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W. L. Hutchinson

L. G. Patterson

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FERTILIZERS FOR COTTON.

W. L. HUTCHINSON.

L. G. PATTERSON.

AGRICULTURAL COLLEGE, MISS.

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FERTILIZERS FOR COTTON.

On account of the great importance of cotton to the South, and because of the early exhaustion of the soils on which it was grown, the manurial requirements of cotton on various soils have been carefully studied at a number of Experiment Stations and Colleges, and also by successful farmers and planters. The scope of these field tests embraced trials with all the fertilizing materials on the market. The various forms of Nitrogen, whether of mineral, vegetable or animal origin—as nitrate of soda, sulphate of ammonia, cotton seed meal, castor pomace, fish scrap, dried blood, tankage, Peruvian and bat guano—have been tried; Phosphoric Acid in its various forms of water-soluble, citrate-soluble and insoluble as found in acid phosphate, dissolved bones, ground bones, floats, and other phosphatic materials; Potash, as muriate, sulphate and carbonate, have all been tried alone and in combination with each other; in large quantities and in small quantities. These experiments have been repeated for a number of years. They have been tried on different classes of soils, so that we have a great deal of positive information regarding the fertilizer requirements of cotton.

The different forms of Nitrogen seem to be equally valuable for cotton. The same is true of the different forms of Potash. Of the different forms of Phosphoric Acid, the water-soluble is decidedly the most valuable.

The best results are obtained by different proportions of Nitrogen, Phosphoric Acid and Potash on different classes of soils. Some soils do not respond to commercial fertilizers at all.

SANDY LANDS.

Sandy and sandy-loam soils respond well to applications of fertilizers of all kinds. When properly managed, fertilizers pay on these soils. It is principally on this class of lands that the hundreds of thousands of tons of commercial fertilizers, sold annually for cotton, are used.

A fertilizer which contains two and a half per cent of Nitro-

gen, eight per cent. of water-soluble Phosphoric Acid, and two per cent. of Potash, is well adapted to cotton on this class of lands. Two hundred to six hundred pounds should be used per acre, though larger amounts may be used with profit.

RED LANDS.

Red sandy lands with clay subsoil do not need Potash yet. Hence it is a waste of money to buy Potash for these soils. Fertilizers for cotton on these soils should contain three per cent. of Nitrogen and eight to ten per cent. of water-soluble Phosphoric Acid. The same quantities should be used per acre as on sandy soils.

PRAIRIE LANDS.

Black and gray prairie soils, such as constitute the "Black Belt" of Alabama and the Northeast and Central Prairie Regions of this State, do not respond to fertilizers. Fertilizers in large quantities frequently fail to increase the yield of cotton a particle.

These lands are still very rich in plant food, and their "exhaustion," or failure to produce cotton as they formerly did, is due to their wretched mechanical condition. By tile drainage, the growth of tap-rooted plants—such as Melilotus, Red Clover and Cow Peas—and deep plowing, the mechanical condition of these soils can be readily improved, so that large crops of cotton may be grown, as in former years when their yield was from one to two bales per acre. If these lands were managed properly they could be made to yield cotton as bountifully as the rich Delta region of this State.

YELLOW LOAM LANDS.

The results obtained from the experiments which have been made indicate that Potash is more needed for cotton than any other one ingredient, though a fertilizer which contains a small amount of Nitrogen and water-soluble Phosphoric Acid and a high percentage of Potash seems to more adequately meet the demands of these lands.

BLUFF FORMATION.

The brown loam soils of the Bluff Formation respond well to fertilizers. According to experiments made for three or four years on this class of soils at Baton Rouge, La., the requirements for cotton on these soils are similar to those on sandy-loam soils. They respond well to a fertilizer which contains three per cent. of Nitrogen, eight per cent. of water-soluble Phosphoric Acid, and two per cent. of Potash, when applied at the rate of two to four hundred pounds per acre.

STABLE MANURE.

The value of stable manure varies from about \$2 to \$13 per ton. The difference in value is principally due to the kind of animals from which it is obtained, the food of the animals and the manner of collecting and keeping the manure. One of the best methods of keeping manure is to allow it to accumulate in the stalls where the animals are kept, enough litter being placed in the stalls to keep them dry. The manure obtained by feeding the proper proportion of good hay with cotton seed or cotton seed meal or corn is of the most valuable kind. To allow stable manure to heat, or to be leached by rains, is very injurious and may render it practically worthless. Stable manure readily undergoes chemical changes, in most of which there is loss of fertilizing ingredients, hence the greatest good is obtained when it is scattered on the land while fresh and plowed under.

COMPOST.

A compost made of a hundred bushels of stable manure, a hundred bushels of cotton seed and a ton of Acid Phosphate, when mixed thoroughly to obtain uniform composition, makes a good fertilizer for cotton. Four hundred to six hundred pounds should be applied to the acre.

HOW FERTILIZERS SHOULD BE APPLIED.

All commercial fertilizers, as well as the above compost, when applied in quantities less than a thousand pounds per acre, should be applied in the drill. The best results are obtained when the fertilizer is mixed with the first three inches of the soil. Stable manure should be scattered broadcast on the land as it is hauled to the field.