ANALYSES and GUARANTEES
OF
FERTILIZERS
ON SALE IN MISSISSIPPI.


These bulletins will be sent free to any address upon application to State Chemist.
While many of the Southern States are giving a great deal of attention to the growing of the different small fruits for home use, and for market, in only a few localities has this industry received much attention in Mississippi. Our home markets being supplied largely with berries shipped in from adjoining States. This is especially true of Northeast Mississippi. Wherever small fruits have been grown for market the acreage has been increased, year by year, giving evidence of the fact that there are larger expectations of profit in this than in the lines of staple agriculture. To encourage a more general cultivation of these luxuries for our own tables, if not for market, is the chief aim of this Bulletin.

Proper preparation of the land, careful selection of varieties, timely and most economic methods of cultivation, intelligence in gathering, handling and shipping, and applications of suitable plant foods at the proper time, are the necessary conditions of success. To comply with these conditions has been my aim; knowing that quality and
condition of fruits when received in the market determine their commercial value.

**Strawberries.**—This deserving fruit has received, and is receiving, by far the greatest share of public attention. It is the first fresh fruit to come to our tables in the spring, the first to go on the markets, and therefore the first to put money into our pockets. Beautiful to the eye, tempting to the appetite, luscious and wholesome as food for our bodies, are qualities which easily make it the most popular small fruit.

The strawberry plant requires a liberal supply of water and a water-holding capacity of the soil. The best soil, therefore, is a moderately heavy clay loam underlaid with a good, stiff clay subsoil. This soil should contain enough vegetable matter to prevent too close compacting and assist in retaining moisture. For field culture of strawberries it has been found best to plant on slightly elevated ridges, to facilitate cultivation mainly. These ridges should be high in proportion to dampness and water-retaining properties of the soil. The rows should be three and a half to four feet apart. Set plants according to their habits of growth. Rampant growing varieties like Michel, Crescent and Cloud may be set twenty-four to thirty inches apart, while fifteen to twenty inches apart in the row is best for such varieties as Wilson, Lovett and Bubach. The matted row system is considered best in the South, and as the strawberry makes provision in the growth of one season for the fruit crop of the next—the chief aim in cultivation should be to secure a properly matted row of healthy and well developed plants.

About eighteen inches across, with plants standing four to six inches apart is considered an ideal row. If plants set too thickly, thin them out in late fall or early winter.

When there is ample moisture in the soil throughout the growing season it is easy enough to grow this ideal matted row of plants, but in the absence of facilities for irrigation when we have such protracted summer and fall drouths, accompanied by such intense sun-heat as we have
had the past two years, the growing of this ideal row can not be accomplished. The very best way to guard against the damaging effects of drouth is thorough preparation of the land when planting new beds, or in renovating old ones, and afterwards frequent shallow cultivations, maintaining a dust mulch to prevent the evaporation of water from the soil being the best, cheapest and most practicable mulch for the South. The fall season is probably the best time to set plants in Mississippi when there is sufficient moisture in the soil to insure the growth of plants. The land can usually be better prepared; work in other lines is not so pressing, besides if the planting is made in early fall the next spring crop of berries will more than pay for all expense of planting. Planting, however, may be done all through the winter and early spring months, but not so late as to prevent growth of plants from becoming well established before hot, dry weather sets in. In the application of fertilizers there is very little danger of using too much phosphoric acid and potash, but a too free use of nitrogen causes rank plant growth, and the fruit on such plants will be too soft and poorly colored to have much commercial value.

The varieties and names of strawberries run up into the hundreds, but it will be found in a careful variety test that there are very few kinds that do extra well in any one locality, or—at most—in any considerable area of country. soil characteristics, climatic and meteorological conditions—of course—make the difference. The above fact emphasizes the importance of Sub-Station Experimental work, and in order that the greatest number of people may derive the greatest amount of good from our State Experimental work, I believe there should be a Sub-Station—at least—in each Congressional District of the State, not necessarily for testing varieties of fruits, but along the lines of industries in which the people of each section are most interested. My work at Booneville was begun five years ago, and first and last, I have tested the merits of about fifty varieties of strawberries—keeping some varieties on
trial two years, others three and four years. All have been measured by the old tried and standard varieties Wilson, Crescent, Chas. Downing and Cumberland, with only a few exceptions all these varieties have failed to equal the old standards in desirable qualities. Some proved to be too soft and poorly flavored, some too small, some too uneven in size and irregular in shape, while others have ripened up unevenly, with hard, green tips, shy bearers, rusted foliage, etc.

I have worried a good deal over my failure with varieties whose merits have been so loudly praised by their introducers, but I have been somewhat comforted by the fact that the sesame varieties have—nearly all of them—behaved similarly, and have shared the same fate at all the experimental stations. It is disappointing, and surprising too, to know that out of the many hundreds of varieties introduced so very few of them possess sufficient merits to establish them as recognized standard sorts.

As a result of my work I can only recommend the following named varieties for general planting in Northeast Mississippi considered most valuable in the order named: Lady Thompson, Crescent, Bubach, Tennessee, Prolific, Brandywine, and Lovett. We must have a better early variety than Michel, and a better late variety than Gandy. When will we have an ideal, all purpose berry, equally well adapted to all sections, and under all climatic conditions? Never.

Raspberries.—This valuable fruit follows strawberries in time of ripening, and usually has a higher commercial value. My variety tests of this fruit have been quite limited, having had on trial only the following varieties: Turner, Thompson's Early and Gladstone (Red) and Nemeha, Palmer and Gregg (Black). Turner has done well, and Gregg fairly well. The other varieties have proven to be almost worthless here. Raspberries do well on the same soil recommended for strawberries, but I believe they would do better on a somewhat lighter soil. Rows should be four to five feet apart, and plants set two or three feet
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in the row. The land should receive thorough preparation before planting, and afterwards frequent shallow cultivation through the spring and summer months. Pinch the canes back during the growing season so they will require no staking. Prune bearing canes in winter, and remove and burn all dead ones. Fertilize as needed. Thin out plants to four to six to the hill.

Blackberries.—The wild blackberry is so common in Mississippi that little attention has been given the domesticated ones. Yet there is no bush fruit which should be more generally grown. It follows raspberries and is the last one of the small fruits to ripen, furnishing our tables well into the summer with no mean dessert. I doubt its value in Mississippi as a commercial crop, shipped to the Northern markets they suffer from competition with strawberries and raspberries, and in the South they seem to be regarded as common property, and even in our cities the people don't like to pay money for them. The cultivated sorts are much larger, and of better quality than those growing wild, and are very easily grown.

Any one who will go to the small trouble and expense of planting a small patch will enjoy many a pie, roll, or dumpling he will miss if he depends on marauding the old fields or his neighbor's fence corners for his supply. The blackberry, to do its best, requires a great deal of water, and as it ripens its fruit at a time when drouth is liable to seriously damage the crop, they should be planted on the best moisture-retaining soil to be had. Cultivate frequently till fruit begins to ripen and once after crop has been gathered. A most excellent way to prevent evaporation of water from the soil is to cultivate well in the spring, and then cover the ground well with a mulch of forest leaves or old corn stalks. The rows should be 7 or 8 feet apart and plants set two to three feet apart in the row. Pinch the buds out of growing canes when about three feet high, this causes laterals to be thrown out. Let these laterals or branches grow as long as they will, but the next winter cut them back to from twelve to eigh-
teen inches, at the same time cut away all dead canes which bore the previous summer's crop and burn them. Keeping the patch or field clear of rubbish is the best way to keep the bushes free from disease. It is said that a blackberry patch well cared for will last almost indefinitely. Four to six canes from each root is plenty thick, and if more than this number start in the spring they should be kept pulled off when only a few inches high. I have had on trial five varieties, Dallas, Snyder, Erie, Lawton, and Taylor ripening in the order named. All have done well, and given a succession of luscious berries for about six weeks. So far they have been entirely free from disease.

Grapes.—In reviewing my work, I feel that it would be inexcusably incomplete without giving briefly my experience with "The Fruit of the Vine." This small vineyard of thirty-three varieties, three vines of each variety, has elicited expressions of wonder, and admiration from all who have seen it. It has been an object lesson which is bringing the luscious clusters of this wholesome, and most popular fruit into hundreds of appreciative homes. Nearly every one of the thirty-three varieties have done well, demonstrating the fact that the grape is less sensitive to soil and climatic conditions than any other one of our cultivated fruits, varieties having their origen in the Northern and Eastern states do well even on our Gulf coast.

Most all of the varieties tested by me originated by T. V. Munson, of Denison, Texas, have done exceptionally well, and especially Big Extra, R. D. Munson, Dr. Collier, Rommel, Gold Coin, and Brilliant, of other sorts Champion, Progress, Ives, Lutie, Perkins, Concord, Niagara, Brighton, Triumph, Moore's Early, Missouri Reissling, and Pocklington have done best, Diamond Sun-blisters, I think sacking would prevent this. Eaton and Worden ripen too unevenly to be valuable for marketing. Of the varieties tested Pocklington, Triumph, and Reissling are the best late sorts. Moore's Early the best very early. My little experimental vineyard was planted in the springs of 1893-
'94 according to directions given in Bulletin No. 22, Mississippi Experiment Station, by Prof. Tracy. This Bulletin is worth more than its weight in gold to any one engaging in grape culture. It is so explicit in every detail that I deem it useless to give more than a brief summary of its instructions for planting in this bulletin.

Plant vines eight feet apart each way. Run rows North and South. Dig holes eighteen inches square, and at least fifteen inches deep. If to be had, put five to eight pounds of old bones in the bottom of each hole, fill the holes with good top soil and pulverize it as well as possible. One year old vines from cuttings are best, but two years old will do. The planting should be done as much as possible with the hands. Place the roots as nearly as possible in their natural position, and fill around them closely with good soil which is fine and mellow. At planting, cut the vine back to two buds immediately above the top of the original cutting, so the new growth will start from very near the ground. When the buds are well started nub off all except the strongest looking one, thus growing but one vine which should be kept tied, up as it lengthens, to a five foot stake set at the time of planting. It is best to trellis at once, but if work is pressing this may be deferred till summer or fall. The horizontal trellis is recommended. In making it, the posts are set sixteen feet apart, saw tops off square five or six feet from the ground. A cross piece of 2x4, two feet long is laid on the top of each post, and securely nailed at right angles to the direction of the row. Three No. 12 galvanized wires are stapled to these cross-pieces, one directly over the posts, and the others one inch from the ends of the cross pieces. When the growth of the vine has reached the center wire pinch off the top. The formation of laterals or branches now begins, and they should be so pinched back and directed as to cover all three of the wires with healthy bearing canes or vines. Very little summer pruning is done with the knife, but prune frequently with
thumb and finger. The ends of the bearing shoots are pinched off two or three leaves beyond the last cluster of fruit, and most of the barren shoots are removed. The important point to be remembered in pruning is, that all the fruit is made on wood which grew during the previous year, and enough of this should always be left to bear a full crop. Prune early in winter to avoid bleeding. Cut back the bearing shoots to from two to four joints according to the number of them on each vine. As no very explicit directions can be given for pruning in all cases, every grower must exercise his own intelligent judgment in the matter. If bones have been used as directed, a shovelful of wood ashes to the vine every year or two will be sufficient fertilizing; otherwise fertilize as needed, making sure that enough potash and phosphoric acid are used. Cultivate sufficiently often and thorough to keep the soil mellow and free from weeds.

The bulletins of this Station are sent free to all farmers in Mississippi who apply for them.

Address all communications to Agricultural Experiment Station, Agricultural College, Miss.