THE PROGRESSIVE FARMER

THE INDUSTRIAL AND EDUCATIONAL INTERESTS OF OUR PEOPLE PARAMOUNT TO ALL OTHER CONSIDERATIONS OF STATE POLICY.

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Agricultu

SUMMARY OF RESULTS OF FERTILIZER EXPERIMENTS DURING 1900.

Correspondence of The Progressive Farmer.

At the Tennessee Experiment Station last year experiments were made in order to determine the kinds of plant food—whether phosphoric acid, potash, or nitrogen—and the combinations most needed by different soils; others were planned to be of more general application. To this latter class belong in particular the cow pea experiments and the comparisions between cotton seed meal and nitrate of soda as sources of nitrogen for potatoes

A bulletin just issued by Chemist Charles A. Mooers says:

"The results are such that the following conclusions seem warranted: First, that these is need of an improved grain and fertilizer drill which will put the fertilizer either beneath the seed or to one side of the seed so that in either case the fertilizer and the seed will be separated by a layer of soil; second, that of the nitrogenous fertilizer mixtures sold on the market only those which contain slow acting sources of nitrogen, such as low-grade tankage or bone, can be safely drilled in contact with the seed of the small grains and then only in limited amounts; third, that potash salts and the quicker acting and more desirable sources of nitrogen, such as cotton seed meal, blood and nitrate of soda, and in general, large amounts of any fertilizer cannot safely be used in contact with the seed."

A careful study of the experiments also shows the following facts regarding the crops named:

POTATOES.

1. The most profitable returns came from a complete fertilizer containing high percentages of all three elements, nitrogen, phosphoric acid, and potash.

2. As a source of nitrogen, cotton seed meal gave in every instance more profitable returns than nitrate of soda.

3. Nitrate of soda mixed with cotton seed meal was not profitable

4. Potatoes fertilized with nitrogen, phosphoric acid, and potash averaged 2.74 per cent. higher in starch than the unfertilized and one per cent. higher than those fertilized with nitrogen and phosphoric acid without potash.

5. Potatoes grown on the Cumberland Plateau averaged 0.79 per cent. higher in starch than those grown in the Tennessee Valley.

CORN.

1. The yield of corn grown on river bottom land where a rotation of corn, oats, clover, and grass had been practiced was not profitably increased by any kind of fertilizer.

2. The yield of corn on land which was of more than average productiveness but which had been cropped in corn and small grains consecutively for many years was profitably increased by heavy applications of acid phosphate and nitrate of soda.

3. The need of phosphoric acid was demonstrated more clearly than that of any other element.

4. The grain from plants fertilized with nitrogen averaged higher in nitrogenous substance (protein) than that from plants fertilized only with the mineral elements, phosphoric acid potash.

COW PEAS.

1. On exceedingly poor soil nitrogen was not found of any advantage so far as the yield of either peas or hay was concerned, but gave a marked increase in the yield of the crab grass which grew among the pea vines.

2. Phosphoric acid used alone produced a larger yield of the peas (fruit) than when potash was used with it.

3. Phosphoric acid and potash produced a larger yield of hay than the phosphoric acid alone.

4. Potash used alone was not profitable.

PEANUTS.

Nitrogen when added to phosphoric acid and potash did not increase the yield but lowered the grade of the nut by producing a thicker hull.

GERMINATION OF SEED.

1. Fertilizers have a decidedly unfavorable effect on the germination of seed so that they can seldom be safely used in direct contact with the seed.

2. The present method of drilling the fertilizer with the wheat is highly unsatisfactory by preventing the safe use of even moderate amounts of high grade fertilizers, which contain cotton seed meal, blood, tankage, nitrate of soda or potash salts.

GENERAL CONCLUSIONS.

1. Every farmer should make fertilizer experiments to determine the special requirements of his soil.

2. Every farmer should make his own fertilizer mixtures to suit his soil and crop.

A. W. S.

Knox Co., Tenn.

CORN AS GRASS FOR STOCK.

Correspondence of The Progressive Farmer.

Where it is impossible to raise a good crop of grass for hay, or where the soil and seasons make the crop uncertain, it is far better to raise corn instead of grass. Corn should be raised both for the silo and as dry fodder to take the place of the grass. On land where good timothy will not grow, large crops of corn can be raised, and in nearly every instance it is cheaper. It is not cheaper to plant an acre of corn for the silo and dry fodder, but the yield is so much more to the acre that the difference in the end is in favor of the corn. Not enough corn fodder and corn for the silo is raised by stockmen. They still put too much faith in the range pasture, in grass that is only poor in nutriment, and in hay that contains little real nourishment, and costs a good deal to raise. Two good bundles of corn fodder should be sufficient to keep a cow or steer a day in winter without bran or grain. Cows giving milk would get sufficient from the same diet if a little bran or oil meal was added each day. If a little ensilage could be given to make the food more succulent and juicy, a cheap and satisfactory ration would be had for the whole winter.

Corn planted as grass and hay should yield enormously per acre. On many farms from one thousand to fifteen hundred bundles are raised to the acre. From five to six tons of dried corn fodder can be averaged to the acre, nearly double the yield in bulk of hay. If cut at the proper time, when the ears are about glazed, the dried corn fodder contains nearly all the nutriment of the stalk, leaves and grain. There is little loss in it. The stalks at this age are full of food that will not be lost in the operation of curing.

The best way to raise the corn is to drill it in rows three to three and a half feet apart, a little less than three-quarters of a bushel to the acre. It can be drilled in rapidly with a drill, and the planting can be done quickly and at little expense. When it is up well it is harrowed to destroy the weeds, and if some of the plants are destroyed the damage will not be great. If the land is good the drilling will make the corn come up too thick, and the harrowing will do no harm to tear up a few plants and make more room for the others. Weeding should be kept up as long as possible, then when the corn has reached the proper state it should be cut quickly and cured carefully. In this way one can raise about twice as much fodder for the stock as he could in depending upon hay. Corn is today the most economical food that stockmen can raise, both in the East and West. It is better, however, to raise it both for the silo and for dry fodder. Then if all other crops fail the stock can be wintered at little expense.

A. B. Barrett.

While the United States continues to import, as it has done during the past ten years, an annual average of nearly 90,000,000 pounds of wool, there is yet ample room for the sheep grower; and with the increasing demand for mutton for food, a good flock should at least be found on every hilly farm.

HARRY FARMER'S TALKS.

XIII.

Correspondence of The Progressive Farmer.

This is the time of year when a great many farmers take the boys from school. This does the boy a great injury or injustice. That last month of school may be worth more to him than all the past term. Harry Farmer has had his troubles along this line in his school days and with his own children. The temptation is great, but, brother farmer, let him go to the end of the term if you can. You will have to sacrifice something to do it, but for the sake of that boy's future let him remain to the last day. Some of the readers of The Progressive Farmer may think Harry Farmer is a crank on education and is working too hard for the education of the children of the farmer, but he only has to say that all the machinery in the world is moved by cranks, from the grindstone or coffee mill up to the largest factory, and if he can be the means of turning some of our farmers from the old beaten paths which have kept them behind other callings in life, he will feel that he is richly rewarded.

For the best results when manuring oats with barn yard manure, spread it on top of the land thinly after the oats have been sown. I, with thousands of others, have plowed it under thinking that was the best place to put it, but after trying spreading it on the surface a few times has convinced me that that is the place for it. Did you ever notice the effect of manure dropped on grass, what a great change takes places? It will have the same effect on oats.

Here is another item from the experience of one of the colonists near Chadbourn. N. C. He broke his land deeply with a two-horse plow and then planted his corn and cotton flat, that is without any bed or ridge, and cultivated it with a light cultivator or harrow. The result was a crop from 50 to 100 per cent. more than on land worked in the old way. This plan worked all right for several years. With the exception of one very wet season, the result has been the same. He says it is best not to turn up too much of the "yellow" dirt.

I think the farmers who oppose the cigarette law for fear it will decrease the consumption of tobacco have not informed themselves and it may be possible that some of the manufacturers tell them it is against the farmer's interest. The truth of the matter is that there is no very great quantity used this way. For the sake of their own children they should do all they can to stop this pernicious habit. Any observing person will notice that the country boy is using the cigarette just like his city cousin.

Do you weigh your hogs to see how much meat you have made and to see what breed and at what age it is best to kill? We like to know just what we are doing. The scales have told us some wonderful tales on our pigs, and consequently some of our stock will be kept no longer. When the pigs from one sow will weigh 15 or 20 pounds and sometimes more than those of another sow with the same treatment, we will surely hold on to the one that gives us the more profit and discard the other.

Harry Farmer.

Columbus Co., N. C.

I have been engaged for 10 years in buying eggs and shipping them to market, and in almost every lot there have been more or less dirty and stained eggs. The only way of cleaning such eggs that I have found to give satisfaction, was to wet a fine sponge, squeeze it as dry as possible, and use it to wash or rub off the dirt. As for stained eggs, they are unfit for market, and no honest person will sell them for that purpose, no matter how much they may have been cleaned with acids.—H. B. Howard, East Braintree, Vt.

Sheep render a larger return than almost any other farm animal for the amount of money invested.

AS THE STUDENT SEES IT.

The Short Course in Agriculture in Tennessee as Viewed by a Farmer Taking It.

Correspondence of The Progressive Farmer.

The short course in agriculture at the University of Tennessee is a surprise to every student. The articles in newspapers, even the bulletins from the University, valuable as they are, have given no adequate idea of the thoroughness, the fine equipment, the practical value of the course to the farmer, the stock grower, or the market gardener. It is a surprise in other ways, as it gives to the man without scientific training an idea of the stupendous number of things that the farmer should and must know if he works intelligently. The short course is eminently practical. While we have lectures on soil physics, on botany, on horticulture, feeding and farm management, every lecture is made to apply directly to the farmer's everyday work. For instance, in chemistry we are shown the results of analyses of the soil and what can be determined by such analyses; we are informed as to the elements and deficiencies of the soil and the exact part that fertilizers play, just why and how they should be applied. This particular branch of the work is immensely valuable. The current conceptions of all these matters are found to be entirely erroneous, and the amazing thing is that an agricultural education has never been thought worth while.

In the dairy the student learns first to run a boiler and engine, information which he is more than likely to need at sometime in the future. Then he is put in charge of a churn and taught how to make butter, the temperature of milk and cream, the amount of salt, etc., needed; or possibly, he is assigned to a separator and taught the process by which cream is separated from the milk. He is then assigned to the milk tester, which tests accurately the amount of butter fat in milk, and by an easy calculation the amount of actual butter the milk contains. He is also taught the process of cheese making. For all this work, the men are required to wear white duck suits and to do the work with care and cleanliness. Preceding the work in the dairy, Prof. Soule delivers an explanatory talk upon the processes and principles of milk production by which the whole complicated process is made exceedingly simple. He inspires such interest among the students by his enthusiasm and animated talks that the men enter upon the work with zest and find it interesting. The dairy equipment is said to be the best in the South, and the dairy hall itself as complete as anything of the kind in the country.

The other phases of the work, however, are not less thorough. Prof. Soule's valuable lectures, illustrated and enforced in various practical ways, on feeds and feeding and breeds and breeding, touch and elucidate subjects of vast importance to the farmer.

Prof. Keffer is admirably equipped for the work of teaching horticulture, which has to do with gardens, fruits, etc. Already he has shown the best methods of pruning by making the men take pruners under his direction and prune grape vines at the University farm. Later on we will have grafting and the pruning of fruit trees.

Altogether, the work of the short course surpasses all expectations in the fact of its being more thorough, more practical, far more interesting and valuable than any one has realized who knows nothing of the immense field which it covers and the amount of work attempted, the importance of it and the enthusiasm and energy with which those who have it in charge are pushing it to a successful issue.

Jas. W. Young.

University of Tennessee, Knox Co., Tenn.

Ewes with early lambs need foods that will produce milk and keep up the growth of tissue. The best are bran, turnips, clover hay, beets, oats and silage.

TILLINGHAST'S TALKS.

Correspondence of The Progressive Farmer.

Your farm is your bank. The proper way to increase your capital is to add to the fertility of your soil so as to increase its productive powers. The better the soil the greater interest it will pay. And don't expect to keep checking out without making equivalent, or greater, deposits, or nature will protest.

The chief supply of drink to growing plants is moisture brought up from below by capillary action, and therein consists the necessity of pulverizing the soil thoroughly before planting, and continuous surface cultivation afterward. Weeds are sometimes counted as a blessing because their presence compels the farmer to continue really necessary cultivation which he might otherwise feel justified in omitting to the detriment of the crop.

The profit in growing any crop is the net sum remaining after all the expenses of producing it have been paid. It costs about so much per acre for plowing, harrowing, cultivating, harvesting, whatever the yield, so the man who succeeds in producing 100 bushels of corn per acre surely does it at a less cost per bushel than he who only gets 50 bushels. And just think what an amount of cultivation and fertilization that second 50 bushels will pay for. The top bushel is always the most profitable.

Producing fine tomatoes is quite an art and one that it pays the grower to master if he expects to get much money out of the crop. Prof. Massey say that he formerly entertained the opinion, still held by some, that heavy applications of nitrogenous manures made the vines too rank and the fruit more crooked; but persistent efforts in improving the character of the fruit and the modes of culture have convinced him that with a good strain of seed no amount of manuring will make it any more irregular, while a poor strain will be irregular in any event, and that a rank growth of vine, induced by heavy manuring, simply indicates the need of more room for the plant, and a heavier crop of big tomatoes, and that heavy manuring in the hill is the best way to insure a vigorous growth of vine and a corresponding vigor and perfection in the fruit. I have also learned that small fruits grow from seeds of small fruits, and vice versa; that trimming and training the plant to a single stem lead to a smaller production of blossoms, less pollen, and a smaller crop; that the largest crops are always on the plants which are allowed to take their full natural development and grow at their own sweet will on the ground; that healthy tomatoes lying on the ground are no more liable to rot than those trained off it. No fruit is more rapidly improved by careful selection, and none more rapidly deteriorated by carelessness than the tomato. Like Indian corn, the tomato is best when the seed is produced in the same latitude and climate where the crop is to be grown, and it seldom does its best the first season when taken far north or south of its native locality. The improvement of the tomato should therefore carried on in the locality where the crop is to be raised.

Isaac F. Tillinghast.

Wyoming Co., Pa.

My idea of using a feed grinder is that the grain is then more completely assimilated than if it is given un ground and that the energy expended is very much less. Where farm animals are placed on full feed, occasionally their teeth and gums get sore and they do not do well. I find that in fattening cattle the animals will not eat any greater bulk of meal than of shelled corn, yet the gain pound for pound is larger. I am very heartily in favor of grinding the cobs with the corn, as this gives the feed greater bulk and aids in digestion. I always use plenty of hay and alfalfa, as it contains about as much protein as bran. I usually grind corn or Kaffir given to our work horses in summer.—William Ramsey, Kansas.

ELECTRICITY AS AN AID TO AGRICULTURE.

In a recent issue of Success, discussing "The Future of Electricity," Thomas A. Edison, the inventor said:

"How can it be applied to farming machinery? Very readily and advantageously. This is a field in which it can be made to work wonders, in the next fifty years. The farmer needs to have his oppressive work made more of a pleasure, for he is, indeed, an all-important factor in the world's great sphere of usefulness, and his absence from that sphere would be more marked than all the wonders that electricity has created. The electrical plow, the electrical thrasher, and electrica dairy implements are not things tha only fill the fancy of a dream. earnestly believe that the next fifty years will find them recorded in the realm of fact.

"Already electricity has made a notable advance in the mining industry, and its application in the separation of metals from ores shows that in this respect it has not been misapplied. Indeed, it has done some marvelous work.

"So it may be with farming implements, and with other machinery. As a manifestation of energy it will stand supreme. As science unfolds its phenomena, it shows it more and more to be the great motive power of nature. Perhaps, in years to come, it will be shown that all the planets are controlled and kept in their orbits by electricity."

Discussing this statement in the January Success, Secretary of Agriculture Wilson says:

"The prediction of Mr. Edison that electricity will come to the rescue of the farmer, during the next fifty years, is likely to prove true—but not in the way of heavy machinery. It will come about, in my opinion, through the use of electricity in transportation, mining and manufacturing. It is just a trifle improbable that anything will ever be invented to take the place, for instance, of a team of horses for farm work. Automobiles run smoothly on a level road, but not in mud.

"But electric railways are going out into the country, radiating from every town and city in America. Every one of these benefits the farmer. City people move out, build houses, beautify grounds, and come into healthful contact with Mother Nature. The farmer, not to be behind, brightens up his own place a bit, uses the trolley himself, enlarges his horizon, and his market.

"So, too, works every other invention of the electrician of Edison's class. Every electrical ore crusher put in operation means more work, more villages, more men to feed. Every improvement in electrical power means more factories.

"The farmer is not slow to see these advantages. The American farmer is a business man, keen and alert to grasp situations. Go where you will, you find him better informed than his city neighbor on prices current, trade developments, and supply and demand. He may not know the details of the coming-out party of Miss Sugarloaf, or the latest bit of club scandal; but he subscribes for papers and magazines that help him to get solid and timely information, and he generally profits by what he reads. Unlike the poor creature whom the great French painter and our own distinguished poet depicted, on canvas and in verse, the American farmer is a gentleman quite capable of taking care of himself and of showing to the world that he is not in the Millet, but in the Edisonian class."

The most profitable dairy cow is the one that helps you to make the most butter in the winter. Butter sells quicker then, brings more, and leaves a better margin of profit.

Better farmers and better farming is what our county needs. A farmer who can grow twenty-five to thirty bushels of corn to the acre, ten to thirty bushels of wheat, and one to two thousand pounds of tobacco need not fear trusts and combines.—C. J Yarbrough, Caswell Co., N. C.