

### FERTILIZERS FOR SOUTHERN FARMS.

#### The Georgia Experiment Station Suggests Formulas for Common Crops and Advises Home Mixing of Fertilizers.

The fertilizer tests, conducted during the year 1902, both on corn and cotton, do not indicate that any change should be made in the formulas that have been heretofore recommended. They are therefore repeated without change, except in some minor details that are intended to make them even more intelligible. Attention is especially directed to the modification suggested when the fertilizer is applied to soils that have been improved by a regular system of rotation of crops (including a free use of cow-pea vines,) and liberal manuring; or to more or less recently cleared lands; or to bottom lands; or to any soils in which the rank growth of "weed"—in the case of cotton—indicates that the supply of nitrogen in the soil is relatively greater than on the average uplands.

Farmers are again urged to buy standard acid phosphate, or acid phosphate with potash, muriate (or kainit) and cotton-meal, and mix according to the formulas which follow. By so doing they will be able to save \$3 to \$5 a ton, and at the same time better adapt the fertilizer to the crop to be fertilized.

#### Formula No. 1.—For Corn:

On the average worn and so-called "exhausted" up-lands soils of Middle Georgia:

|  | Pounds. |
|--|---------|
| Acid phosphate (14 per cent.)                                      | 1,000   |
| Muriate of potash (50 per cent. (or kainit 12½ per cent 120 lbs.)) | 30      |
| Cotton-meal (2½:1½:7)  | 1,250   |
|  | 2,280   |

This would analyze about as follows:

|                                  | Per Cent. |
|----------------------------------|-----------|
| Available phosphoric acid        | 7.50      |
| Potash                           | 1.48      |
| Nitrogen (equal to ammonia 4.65) | 3.83      |

This is relatively the same as 10:2:5. Cost, \$18.00 per ton.

The mixture would be rendered more prompt in effective action by substituting, in place of 400 pounds of the cotton-meal, about 200 pounds of nitrate of soda. The practice at the Station Farm is to apply about 20 to 30 pounds of nitrate per acre at the time of planting, scattering a small pinch of it not nearer than 3 or 4 inches of the seed corn.

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#### Formula No. 2.—For Cotton:

On average worn and so-called "exhausted" Middle Georgia up-lands:

|                                  | Pounds. |
|----------------------------------|---------|
| Acid phosphate (14 per cent.)    | 1,000   |
| Muriate of potash (50 per cent.) | 75      |
| Cotton-meal (2½:1½:7)            | 700     |
|                                  | 1,775   |

This would analyze about:

|                           | Per Cent. |
|---------------------------|-----------|
| Available phosphoric acid | 8.87      |
| Potash                    | 2.70      |
| Nitrogen                  | 2.70      |

(Should cost about \$17.00 per ton.)

On well improved soils, or comparatively new lands, or bottom lands,

the cotton-meal may be reduced from one-third to one-half in either of the foregoing formulas. On thin, piney-woods, sandy soils, the muriate (or kainit) may be increased by from one-third to one-half more.

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#### Formula No. 3.—For Irish Potatoes:

|  | Pounds. |
|--|---------|
| Acid phosphate (14 per cent.)  | 1,000   |
| Muriate of potash (50 per cent. (Or preferably, sulph. of potash 250 pounds.)) | 250     |
| Nitrate of Soda  | 420     |
|  | 1,670   |

Total

The above would analyze:

|                           | Per Cent. |
|---------------------------|-----------|
| Available phosphoric acid | 8.38      |
| Potash                    | 7.48      |
| Nitrogen                  | 4.02      |

(Should cost about \$20.00 per ton.)

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#### Formula No. 4.—For Sweet Potatoes:

|                                  | Pounds. |
|----------------------------------|---------|
| Acid phosphate (14 per cent.)    | 1,000   |
| Muriate of potash (50 per cent.) | 500     |
| Cotton-meal (2½:1½:7)            | 1,100   |
|                                  | 2,600   |

Total

This would analyze:

|                           | Per Cent. |
|---------------------------|-----------|
| Available phosphoric acid | 6.40      |
| Potash                    | 10.24     |
| Nitrogen                  | 3.96      |

(Should cost about \$22.00 per ton.)

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#### Formula No. 5.—For Cow-peas:

|                                  | Pounds. |
|----------------------------------|---------|
| Acid phosphate (14 per cent. av) | 1,000   |
| Muriate of potash (50 per cent.) | 100     |
|                                  | 1,100   |

Total

This would analyze:

|                           | Per Cent. |
|---------------------------|-----------|
| Available phosphoric acid | 12.73     |
| Potash                    | 4.54      |

(Should cost about \$14.00 per ton.)

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#### Formula No. 6.—For Watermelons, Cantaloupes, etc.:

|  | Pounds. |
|--|---------|
| Acid phosphate (14 per cent.)                      | 1,000   |
| Muriate of potash                                  | 250     |
| (Or kainit, 1,000 pounds.)                         |         |
| Cotton-seed meal                                   | 1,000   |
| (Or cotton-seed meal 500 and nitrate of soda 250.) |         |
|  | 2,250   |

Total

Cost about \$22.00 per ton, and if using muriate, cotton-seed meal and nitrate the analysis would be about 8.00:7.00:3.62.

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#### Formula No. 7.—For Garden Vegetables generally:

|  | Pounds. |
|--|---------|
| Acid phosphate (14 per cent.)                              | 1,000   |
| Muriate of potash (50 per cent. (Or kainit 1,000 pounds.)) | 250     |
| Cotton-seed meal, 2½; 1½; 7.                               | 1,500   |
| (Or cotton-seed meal 1,000 and nitrate of soda 250.)       |         |
|  | 2,750   |

Total

Cost about \$20.00 per ton. Using acid, muriate and meal alone would analyze about 5.00; 4.00; 2.00.

This formula is suggested for the broadcast dressing of the garden, and the whole of the formula may be applied to an area of one to two acres, and proportionately to smaller areas, reserving the nitrate to be

used at time of planting and later, as in case of Irish potatoes.

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On fresh soils and on bottom lands, the proportion of these two elements (potash and nitrogen) may very properly be diminished by 25 to 50 per cent, especially when light manuring is intended. In many cases when only a light application of fertilizer is intended on such soils, acid phosphate alone will answer. This is especially indicated when the tendency to luxuriance of "weed" and late and imperfect maturity of the seed is manifest.

In all the formulas the phosphoric acid is mainly supplied by acid phosphate, which is the cheapest and best source of this most important (because most needed) element. The potash is suggested in the form of muriate of potash, because that is usually the cheapest form in which potash is procurable. For use on corn, cotton and peas, it answers the purpose admirably; but for Irish and sweet potatoes, tobacco, and possibly some other crops, it would be better to substitute sulphate of potash, or cotton hull ashes, or even common wood ashes (when available). But a farmer should be careful not to mix ashes with acid phosphate, unless all the ingredients be perfectly dry, because of the danger of the potash and lime of the ashes causing the reversion of the soluble phosphoric acid. The same caution should be observed not to mix ashes (or lime) with decomposed (rotted) stable manure. There is no objection, however, to mixing these caustic ingredients with cotton-seed meal.

In some of the formulas, the nitrogen is presented in the form of cotton-meal; in others, in the form of nitrate of soda. In the latter case, i. e. in Formulas 3 to 6, the nitrate of soda is preferable, because it acts more quickly.

Whenever, for any reason, it is desired to substitute one ingredient for another, to supply the same element, it may be done on the following basis:

1. For each 1 pound of nitrate, 2 pounds of cotton-meal, or 5 pounds of whole or crushed cotton seed, or 2½ pounds of cotton-seed kernels ("meats") or 1 pound of high grade dried blood may be substituted.

2. For each 1 pound of cotton-meal, ½ pound of nitrate of soda, or 2½ pounds of cotton seed, or 1¼ pounds of cotton-seed kernels ("meats") may be substituted, or ½ pound of high grade dried blood.

3. For each 1 pound of muriate of potash, 4 pounds of kainit, or 1 pound of high grade sulphate of potash, or 10 pounds of dry unleached hardwood ashes, or 2 pounds of cotton hull ashes may be substituted.

#### STABLE MANURE COMPOSTS

In all of the above formulas, excepting No. 5, stable manure may enter as an ingredient, without necessarily displacing any one of those already named and without materially altering the proportions. The stable manure may be used in any convenient or desired quantity. Composting several weeks before distrib-

uting in the soil does not seem to add materially to the effectiveness of the mixture. If the manure is well decomposed it will do just as well to mix all together and deposit in the soil a few days before planting, or separately one after the other the same day, as to mix in a heap weeks beforehand, and will involve considerably less labor of handling.

#### HOW TO MIX IT.

It may be—it often is—necessary to run through a riddle or screen some of the ingredients. An ordinary sand screen will answer very well. Weigh out the required amount of each ingredient necessary to make a given part of one ton, say 500 pounds, and mix with hoes and shovels on a tight floor or a smooth, hard place on the ground. Sometimes it will facilitate after-handling if the mass be sprinkled with water sufficiently to prevent flying away with the wind.

#### HOW MUCH FERTILIZER TO THE ACRE.

The formulas, for convenience, are all based on 1,000 pounds of acid phosphate, as this is the most important ingredient.

For Corn—Very large applications are not advised. Apply enough of any mixture that may be made according to Formula No. 1 to get from 100 to 200 pounds of acid phosphate to the acre.

For Cotton.—Apply enough of any mixture based on Formula No. 2 to get from 200 to 400 pounds of acid phosphate per acre.

For Irish Potatoes, etc.—Apply enough of Formula No. 3 to get 300 to 600 pounds acid phosphate to the acre.

For Sweet Potatoes.—Apply enough of Formula No. 4 to get from 200 to 400 pounds of acid phosphate.

For Cow-peas.—Apply enough of Formula No. 5 to get from 200 to 300 pounds of acid phosphate per acre.

For Melons.—Apply enough of Formula No. 6 to get from 200 to 300 pounds of acid phosphate per acre.

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Sanford Express: Mr. Henry Petty, of the Petty Fruit Growing and Canning Company, was in town the first of last week. He tells the Express that the frost has killed about one-fifth of his peaches, but that there are more than enough left to make a big crop. Mr. Petty expects to put out about 30 acres in strawberries, blackberries and dewberries this season. He will then have about 60 acres in berries, and 200 in fruit of all kinds. This is one of the largest fruit farms in the State. Mr. Petty received good prices for his fruit last year, all of which was shipped in refrigerator cars and reached the markets in good condition. He says the prospects for a good fruit crop this year are fine.

A battleship that is five years old is as out of date as an egg fried three hours ago.