

CORN CULTURE.

Article by R. J. Redding, of Georgia, Who is Now Conducting Farmers Institutes in North Carolina.

For seventeen consecutive years the experiments in corn culture at this station have been under the same direction and superintendence, on the same farm. It is reasonable to expect that some definite conclusions have been reached that should be of practical value to the farmer. The above statement, in substance, was made in Bulletin No. 46, issued in November, 1899 and contains conclusions and suggestions were submitted under the head of "Ten Years of Experiments in Corn Culture." Seven more years of experiments—many of them repetitions of former work—have continued all that was claimed at the date of that bulletin, and the results of new experiments have justified some additions to the suggestions and conclusions to be set forth. The following, therefore, is largely a reprint of the article referred to, but containing a few amendments and additions.

Soils and Preparation.

Character of Soil.—The best soil for corn is moist bottom land. On uplands the red or chocolate colored soils, with red clay subsoils are better for corn than the gray soils with yellow clay subsoils. But it is advisable, especially on uplands, to adopt a system of rotation, and therefore it is not often practicable to locate the entire corn crop on a particular character of soil. As a rule, corn should follow cotton in the rotation.

Preparation.—Thorough breaking with a two-horse turn-plow, gradually increasing the depth every year. Eight inches deep is considered good plowing. If there is much grass, weeds and other litter on the surface it is advisable to plow under in October or November. If the land is clean (as cotton stubble) plowing may be deferred until January and February. After plowing, the surface should be well harrowed, and repeated at intervals until the surface is fine and smooth.

Subsoiling.—Repeated experiments in subsoiling the soils of the Station Farm indicate that the results in increase of yield do not pay for the increased expense of the operation.

Planting.—Very early planting is not advised. In Middle Georgia, as a rule, March 15 to 20 is early enough for the earliest plantings. Indeed there are good reasons to believe that corn planted a month or six weeks later—late enough to escape the "bud worm" and to silk and tassel the latter part of July—would, as a rule, prove more productive.

Distance.—On uplands capable of producing, of a good year, 25 to 40 bushels of shelled corn per acre, and when planting ordinary field varieties common in the South, there should be about 3,630 plants to the acre. This number would be secured by planting in rows 4 1-2 feet wide and spacing the plants 32 inches apart; or 4 feet by 36 inches; or 3 1-2 feet by 3 1-2 feet.

If the soil is of a capacity to produce from 15 to 25 bushels greater distance should be given, say 16 square feet to the plant, or 2,722 plants to the acre. This number would be secured by spacing the rows and hills 5 feet by 38 1-2 inches; or 4 1-2 feet by 32 inches; or preferably, 4 feet by 4 feet.

On soils of still less capacity, say from 10 to 15 bushels per acre, the distance should be still greater, say 18 to 24 square feet to the stalk, or from 2,420 to 1,815 hills to the acre. Eighteen square feet to the stalk would be secured by spacing 6 feet by 36 inches; or 5 feet by 43 inches; or 4 feet 3 inches by 4 feet 3 inches. A soil that would produce less than 10 bushels per acre, with good seasons and very light manuring, is not fit to plant in corn.

Spacing.—For the largest yields the plants should be as nearly "on a square" as may be convenient. Corn planted 4 by 4 will yield more than if the same soil be planted 5 feet by 38.4 inches—the number of plants per acre being the same in each case. But the narrower the rows the greater will be the cost of cultivation. Hence, on more productive uplands the rows should not be closer than 4 feet, or thereabouts.

Fancy Planting.—Double rows and other similar plans of spacing the plants, must be considered as fanciful, and of no advantage, but resulting in loss of yield.

Varieties.—As a rule it is advisable to secure seed corn every few years from a higher altitude and latitude, not farther north than latitude 36 or 38. Seed corn from North and Middle Georgia, Middle and East Tennessee, Southwestern Virginia, Western North Carolina and Northern South Carolina have given best results as a rule.

Seed from Different Parts of the Ear.—Selections from the small end

of the very "big" have usually given as good results as grains from the middle or from the butts.

MANURING.

Corn requires a highly nitrogenous fertilizer. The average "guanos" sold in the market do not contain enough nitrogen for corn on old uplands. The best proportions of the three elements for such soils is available phosphoric acid, 10 per cent; nitrogen, 5 per cent; potash, 2 per cent.

It is better for the farmer to buy the ingredients and do his own mixing. The following is a good formula for corn, on old worn uplands:

Acid phosphate (14 per cent. Available)	1,000 lbs.
Cotton meal	1,218 lbs.
Muriate of potash	33 lbs.
	2,251 lbs.

The above would analyze about: Available Phosphoric 7.58 per cent. Nitro. (Am., 4.80) 3.76 per cent. Potash (K O) 1.50 per cent.

The proportion is about the same as 10:5:2. Instead of the muriate of potash, 4 times as much kainit may be substituted.

Instead of the cotton meal, 2 1-2 times its weight of whole or crushed cotton seed may be substituted, or 1 1-4 times as much cotton seed kernels.

Stable manure may be mixed with the above formula in equal or greater quantity; the amount would not be material.

On new lands or bottom lands, the cotton meal may be reduced and the potash greatly reduced or left out entirely.

Heavy Manuring.—Owing to the uncertain outcome of a corn crop on dry uplands, and to other causes not well understood, it does not pay to fertilize corn very liberally. Three hundred pounds to the acre of the formula above given, or an amount that would contain about 150 pounds of acid phosphate to the acre, is about the maximum amount that would be safe to apply.

Composting.—No great advantage results from composting stable manure, cotton seed, acid phosphate, etc., several weeks in advance of applying to the soil, in comparison with applying the same material, directly in the furrows and bedding on them.

Applying Manures.—All coarse manures should be applied as long before planting as may be practicable. Broadcast manuring, unless of large applications of coarse material, does not give as good results as applying in the planting furrow, or the bedded furrow. After the land has been well plowed and harrowed as already described, lay off the rows the desired width, from one to two weeks before planting time, distribute the fertilizer along in the opening furrows and mix it with the soil by running a narrow, long plow in the furrow, and list on the furrow.

Nitrating.—Very good results have followed the application of 15 to 20 pounds per acre of nitrate of soda, dropped within a few inches of the plant seed at time of planting, and the practice is recommended.

Intercultural Applications.—There is no material advantage in dividing the fertilizer into two or more doses, one before planting, one at planting, and one or more at intervals during the cultivation. Nitrate of soda should never be applied before planting and one or two slight doses may be profitably applied during cultivation, say 25 to 50 pounds per acre at a time, but not later than June 20.

Cotton Seed as a Manure.—Repeated and carefully conducted experiments have conclusively shown that it is not expedient to apply sound cotton seed, either whole or crushed, to corn, if the same may be exchanged for cotton meal on a reasonable basis. As a fertilizer 800 to 900 pounds of cotton meal are the equivalent of a full ton of cotton seed, the two substances in the amounts named containing practically equal amounts of phosphoric acid, nitrogen and potash. The cotton seed hulls are worth two to three times as much for cattle feed as their value as a fertilizer. The oil contained in the seed is of no value as a fertilizer and is an absolute loss when the seed are used directly as a fertilizer. (See Experiments No. 2 and 3 in this bulletin.)

CULTIVATION.

It is a good practice to broadcast harrow the cornfields about the time the plants are coming up, and it may be done to advantage until the plants are several inches high, using a harrow with slantback teeth or a weeder.

Plowing should be at intervals

not greater than 17 days, using a shallow, wide-spreading cultivator. One inch to two inches is a rule. Cultivation should continue until, when the plants are coming up, appear, and at this time cultivation should be more frequent at the rate of 2 or 3 times per week.

PLANTING.

Pulling Plants.—As a rule, pulling of the blades does not seriously injure the corn, if not done too early; but it is a laborious process and should be discontinued. Pulling off all the blades kills the plant as effectively as if it be cut down at the surface.

Stonking and Shredding.—It is far better, every way, to cut down the stalks when the grain is green and the chink commences to fade, put 150 to 250 stalks in a sheaf, and when dry, stink on the ear and aired the stover. The resulting corn stover hay is an excellent and valuable food for horses, mules and cattle, and the yield of grain is not sensibly diminished, in comparison with any other method of harvesting.

The Cause of Many Sudden Deaths.

There is a disease prevailing in this country most dangerous because so deceptive. Many sudden deaths are caused by it—heart disease, pneumonia, heart failure or apoplexy are often the result of kidney disease. If kidney trouble is allowed to advance the kidney-poisoned blood will attack the vital organs, causing catarrh of the bladder, or the kidneys themselves break down and waste away cell by cell. Bladder troubles almost always result from a derangement of the kidneys, and a cure is obtained quickest by a proper treatment of the kidneys. If you are feeling badly you can make no mistake by taking Dr. Kilmer's Swamp-Root, the great kidney, liver and bladder remedy.

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Senator Overman and Education. Elsewhere in this issue will be found a personal letter from Senator Lee S. Overman. He rings clear on the subject of education and is not afraid to let his voice be heard, not on both sides of the question, but one side and that the side of the children.

It is a glorious day for the children of our commonwealth when the United States Senators, Governors, and Ex-Governors go into the highways and hedges and plead the cause of the children.

We say hurrah for Senator Overman. He is good enough to succeed himself in the United States Senate.

—Catawba News.

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