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Cotton production - Central Station, 1927

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COTTON PRODUCTION

CENTRAL STATION

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MISSISSIPPI AGRICULTURAL EXPERIMENT STATION
A. & M. COLLEGE, MISSISSIPPI
J. R. RICKS, Director

Recommendations

A cotton variety should be chosen after all conditions involved have been considered. Some of these conditions are marketing practices, type and attitude of labor, prevalence of cotton diseases, type and fertility of soil, and rate of fertilization.

As a rule, the cotton grower in the hill section can find a satisfactory variety among good Cleveland strains, D. & P. L. No. 4, Acala, Miller, and Lone Star, with possibly Delfos strains on fertile bottom soils.

The choice of a wilt resistant variety is restricted to Rhyne's Cook, Dixie Triumph, Miller, Lightning Express, and a few others more or less resistant.

Prepare a good seed bed and cultivate afterward to control weeds. Whatever is done, get the weeds. Allowing them to make seed is imposing a handicap on the following crop.

A fertilizer analyzing 8-6-4 or similar proportions is usually best, but conditions may require something different. Study conditions and fertilize properly. Plants will not grow without plant food from some source.

Plant enough good seed to secure a stand. Space plants two or three each foot to eighteen inches in rows three and one-half feet apart with a somewhat thicker spacing in three foot rows on thin soils. Secure a regular stand. Cotton is not produced on blank spaces.

COTTON PRODUCTION

By

J. F. O'KELLY and W. W. HULL

This publication reports recent variety experiments conducted at the Central Station and presents, in a brief manner, some of those practices which, if wisely followed, should make cotton production more profitable.

COTTON VARIETIES

Table 1 reports average results for certain varieties for five years. The period includes two wet seasons (1923 and 1926), two dry seasons (1924 and 1925), and a season (1927) nearly normal except for a late start. Only the most important data are given. It will be observed that the varieties are arranged in order of lint production and the rank in value is indicated.

TABLE 1. FIVE YEAR AVERAGE, 1923-27, A. & M. COLLEGE

Variety	Per acre		Rank in value	Percentage	Length	Bolls per lb.
	Lb. Lint	Total value				
Cleveland 54	457.5	115.18	3	34.5	15-16	73
Cook	457.2	106.10	7	39.1	7-8	77
Half & Half	449.1	101.71	10	40.7	13-16	72
Piedmont Cleveland	447.4	111.99	4	33.9	7-8 f	73
Trice	430.9	116.72	2	31.4	1 1-16	84
Acala	410.9	106.15	6	35.8	1 f	69
Delfos 6102	409.3	117.14	1	31.9	1 1-8 f	83
Miller	405.6	109.62	5	33.7	1 1-16	60
Wan. Cleveland	393.1	97.05	11	36.9	7-8	74
Lone Star	390.2	104.37	8	33.7	1 1-16 f	65
Lightning Express	343.5	102.56	9	30.7	1 3-16	82

Table 2, presenting a four-year average, is given in order that those interested in D. & P. L. No. 4 can make comparisons.

While an attempt has been made, in these and other variety tables, to give available and important data, the reader will observe that other considerations must be made. The attitude of labor toward varieties difficult to pick is becoming an important factor in many sections, while in other sections where soils are fertile or fertilizers are used liberally, this feature receives little consideration. Marketing conditions vary. It is possible for practically all growers to market cotton on its merits as to grade and staple, but comparatively few do so. As a consequence, the values used in these tables will not apply in all cases. The presence of a disease like cotton wilt must also receive attention. Where wilt infection is light, it may be best to use a prolific, susceptible variety and fertilize liber-

ally. Where infection is moderately heavy, a resistant variety should be combined with proper fertilizer practices. In severe cases of wilt infection, it may be best to grow crops other than cotton.

TABLE 2.—FOUR YEAR AVERAGE, 1924-27

Variety	Per acre		Rank in value	Percentage	Length	Bolls per lb.
	Lb. Lint	Total value				
Cook	495.6	104.25	8	39.5	7-8	80
Cleveland 54	485.8	111.13	2	34.4	15-16	74
Half & Half	481.0	98.01	11	41.2	13-16f	73
Piedmont Cleveland	472.2	106.63	5	33.9	7-8 f	73
D. & P. L. No. 4	469.8	113.32	1	36.6	1 1-16	73
Acala	440.2	104.53	7	35.7	1 f	69
Wan. Cleveland	440.1	97.76	12	36.7	7-8	74
Trice	439.6	106.79	4	31.4	1 1-16	85
Miller	426.1	105.67	6	33.5	1 1-16	61
Delfos 6102	419.4	109.35	3	31.7	1 1-8 f	84
Lone Star	412.9	101.01	10	33.7	1 1-16	65
Lightning Express	363.5	101.51	9	30.6	1 3-16	82

When all of these cotton production and marketing factors have been considered, it appears best for growers in the hill section of Mississippi to use vigorous growing varieties having a staple of an inch to an inch and an eighth, with the possible exception of semi-dwarf to dwarf varieties on fertile bottom soils. As an average proposition, vigorous growing varieties like D. & P. L. No. 4, Acala, and Miller, will do well on bottom soils, but the

TABLE 3.—STANDARD VARIETIES, 1927

Variety	Lbs. lint per A.	Total value per A.	Rank in value	Lint data			Bolls per lb.
				Percentage	Length	Cents per lb.	
Cook 1010	674.3	147.14	18	39.38	7-8	19.25	73
Acala	674.1	161.63	6	34.23	1	20.71	62
Cleveland Piedmont	672.3	158.91	7	32.41	15-16	20.09	68
Cleveland 54	667.8	158.63	8	33.05	15-16f	20.31	69
D. & P. L. No. 8	667.1	158.42	9	35.89	1	20.71	70
D. & P. L. No. 4	646.0	157.44	12	34.12	1 f	21.09	69
Cleveland Wilson	639.9	151.09	15	32.56	15-16	20.09	69
Trice, Miss. Sta.	633.1	161.74	5	30.70	1 1-16	21.71	78
Half & Half, M.	625.5	133.87	23	39.06	13-16f	18.75	67
Cleveland, Wan.	624.2	141.64	21	35.40	7-8 f	19.59	68
Willis	622.1	147.98	17	31.50	15-16	20.09	61
Cleveland, No. 5	617.6	157.89	11	32.48	1 1-16f	22.03	63
D. & P. L. No. 6	605.8	171.79	1	32.40	1 3-16	24.81	79
Delfos 911	599.9	166.31	2	30.29	1 1-8 f	23.81	76
Delfos 6102	580.5	162.04	4	29.29	1 1-8 f	23.81	75
Miller	577.5	143.29	20	31.35	1 f	21.09	60
Lone Star 168	571.3	145.35	19	33.26	1 1-16f	22.03	60
Delfos 1341	549.9	150.64	16	32.17	1 1-8 f	23.81	80
Lightning Express	549.0	158.29	10	29.71	1 3-16	24.81	74
Lone Star 65	540.5	136.11	22	32.87	1 1-16	21.71	62
Delfos 910	517.1	154.01	13	29.96	1 3-16f	25.81	67
Deltatype No. 5	515.6	162.79	3	28.22	1 1-4	27.25	68
Delfos 1374	514.4	153.77	14	29.40	1 3-16f	25.81	62

yields are low when rainfall during the growing season is excessive. The yields are low in poor seasons and high when seasons are nearly ideal. The use of varieties having a staple shorter than fifteen-sixteenths inch can hardly be justified except where no attempt is made to sell on a basis of staple length.

Table 3 is a report of results obtained from a test comparing standard varieties, most of which are available in commercial quantity. The test was planted April 27 in six replications. The early part of the season was too wet and fruiting was delayed a week to ten days by the cotton flea hopper. The latter part of the season was normal to dry. Some poisoning for weevil control was done during the first half of August, but light showers removed the poison before it had done a great deal of good. Very few bolls were set after the middle of August.

TABLE 4.—STANDARD AND NEW VARIETIES, 1927.

Variety	Lbs. lint per A.	Total value per A.	Rank in value	Lint data			Bolls per lb.
				Percentage	Length	Cents per lb.	
D. & P. L. 4128-32	570.1	140.81	1	36.25	1 1-16	21.71	85
Miller 3297	534.1	134.48	2	32.89	1 1-16	21.71	59
Miller 3286	533.1	129.98	3	34.05	1 f	21.09	60
Cleveland 54	526.0	119.63	7	35.03	7-8 f	19.59	78
D. & P. L. 52-310	504.9	118.24	8	38.55	1	20.71	79
Miller	504.6	123.54	5	33.38	1 f	21.09	62
Stoneville No. 2	477.6	119.65	6	36.00	1 1-16f	22.03	83
Cleveland No. 5	446.7	112.93	9	34.33	1 1-16f	22.03	71
Lightning Express	437.3	124.24	4	32.07	1 3-16	24.81	86
Miller 3291	435.9	107.75	11	31.90	1 f	21.09	63
D. & P. L. 2842-34	414.0	110.82	10	36.48	1 1-8 f	23.81	78
Cleveland 884	412.3	105.00	13	33.10	1 1-16f	22.03	72
Half & Half, M.	405.8	84.40	23	41.30	13-16	18.38	74
Delfos 6102	387.3	106.69	12	31.27	1 1-8 f	23.81	89
Delfos No. 2	369.4	104.76	14	32.39	1 3-16	24.81	87
Lone Star 285	361.2	95.92	16	34.37	1 1-8	23.31	71
Delfos 324	356.4	101.89	15	31.02	1 3-16	24.81	88
Stoneville No. 1	355.2	89.28	19	35.38	1 1-16f	22.03	70
Lone Star 65	349.5	86.93	21	34.96	1 1-16	21.71	71
Half & Half, L.	347.6	71.54	24	43.58	13-16	18.38	76
Lone Star 281	345.7	92.64	17	32.76	1 1-8	23.31	71
Lone Star 284	340.0	84.59	22	34.90	1 1-16	21.71	71
Foster No. 3	328.9	91.96	18	35.04	1 3-16	24.81	84
Deltatype No. 5	281.7	87.73	20	30.38	1 1-4	27.25	80

Table 4 should be of interest to growers who are looking ahead in cotton production. A few varieties are included which are standard and available in commercial quantity. Most of the numbers are new strains from various sources and represent, to some extent, material which will be available to growers in two or three years.

The planting date, seasonal conditions, cultivation, and insect damage were about the same for this test as for the preceding one. The soil used, however, was drier in nature and although fertilization was liberal in both cases, the vigorous growing types of cotton had a distinct advantage. This emphasizes further the wisdom of using hardy types of cotton on high, dry soils.

During recent years, reports of damage by cotton wilt (Fusarium vasinfectum), often called cotton blight, have been more numerous than in preceding years. These reports indicate that this cotton disease either is on the increase or growers are studying cotton more closely than formerly. It is entirely possible that there is a combination of these two conditions. As a result, the wilt problem has become sufficiently acute in scattered localities to require special attention.

TABLE 5.—WILT VARIETY TEST, 1927

Variety	Lbs. lint per A.	Total value per A.	Rank in value	Lint data			Bolls per lb.
				Percentage	Length	Cents per lb.	
D. & P. L. 4128-32	500.8	124.56	1	34.95	1 1-16	21.71	77
D. & P. L. 52-310	463.0	108.87	4	37.75	1	20.71	73
D. & P. L. No. 8	435.7	103.82	7	38.30	1 f	21.09	70
Dixie Triumph	421.7	98.60	9	34.05	15-16	20.09	73
Lightning Express	416.8	118.93	2	31.35	1 3-16	24.81	82
Miller	406.1	102.59	8	32.35	1 1-16	21.71	58
Watson	405.7	109.09	3	32.20	1 1-8	23.31	81
Super Seven	397.0	108.14	5	33.15	1 1-8 f	23.81	88
Cleveland 54	394.5	92.25	11	34.10	15-16	20.09	70
D. & P. L. No. 6	384.1	107.95	6	34.05	1 3-16	24.81	85
D. & P. L. No. 4	374.8	92.62	10	36.15	1 1-16	21.71	72
Cook, Rhyne	366.2	81.85	14	35.40	7-8	19.25	67
Lone Star 168	338.1	85.66	13	33.95	1 1-16f	22.03	72
Delfos 6102	313.4	86.59	12	30.80	1 1-8 f	23.81	88
Delfos 245	284.1	78.19	15	31.40	1 1-8 f	23.81	91
D. & P. L. 2842-34	283.0	76.89	16	33.60	1 1-8 f	23.81	80
Trice, Miss. Sta.	247.5	62.95	18	31.35	1 1-16	21.71	91
Delfos 1341	233.0	63.84	17	32.15	1 1-8 f	23.81	97

For several years, tests have been made comparing varieties for wilt resistance. These tests have been placed on soil naturally infected with wilt and three times in five years, this soil has been artificially inoculated with wilt spores. The results for 1927 are given in Table 5.

The comparative rating of wilt resistant and wilt susceptible varieties varies immensely from year to year. When the fruiting season is dry and long, wilt seems to do most injury and wilt resistant varieties appear at their best. When the season is short and wet with considerable weevil damage, early prolific varieties, which are usually wilt susceptible, do comparatively well. A great deal of this variation is due to the fact that nearly all wilt resistant varieties are somewhat late and only moderately prolific. Lightning Express seems to be the most outstanding exception to this rule at this time.

If wilt infection is moderately severe, a resistant variety should be used. Short varieties which have considerable resistance are Dixie Triumph, Rhyne's Cook, and Cleveland 54. Medium length varieties are Miller, which has considerable resistance, and D. & P. L. No. 4, which is semi-resistant. Staple varieties are Lightning Express, Super Seven, and Watson. Where wilt infection is slight, it is often best to use a prolific variety, provided proper fertilization is practiced. In case of extreme wilt infection, it may not be economical to attempt cotton production.

Regardless of the variety being grown, it is necessary to fertilize proper-

ly. The correct use of fertilizer on wilt infected soil will be as certainly profitable as on any other. It has been observed that wilt infected soils are nearly always deficient in plant food and that wilt seldom causes serious damage until the original fertility of the soil has been largely exhausted. The liberal use of nitrogen and potash has been found highly effective in enabling the cotton plant to tolerate wilt and phosphate is certainly essential on nearly all hill soils. At present it seems best to use a mixture having an 8-6-4 analysis. This mixture has been found most profitable for much of the hill section of Mississippi, particularly the east central portion.

The judicious use of animal manure should do much toward decreasing wilt injury. Livestock farms which grow practically all feed consumed seldom have manure which can be spared for cotton production, but liberal applications of manure, where it is available, to wilt infected spots will be very profitable.

The use of inoculated legumes, where they are turned into the soil, will perform the same function as the manure. Some winter legumes most suitable are several kinds of vetch (except on strictly lime soils), the Austrian Winter Pea, and Burr Clover. Perhaps the best summer legume is the Otootan soybean, with Biloxi and Mammoth Yellow in second and third place. Where considerable areas are wilt infected, a two-year rotation could be established. Some winter legume could be grown each winter, followed by soybeans the first year and cotton the second year. This rotation would, on many farms, be a drastic departure from the usual practice, but, if the legumes were inoculated and only the seed removed, the farmer woud have a real soil building program that would produce results.

CULTURAL PRACTICES

Safe cotton farming demands a well prepared seed bed. This may be obtained in several ways. Where the land is covered with a heavy growth of stalks, bean vines, or grass, flat breaking may be done in winter and the beds made a few weeks before planting. If the plant residue is not too great, the land may be bedded in the winter and rebedded a few weeks before planting. Other level land can be treated in the same way in the winter in order to lighten the labor load in the spring, but land subject to erosion or carrying cover crops cannot well be plowed until spring. Whatever the method used, the seed bed should be prepared in a way that will pulverize the soil well and long enough before planting that rains will settle the soil and make it firm. A loose seed bed is a handicap from which the crop often does not recover.

Cotton should be planted as soon as the danger from frost injury is over and the soil is warm enough for the seed to germinate promptly. Planting can usually be begun about the middle of April in the vicinity of A. & M. College. Planting can, of course, be started earlier farther south and should be later farther north. Dark, lime soils are usually ready for planting earlier than sandy soils. Planting before danger of frost is over is justified only where the farmer is ready and has seed to plant over if necessary.

The quantity of seed which should be planted to the acre will vary with the size of seed, the germinating percentage, and the width of rows. If the seed are high in quality and small or delinted, a half bushel will often

give a good stand, particularly if a hill drop planter is used. On the other hand, if the seed are big and poor in quality, and the rows narrow, a minimum of two bushels should be used or none at all. The safe quantity lies between these extremes and can be readily determined by an observing farmer. Using too little seed can be justified only where one is increasing a new variety for future planting. When it is purely a question of cotton production, being stingy with seed is false economy.

When the young cotton plants have begun vigorous growth, they should be thinned to two or three plants a hoe width in rows three and one-half feet apart where the land is moderately fertile or better. On thinner hill soils, it will usually be best to leave three or four plants a hoe width in rows three feet apart. It is assumed that a hoe width will vary from one foot to eighteen or twenty inches, depending on the laborer, the frequency of young plants, and the quantity of grass to be removed. The stand should be regular. Too many missing hills can easily lower the yield more than too few plants to the hill.

Aside from thinning the young plants to the desired stand, all cultural operations, including hoeing and plowing, should be aimed principally at weed control. While cotton is injured less by deep cultivation than many crops similar to corn, there is no good reason for cultivating more deeply than is necessary for weed control. Cotton should receive, as nearly as the season will permit, a shallow cultivation as soon after each rain as possible and, in dry periods, as often as necessary to kill weeds which may have germinated since the previous cultivation. Although no weeds may be present just after a rain, it is necessary to prevent the formation of a hard crust in order that it will be possible to cultivate when weeds do appear.

Because of the immense expense involved in adequate weed control in areas badly infested with coco, some farmers have experimented with checked cotton. Although this results in a slight decrease in the yield, the cost is materially decreased. Less hoeing is required and the power machinery used is efficient and cheap. The success of this method seems to justify its continuation.

Checked cotton is usually planted in hills three or three and one-half feet each way with a two-row planter with checking attachment. Planting is usually done on a flat seed bed after which drain furrows are made between the rows and in the direction in which the planting was done. The seeds are somewhat scattered when dropped and a cross cultivation should be given before any hoeing is done. This will eliminate plants which are out of line and when the hoeing is done, only those plants will be left which are in the right place. This practice reduces the trouble in later cross cultivations.

If checked cotton and the use of power cultivation, with a resulting increase in the acres per man, are to be extended widely, the change should be made gradually. It is generally agreed that the south as a whole can already produce more cotton than it can harvest promptly. The mechanical cotton .picker will probably arrive in a few years, but it is not now available and cotton growers should not make changes which will prevent prompt and economical cotton harvesting.

FERTILIZING COTTON

Many fields in the hill section of Mississippi are too poor to produce cotton economically. On many other fields, which are still fairly productive, the yield could be increased enough by the judicious use of fertilizer to make it profitable. Farming in many sections is slowly changing from a mining basis to one of manufacturing. That is, the raw materials in the form of fertilizer, seed, etc., must be supplied before profitable crops can be produced.

Nearly all thin lands in Mississippi require a complete fertilizer. This is always the case where cotton rusts and is usually the case where 600 pounds or more is applied to an acre. Where cotton does not rust, and where only small applications are being made, potash can usually be omitted.

A COMPLETE fertilizer is one that contains phosphorus, nitrogen, and potash. For example, an 8-6-4 mixture would contain 8 per cent phosphorus, 6 per cent nitrogen, and 4 per cent potash. The phosphorus in mixed fertilizers is nearly always supplied by super phosphate (acid phosphate). The grade usually sold on the market is 16 per cent, but the use of more concentrated forms is increasing and should be encouraged. Nitrogen is supplied by such materials as nitrate of soda, nitrate of potash, ammonium sulphate, calcium nitrate, leunasalpeter, urea, calcium cyanamid, cottonseed meal, and several other carriers. Potash can be supplied through muriate of potash, sulphate of potash, kainit, trona potash (another muriate), nitrate of potash, and a few other materials.

Experimental work covering the last three years indicates that a mixture having an 8-6-4 ratio of phosphorus, nitrogen, and potash is most generally profitable in the hill section of the state. In the south part of the state, excellent results have been obtained from 8-8-4 and 8-4-4 mixtures, while in the north part of the state, an 8-4-4 mixture has been generally most profitable, particularly where efforts are made to improve the soil by the use of legumes. As a general rule, the more legumes (if inoculated) and animal manure used in the cropping system the less nitrogen will be needed in the commercial fertilizers applied.

Experiments indicate that a complete fertilizer of the correct analysis will be most profitable when used at the rate of 500 or 600 pounds to the acre. On very thin soils this rate may be increased and, in general, it may be stated that the thinner the soil the higher the rate of application should be.

In general, mixed fertilizers should be applied ten to twenty days before planting. That is, it is desirable to have the fertilizer in long enough before planting that a rain will have settled the seed bed. On light sandy soils, it may be best to hold back a portion of the nitrogen and apply it as a side dressing immediately after the first hoeing. On heavier soils, apply all of the mixture before planting except where very heavy applications are being made, in which case, it may be desirable to apply a portion of the nitrogen as a side dressing.

Farmers who plan to side dress cotton should expend every effort to do the work on time. At the time of the first hoeing the labor requirement for cultivation is often heaviest and the beneficial effects of side dressing are often lost by getting the material around the plants too late.

The stand will sometimes be injured when fertilizer and seed are placed in contact. This is particularly true where the fertilizer is applied just at planting time and several days of dry weather follow. Fertilizer, when applied before planting, should be placed one to three inches below the seed or a little to either side. If these precautions are properly observed, fertilizer, even in heavy applications, should not injure the stand.

Many farmers object to the use of factory mixed fertilizers, and others object seriously to home mixing. Both parties are partly wrong. State laws and the desire to remain in business compel manufacturers to put out dependable mixtures. Factory mixtures will, as a rule, cost more per ton than the same plant food in raw materials for home mixing, but they will increase the yield as well as the same analyses home mixed, and sometimes better. Mixed fertilizer of the proper analysis, from a reputable mixer, is always worth the price.

On the other hand, many farmers can home mix to advantage. When properly planned, the work can be done when fields are too wet for outside operations and by labor which is usually doing nothing at such times. It will require work and willingness on the part of labor, and it will require study and attention to details on the part of the land owner, but these things are very desirable under any conditions. Laborers and land owners who do not possess these requirements must sooner or later be eliminated from agriculture.

For those who want to home mix fertilizer, the tabulation which follows will serve as a guide when mixing 600 pounds.

TO OBTAIN IN THE MIXTURE		
8% phosphorus use	6% nitrogen use	4% potash use
300 lbs. 16% super phosphate (acid phosphate)	240 lb. nitrate of soda, or 180 lb. Am. sulphate, or 138 lb. Leunasalpeter	50 lb. muriate of potash, or 50 lb. sulphate of potash, or 42 lb. Trona potash

It will be observed that mixtures made from the above tabulation will not total 600 pounds, but they will contain as much plant food as 600 pounds of an 8-6-4 factory mixed fertilizer. If 8 per cent nitrogen is wanted, use one-third more of the nitrogen carrier, and if 4 per cent nitrogen is wanted, use one-third less of the nitrogen carrier. Likewise, 200 pounds kainit can be used instead of other potash carriers.

MAINTAINING VARIETAL PURITY

There is a tendency in cotton varieties to degenerate. This tendency is probably least in those varieties which most nearly approach pure lines as a result of continued selection, and is probably greatest in those varieties which have had very little care and are largely plant mixtures. It is recognized that gin mixing is probably the greatest factor in cotton deterioration, but the trouble here considered is apparent through increase in the number of off-type plants, decrease in lint percentage, irregularity of staple, increase in the proportion of fuzzless seed, etc. These defects seem to increase even when gin mixing is avoided.

The average farmer can best keep good seed by securing, each

year or two, a few bushels of pure seed from a reputable breeder. These can be planted in a field far enough from other cotton to prevent mixing. The cotton thus produced can be picked and stored and then ginned when the bulk of the general crop is out of the way. If the gin is thoroughly cleaned, the seed thus obtained will be excellent for general planting and the process can be repeated each year or two with satisfactory results and little expense.

Cotton growers who have the training, inclination, and time may desire to do their own selection work. For these, mass selection or field selection is probably best. More complicated methods should be attempted only in rare cases, and by those who have had special training.

The one doing mass selection should go over his field after some of the bolls have opened and tag plants which appear to meet his requirements. A definite type of plant should be kept in mind and selections should conform to this type as nearly as possible. As a rule, production should receive first consideration. All plants which do not appear to be productive can be ignored. When a productive plant has been found, it should be studied for earliness, disease resistance, staple length, boll size, lint percentage, and other characteristics which are a part of the ideal in mind. When a plant approaches the standard sufficiently close, it should be tagged. These tagged plants should be picked later and all ginned on a gin that has been thoroughly cleaned. The seed obtained in this way can be planted sufficiently far from the other cotton the following year to prevent mixing and the work of selection can be repeated while the remaining seed from the increase field can be usd for general planting. Results can be obtained in this way although less rapidly than by more intensive plant breeding methods.

Cleaning gins when a change is made from one variety to another requires more work than ginners and growers usually appreciate. Dumping the seed roll is an essential part of the process, but requires only a very small part of the work involved. All conveyors in which seed cotton or seed can lodge must be examined. Cleaners, when used, will contain cotton which cannot be removed by simple turning. This work can be simplified by preparing two pieces of canvas as wide as the cleaner drum is long and long enough to wrap around the drum twice. These canvasses are padded with lint cotton, old sacks, or other material and then quilted together. When this contrivance is wound about the cleaner drum, the loose cotton can be rolled around to where it can be removed. The same process can be repeated on the feeder drum. A gin should not be called clean until seed cotton and seed can no longer be found in it.

Acala—L. E. Gleeck, Memphis, Tenn.
Cleveland, Piedmont—Piedmont Pedigreed Seed Farms, Commerce, Ga.
Cleveland, Wan.—Wannamaker Cleveland Seed Farms, St. Matthews, S. C.
Cleveland, Wilson—Lee Wilson Co., Wilson, Ark.
Cleveland, No. 5—Coker Pedigreed Seed Co., Hartsville, S. C.
Cleveland, 884—Coker Pedigreed Seed Co., Hartsville, S. C.
Cleveland, 54—Miss. Exp. Sta., A. & M. College, Miss.
Cook, Rhyne—Rhyne Bros., Benton, Ala.
Cook, 1010—D. N. Williamson Estate, Cedar Bluff, Ala.
D. & P. L. No. 4—Delta and Pine Land Co., Scott, Miss.
D. & P. L. No. 6—Delta and Pine Land Co., Scott, Miss.
D. & P. L. No. 8—Delta and Pine Land Co., Scott, Miss.
D. & P. L. 52-310—Delta and Pine Land Co., Scott, Miss.
D. & P. L. 4123-32—Delta and Pine Land Co., Scott, Miss.
D. & P. L. 2842-34—Delta and Pine Land Co., Scott, Miss.
Delfos 2—Stoneville Pedigreed Seed Co., Stoneville, Miss.
Delfos 245—Stoneville Pedigreed Seed Co., Stoneville, Miss.
Delfos 324—Stoneville Pedigreed Seed Co., Stoneville, Miss.
Delfos 6102—Stoneville Pedigreed Seed Co., Stoneville, Miss.
Delfos 910—Delta Branch Sta., Stoneville, Miss.
Delfos 911—Delta Branch Sta., Stoneville, Miss.
Delfos 1374—Delta Branch Sta., Stoneville, Miss.
Delfos 1341—Delta Branch Sta., Stoneville, Miss.
Deltatype Webber—Coker Pedigreed Seed Co., Hartsville, S. C.
Dixie Triumph—L. O. Watson, Florence, S. C.
Express, Lightning—Coker Pedigreed Seed Co., Hartsville, S. C.
Foster No. 3—Coker Pedigreed Seed Co., Hartsville, S. C.
Half & Half, L.—M. B. Lee, Corinth, Mississippi.
Half and Half, M.—H. K. Mahon, Holly Springs, Miss.
Lone Star 65—Miss. Exp. Sta., A. & M. College, Miss.
Lone Star 168—Miss. Exp. Sta., A. & M. College, Miss.
Lone Star 281—Miss. Exp. Sta., A. & M. College, Miss.
Lone Star 284—Miss. Exp. Sta., A. & M. College, Miss.
Lone Star 285—Miss. Exp. Sta., A. & M. College, Miss.
Miller—Miss. Exp. Sta., A. & M. College, Miss.
Miller 3286—Miss. Exp. Sta., A. & M. College, Miss.
Miller 3291—Miss. Exp. Sta., A. & M. College, Miss.
Miller 3297—Miss. Exp. Sta., A. & M. College, Miss.
Stoneville No. 1—Stoneville Pedigreed Seed Co., Stoneville, Miss.
Stoneville No. 2—Stoneville Pedigreed Seed Co., Stoneville, Miss.
Super Seven—Coker Pedigreed Seed Co., Hartsville, S. C.
Trice, Miss. Sta.—Miss. Exp. Sta., A. & M. College, Miss.
Watson—L. O. Watson, Florence, S. C.
Willis—Mrs. Stark Willis, Graysport, Miss.