100 lbs. Kainit	542.2	125.0
7	200 lbs. C. M., 200 lbs. Ac. Phos. 100 lbs. Kainit	790.0	238.2
8	Check	551.8	
9	200 lbs. C. S. Meal, 200 lbs. Ac. Phos. 200 lbs. Kainit	801.8	249.7
10	5 Tons Stable Manure, 200 lbs. Ac. Phos.	1346.7	562.7
11	Check	784.0	
12	5 Tons Stable Manure, 100 lbs. Kainit	1305.1	521.1
13	5 Tons Stable Manure, 200 lbs. Ac. Phos. 100 lbs. Kainit	1314.6	477.0
14	Check	837.6	
15	5 Tons Stable Manure	1254.3	416.7
16	200 lbs. Nitrate Soda	816.7	233.8
17	Check	682.9	
18	400 lbs. Cottonseed Meal	706.2	23.3
19	400 lbs. Acid Phosphate	759.6	49.0
20	Check	710.6	
21	200 lbs. Kainit	419.1	Loss 291.5

MISCELLANEOUS COTTON TESTS—In a test of regular cultivation versus alternately cultivating middles no increase in yield was obtained.

Tests are under way studying both time and method of applying fertilizer on which sufficient data for publication has not been obtained.

Records are being made on rotations using crimson clover, bur clover and vetch with corn and cotton. At present the clovers are growing nicely following cotton.

No spacing tests have been conducted on this station but the writer feels that attention should be directed to bulletin number 212 of the Mississippi Experiment Station dealing with this subject in detail. The many tests summarized show conclusively that close spacing is essential.

CORN

VARIETIES—Table nubmer 4 summarizes results from two years' variety tests on valley land without any fertilization. A study of this table will show a marked variation in both yields and quality of the different varieties.

TABLE IV. CORN VARIETY TESTS—1921-1922

	Variety	Total Bu. Gr. per A		Bu. No 1 Gr. Per A.		Bu. No. 11 Gr. per A		Tot'l Money Value per A		Rank in Mon. Val	
		1921	1922	1921	1922	1921	1922	1921	1922	'21	'22
1	Williamson	27.5	31.71	23.4	20.08	3.5	10.32	19.30	20.22	12	2
2	Biggs 7-Year	29.4	27.41	24.4	9.43	4.4	17.54	20.50	15.84	7	14
3	Whatley	28.1	29.33	25.3	23.73	2.6	5.60	20.27	20.60	10	1
4	Mosby-College	30.2	25.94	28.4	12.89	1.7	12.68	23.15	16.01	2	12
5	Mosby-Delta		27.86		12.75		14.59		16.86		8
6	Mosby-Ewing	30.5	29.63	26.8	17.25	3.4	11.92	21.80	18.90	3	4
7	Cocke-College	28.8	26.68	25.3	14.29	3.0	12.09	20.47	16.77	8	9
8	Cocke-Delta	29.2	28.24	26.0	11.20	3.0	14.45	21.00	15.63	6	15
9	Hastings Pro.	29.5	23.44	25.7	12.09	3.6	11.06	21.07	14.60	5	18
10	Vardaman		26.09		12.68		12.82		15.92		13
11	Marlboro	25.6	28.66	22.5	17.77	2.7	10.25	18.22	18.46	15	5
12	Leguna	29.5	35.82	26.5	12.97	2.8	15.69	21.27	17.58	4	6
13	Mexican June		25.42		12.65		12.06		15.52		16
14	Tenn. Red Cob	26.5	19.84	21.1	4.15	5.0	14.92	18.32	10,57	19	14
15	Paymaster	30.7	28.40	21.9	8.95	7.7	18.68	20.27	16.05	11	11
16	Ellis	35.6	29.70	32.2	20.88	3.0	7.91	25.65	19.62	1	5
17	U. S. No. 201		27.76		12.75		14.40		16.76		10
18	Florida Flint	29.0	26.59	24.3	8.69	4.3	17.25	20.37	15.15	9	17
19	N. C. Prolific	25.3	27.50	20.0	12.76	4.9	15.05	17.45	17.10	16	7
20	Reid's Yel. Dent	28.0	17.81	10.6	2.33	8.4	3.24	12.15	3.37	20	20
21	Calh'n Red Cob	22.9		20.0		2.7		16.35		18	
22	Payms'tr (Harp)	28.0		19.4		7.9		18.50		13	
23	Tenn. R. C.-72	20.4		14.6		4.6		13.50		19	
24	Chisholm	25.5		17.6		6.8		16.60		17	

MISCELLANEOUS TESTS—Crimson clover following corn and plowed under increased the yield of corn ten per cent the first year. In

this test crimson clover made excellent growth on all but the very thinnest soil.

Rotation and fertilizer tests are under way on which data is not yet ready for publication, however we obtained increases of from ten to twenty bushels of corn per acre on the very poorest hill land by the use of 200 pounds acid phosphate and 200 pounds nitrate of soda per acre.

TOMATOES

VARIETIES—Table number 5 shows results with two years variety tests conducted on valley land. Tomatoes in these tests were grown and graded according to commercial standards and results apply to the commercial grower rather than to the gardener.

TABLE V. TOMATO VARIETY TESTS—1921-1922

No.	Variety	Yields in Pounds		Average Size in Pounds		Per cent of Firsts		Per cent of Seconds	
		1921	1922	1921	1922	1921	1922	1921	1922
1	Dwarf Champion	40		.18		33		51	
2	Livingston's Globe	35.9	59.3	.19	.20	49	52	42	27
3	Early Detroit	41.5	82.5	.23	.18	59	54	28	24
4	Livingston"s Beauty	59.2	28.33	.25	.18	75	38	17	22
5	Red Field Beauty	51.2		.23		43		44	
6	Livingston's Man'ld	90.7		.16		62		36	
7	Matchless	77.4	70.6	.24	.19	65	47	27	30
8	Ponderosa	32.8		.39		27		47	
9	Acme	49.6		.23		50		42	
10	Red Rock	61.6	63.9	.25	.20	34	44	59	28
11	Improved Stone	75.5	38.83	.24	.18	53	48	39	26
12	Gulf States		74.90		.18		56		23

FERTILIZERS—Table number 6 gives the results of one years' work with varying proportions of potash. These tests are to be continued until the need of potash for commercial truck crops has been definitely determined for this section. In this table an 8-4-3 fertilizer means one containing 8 per cent phosphorous, 4 per cent nitrogen, and 3 per cent potash.

TABLE VI. TOMATO FERTILIZER TESTS—1922

Plat No.	Fertilizer Used 1200 Lbs.	Yield Total	Yield of Grade Lbs			Average size of		Per cent of			Earliness percent pulled 1st 4 pickings
			1sts	2nds	Culls	1sts	2nds	1sts	2nds	Culls	
1	8-4-0	81.8	13.5	18.5	49.9	.21	.16	16.5	22.6	61.0	10.4
2	8-4-3	73.5	12.0	13.96	47.5	.26	.19	16.3	19.0	64.7	4.8
3	8-4-6	85.0	9.3	15.6	60.1	.22	.17	11.0	18.4	70.7	5.7
4	4-4-0	80.7	18.9	23.8	37.9	.27	.20	23.4	29.6	47.0	5.9
5	4-4-3	72.8	17.1	17.7	38.0	.28	.21	23.5	24.3	52.2	4.6
6	4-4-6	73.7	17.2	22.5	34.0	.28	.20	23.3	30.5	46.1	1.6

MISCELLANEOUS

In addition to the projects previously mentioned this station is doing work with various clovers, vetches, soy beans, peas and other for-

age crops, and an orchard of peaches, apples and grapes has been started. Additional work will be started this year on varieties and fertilizers for several commercial truck crops and the trucking work will be given special attention for the next few years.

Careful records on all work are being tabulated and these results will be published from time to time as soon as sufficient conclusive data is obtained.

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