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HOME-MADE VS. COMMERCIAL FERTILIZERS.

An Essay read by Maj. J. L. Coker, of Hartsville, before the Darlington Agricultural Society, Aug. 14, 1877.

It becomes us as farmers to reduce our expenditures wherever possible—to substitute, as far as we may, home-made articles for those which we now purchase from abroad—to increase the balance of exports over imports.

If the income from articles exported and sold, exceeds the cost of articles imported we are certainly making progress. Our policy should be to gather in the riches of other countries, by selling them our productions; at the same time producing for ourselves what we consume.

So plain a proposition requires no argument, and it is so frequently demonstrated before our very eyes, that we need not look abroad for the many evidences of its truth. Acknowledging this, we concede at once, that home-made fertilizers are to be used in preference to commercial fertilizers, in all cases where they are equal in value and in cost. But it seems that I am expected to show that we should dispense with commercial fertilizers altogether, and this is no easy task. For while I am very clearly of the opinion that we should devote far more attention to the home production of manure, I am not convinced that we should relinquish the use of guano, superphosphates and chemicals, as fertilizers, to supplement and improve those produced on the farm. It would seem to be indicated by the processes of nature, that the one creature of exalted intelligence, placed upon earth by the creator, should restore what of value has been transferred by gradual but by constant movement, from the land to the sea. Every mountain stream is bearing along with its waters the soluble matters extracted from the bosom of earth. Every rain lifts from earth's surface particles of the soil and bears them down through branch and creek and river, until into the lap of ocean are deposited the substances gathered from the land. It seems proper that man should take back from ocean the riches with which she has become engorged and should thus keep up the equilibrium, which would otherwise be lost. So from the cemeteries of gigantic sea animals, he exhumes the monster skeletons, and gives them to the soil. He also removes the deposits of guano gathered from the sea by birds, and distributes these. And the fish he takes from the teeming waters, con-

verts the remainder by suitable agencies into fertilizing material for the denuded land.—So too he brings back from ocean its salt and lime, and by his activity and intelligence he repairs the ravages of time. The best experience of the farmers of Europe and America, is in opposition to the doctrine that we should rely on home-made fertilizers alone. Our own experience in this section is decidedly in favor of the judicious use of good commercial fertilizers.—But I would be glad if our farmers could be convinced of the paramount importance of preserving what we have at home, and of improving the value, as well as of adding to the bulk of, domestic manures.

We are in a favorable position for making manure from stock, for most of us have command of extensive tracts of wood land, from which, by the aid of cattle and sheep, we can obtain large quantities of good manure. This may be deposited at small expense in our covered lots and stables, or by a system of folding directly upon the land where it is to be used. These woodlands furnish us ample supplies of litter for pens, lots and stables, and of rich earth for composting with such fertilizing material as our interests require us to purchase. I can hardly determine the relative proportion of stock to pasture lands, as the factors which enter into the calculation are variable; but I will say that most of us can largely increase our stock if we will provide winter food for them; and as we increase our stock we can increase the quantity of manure from this source.

We can also make a wonderful change in the quality of this manure; first, by better feeding, and secondly by sheltering our stock at night. This sheltering is not difficult or expensive. If we are not able to build good stables, we can make roomy log pens and cover with pine straw, and this answers the purpose very well. Let no farmer feel justified in going abroad for his manure until he shelters his stock and makes stable manure where he now makes a very poor article of lot manure.

I think we will find the systematic use of the penning or folding plan in pleasant weather, to be the easiest and best way of enriching the land to the extent that this plan may be practised. By this means the manure is dropped just where it is required for use, and by frequently plowing the land, we may bury the droppings of the cattle, and thus prevent loss from exposure to sun and rain.

I have never seen much profit from any system of composting, outside of the lot and stalls, except where the materials are mixed as placed together in the furrow before planting. This method of composting we should resort to where cotton seed or commercial fertilizers are used, on lands lacking vegetable matter, and we may draw as we will, upon our forests for half rotted leaves and

straw and rich surface earth, until all our wants are supplied.

But there is another branch of the subject to which I must refer. There are certain plants possessed of great value for fertilizing purposes. Those now used among us are, first, the cotton plant of which we use the seed and stalks, secondly the pea plant, and thirdly the weed which naturally succeeds cultivation. As to the first we need not descant upon its value; it is already appreciated. Nor is it necessary to urge its production for the purposes of manure.—We supply ourselves with the seed in our efforts to produce the staple. I will only say that every good farmer husband his cotton seed as he does his corn, and uses all he can get for manure. But as to a pea crop for manure we need some urging. We have here a crop unsurpassed by any other. Very rich in Nitrogen and Potash and Phosphates, a tap rooted plant, deriving a large portion of its nourishment from the air, it is admirably adapted to gathering and storing away the elements of fertility which are wanting in the soil. We have thought well of this crop as a food crop, but have not appreciated it as a means of restoring fertility to the land. I cannot too strongly press upon you the importance in this respect. Plant it; resist the entreaties of those who advocate green manuring, and let it fully mature; then consign it to the soil, burying it well and you have applied what is more valuable than five hundred pounds of the best commercial fertilizer with which we are familiar.

But if you cannot spare so large and so valuable a crop for manure, feed it off to hogs and even by a steady rotation of cotton, corn, small grain and peas, with the use of both home-made and commercial fertilizers, we may rapidly improve our lands.

And now as to the weed crop, it is for those who are willing, or perhaps are unable to undertake the expense and labor of planting and cultivating a crop solely for manure.

Rest a portion of the land, and you will get a valuable crop sown by nature's hand and grown without man's labor.

You perceive that I have tried to be practical in this essay. I might have told you of many new theories for manure making at home, of many new plants highly recommended for improving land, but I am firm in the opinion that no plants have as yet been found adapted to this locality, which are comparable for manuring crops with the pea and the cotton plant. My suggestions are such that our farmers may adopt them without any violent changes in their arrangements. They need not tear up their stakes and begin anew. I do not believe all our former practices are to be condemned. It is now quite the fashion to denounce the Southern farmer. He is called slothful improvident, unmethodical.

He is told that if a Northern man were in his position, he would show him how to be enterprising and successful. The Southerner is said to be all wrong in his methods and his opinions, and is exhorted to imitate the Northerner, or the Englishman or even the Chinese. Have you noticed whether or not these monitors, often Southern men, and farmers, are themselves eminently successful with the plans they commend to others? If not we will prefer to follow the lead of our successful farmers whom we know. We believe the Southern farmer has done as well as any others could have done under similar circumstances. Do our ailments appear to disadvantage beside any others when they occupy the same ground. Do they in business circles in our great cities? Do they in our armies as soldiers? Do they in our halls of legislation as statesmen? Do they in the colleges of the land as students? If not let us stop this self-depreciation, and with confidence in ourselves and in our God who made us the equals of any others, let us copy after none, but work out our own methods and go on bravely to success.

"IS THIS SEAT OCCUPIED?"—An old but vigorous-looking gentleman, seemingly from the rural districts, got into a car and walked its full length without receiving an invitation to sit down. Approaching one gentleman, who had a whole bench to himself, he asked: "Is this seat occupied?" "Yes, sir, it is," impertinently replied the other. "Well," replied the broad-shouldered agriculturist, "I will keep this seat until the gentleman comes." The original proprietor withdrew himself haughtily to one end, and looked insulted. After awhile the train got in motion, and still nobody came to claim the seat, whereupon the deep-chested agriculturist turned and said: "Sir, when you told me this seat was occupied you told me a lie"—such was his plain language—"I never sit near a liar if I can avoid it; I would rather stand up." Then appealing to another party, he said: "Sir, may I sit next to you? You don't look like a liar." We need hardly say that he got his seat, and that the original proprietor thought that there was something wrong about our social system.—*Balt. Gazette.*

A Vicksburg paper says a negro magistrate in that county lately sentenced a negro prisoner to be hanged for stealing a hog, and that the sentence would certainly have been carried out if the white people had not interfered to prevent it.

LAYING DOWN PERMANENT PASTURES.

The first thing to be done in laying down arable land to grass is that the land is well cleansed, and as much as possible freed from those weeds which, if left to germinate unmolested, are likely to be troublesome for many years to come. Therefore, the year before the seeds are sown, it will be necessary to make a good summerland sowing thereupon. * * * * * The seed bed should be perfectly even and fine, and lightly harrowed before and after sowing. If sown by hand, an experienced sower should be employed, and a still day chosen for the purpose. Whether corn (grain) should or should not be sown with the grass seeds is a matter of dispute, but the most general practice is to sow the grass immediately after the corn. Some tell us that corn is sure to rob the grass, and finally to smother and hinder the growth of the finer sorts; but others, with equal confidence, maintain that the shelter afforded by the growing corn is of great use to the young seeds on strong land. Most of us would be inclined to adopt this latter view, as the value of the corn crop is an important element in the consideration of this expensive operation. Oats are thought to be better than barley or wheat for this purpose, but they should be thinly sown.

When the young grass is three or four inches above the ground it should be rolled, and if sown without corn, the weak places may be mended by resowing; if sown with corn, then the resowing should be done immediately after the corn is harvested.—Much depends, of course on the choice of grass seeds, and great care is required in their selection.

Another very important element in the consideration of this subject is the quality of the soil. A good medium loamy soil is the best adapted for permanent pasture.—Where the land is too light and sandy, no proper accumulation of vegetable mould takes place round the roots of the plant, which, by a continuous underground growth, and the action of the earth worms, would annually deepen and improve its own seed bed. These conditions cannot be fulfilled in a sandy soil, which, owing to its porosity, causes a decay of the roots more rapid than their growth, and is consequently sensibly felt by the plant in dry and parching seasons. In very stiff, cold clays, on the contrary, there is an absence of all porosity in the soil, which hampers the growth of the roots of the plants and the creation of rich humus by the earth worms. Both these extremes of very light and very heavy soils are unfavorable to the growth of good herbage.

Let us suppose, that the grass has been properly laid down, on suitable land that has been duly drained, cleansed and leveled—still our real work is not yet done. However promising the young grass may look, we must not take liberties with it, and suppose it will bear the deleterious practice, which is resented even by old and well established pastures. Therefore I cannot agree with those who feed young grass the first winter after sowing; nor do I believe that a heavy coat of manure is suited to plants in so tender a stage of growth. The proper course would be to give the young grass a light top-dressing of short and well rotted manure early in the winter, which will both protect the plant from the effects of frost, and encourage its early growth in the spring. I would roll and very lightly bush-harrow the layer in March, (or when the land is in tith in the spring.—Ed.) and then mow it late, say at the end of June or the beginning of July, so as to allow the best sorts of grass to shed their seeds, which happens in the middle of June. It is to the future, and not the present hay stack, we must look, since any illtimed parsimony now, or any premature desire of realization, will deprive us of permanent profit for the sake of a very doubtful present advantage.

In the autumn the layer may be grazed with cattle, but not with sheep, for they bite too close, and pull up the young grass by the roots. Nor should the cattle remain on for too long a period; and any tufts of rough grass they leave should be mown. The next season will be critical and trying, as two exhaustive crops will have been taken from the land, and, therefore, a liberal coat of good farm-yard manure should be spread on the pasture as soon as the cattle are removed from it.

Above all, it is necessary; in order to keep pastures in a profitable state, not to mow it too often, unless an adequate return can be made in manure. It is not sufficiently considered that the hay crop removes more nitrogen from the land than rye, oats, barley or wheat, and that not only is no return made to the mown meadow in the shape of special manures, but the stock fed on the aftermath are often driven off at night to help to enrich the arable lands. Can we wonder that the process of deterioration should proceed so rapidly in pastures thus treated, and that the most valuable grasses begin to die out.—*Rev. C. T. CORRANCE, of England.*

The general directions given in above article are excellent, but the difference of seasons here and in England necessitates some difference in practice. For instance, it is recommended to reseed spots where the

stand is poor, in June, or as soon as the grain crop is harvested. This could not be done in our hot, dry climate—the following September would be quite as early as the young plants could venture above ground with safety. But we cannot commend too highly the advice, to let the plants seed the first year and thus correct defects in the stand; and to avoid weakening the plants by grazing or mowing, before they have become strong and fully established. Pastures are very frequently ruined by the desire to realize from them too soon.—*ED. SO. CULTIVATOR.*

OATS.

EDITOR SOUTHERN CULTIVATOR.—As science requires "tables," I was in hopes to have presented some setting forth the results of some experiments with oats made the past season, but a destructive drought of nearly 60 days, commencing April 13th, rendered most of them unfruitful, especially so in those instances where I hoped to demonstrate (partially) the comparative value of certain salts, applied as a top dressing in March—only one rain, and that a slight one, falling after the application. In these cases, there was no discernible difference between natural soil, Nitrate Soda, Phosphate Lime, Chloride Sodium, and Sulphate Lime. These salts were applied separately and also in combination. It was plain that the capacity of the natural soil only was exhibited. The variety sown was the rust proof oat. I shall repeat this experiment the coming season, making the application much earlier (December or January,) and hope to be more successful.

As "tables" are not essential to the practical farmer, however, I shall proceed to tell what my experiments in another direction have taught me, and I am almost dogmatic enough to defy any one to disprove my conclusions in reference to oat culture by actual test. It is not wise, however, to be dogmatic in reference to agricultural matters, for, as a rule, almost, it seems that the experience of one is disproved by that of another.

I have been a close observer and student of oat culture for several years, and the result of my observation and experience is this: That the time to sow is from September 15th to November 10th, the earlier on poorer soils—the happy medium is October 10th-15th. On rich and very rich soils, from October 15th to November 10th. That a heavy soil is the best soil for oats, but that they can be profitably grown on any soil, if judiciously manured. That the phosphate lime is the special manure for oats, where they follow cotton or peas, and especially so on clay soils. That the manure should be drilled in with the seed. That the seed should be put uniformly 3 1/2 to 5 inches deep; that on all but very rich friable soils drilling at 18 inches and cultivation increases the yield under like circumstances of manuring, 50 to 75 per cent.

These, Mr. Editor, are the maxims I hold in reference to oat culture, and I can confidently recommend them. Many are agreed as to the proper time for sowing, but a very large number of farmers still hold to the opinion that February is the time to sow oats, and yet they admit that they rarely make really profitable crops. Let them once understand that October sown oats, put uniformly 4 inches deep, and that have a good hold on the soil by the 15th Nov. are not endangered in the least once in 10 years, year 20, in this climate, and they will see their way clear to profitable oat growing.—Notwithstanding the unpropitious season I made a fine crop this year, as my neighbors, who came frequently to examine and admire, can testify. At the lowest calculation, made 40 bushels on rather poor sandy land, and but for the drought would certainly have made 60. The oats were sown in cotton in October, sowing the cotton with a shovel and sowing seed in furrow. Covered by breaking out the middle with a scoter. The cotton had been picked over twice. In January the stalks were beaten down, and the oats cultivated 3 times afterwards. The cotton rows were 3 feet apart, and the cotton was so sided as to make oat rows 18 inches apart. Made no special application of manure to the oats, but the cotton had been manured. This is a good way to work oats, for it is economical. On our old cotton lands, the acid phosphate of lime is the only fertilizer needed to make magnificent crops. It should be applied in the furrow with the seed, from 2 to 4 hundred pounds per acre. It is with oats as with cotton, too much nitrogen to be guarded against. Twenty to forty bushels cotton seed, however, may be applied with profit, in addition to phosphate, but, as I remarked before, such application is not necessary after cotton or peas.

As drilling and cultivating oats is not my invention I have no personal theorizing at stake in the matter, but I give my experience. There are numerous occasions, no doubt, when it will be found more profitable to sow broad cast and reap less, but as a rule the "intensive" farmer will gain by adopting the drill. From 4 to 6 acres can be cultivated in a day, depending on the length of row, and the expense is very small. A twelve year old boy with a donkey is almost first class stock for the purpose.

One more remark and I am done. In this section for several years we have been able to buy from one and a half to two bushels of corn with one of oats, in the months of October and November, the period when corn is harvested and oats in demand for seed. Now, as it is a well determined fact that the yield of oats is three times greater than corn, (in respect to bushels) on same soil, even when oats are broadcasted, here is 45 to 60 bushels corn from ordinary soil. To what extent this is the case in other sections of the State, and how long it may continue to be the case here, of course I do not know, but it is reasonable to expect that for many years yet a bushel of oats will purchase one bushel of corn. This ought to encourage us to grow oats, surely. It is undoubtedly the surest crop that we can plant, and it is to be hoped that the advice of the "Southern Cultivator" will not go unheeded this fall. S. A. C.

"STICK TO DAD."—A farmer's son writes us the following: "I am tired of farming and want to come to town to make a living for myself. What do you think of it?"

Well, we think you are a fool if you don't stay at home. The city is overrun with 'dead beats' and tramps, and if you have a dead sure thing of making "bread and meat" on the farm, you'd better stay where you are, and dig potatoes, than come here and go to the Workhouse and peck rock. Stick to dad. Stay on the farm.—You are worth more to yourself, to your neighbors, to your State and the country at large than all the one-horse mutton head professional gentlemen that are living from hand to mouth in this city or State. You stick to the plow, the mower, the reaper, freeze to that farm like a fly blister to a negro's lip, raise rye, corn, hay, barley, oats, potatoes; chop wood, maul rails, burn brush, curry your mules, feed oxen, raise stock, and instead of hanging around the street corners dependent upon lunch houses to keep sand out of your craw, you'll be at home on your farm, living a life of "independent happiness," while thousands of "nice young men," too pretty and proud to work, and too lazy to steal, will be lighting out "over the hill to the poor house," merciless beasts and lazy subjects of utter dependence upon public charity. Young man, if you know which side of the bread of life the butter is on, you will stick to the "solid idea of coming to Louisville to "make a living for yourself." 25 acres of land and a chap like you to till it, is worth more to the county than the bank in this city and the smartest capitalist we know of to run it.—You stay where you are. Follow the plow, and engineer the doolie, willing mule that pulls it. Our word for it any young, healthy, stout farmer's boy who will give up his chances for "a dead sure thing in life" and come to town on an uncertainty is not smart enough to take care of himself, and should be arrested and sent to a lunatic asylum for a darned fool. Stay where you are.—*Louisville Courier-Journal.*

FOUR SOUTH CAROLINA WIDOWS.—At Prosperity, a station on the Greenville and Columbia railroad, there dwelt in reason of the sound of the whistle, four widows whose names and deeds should be printed in letters of gold. We shall tell of them—to spare blushes—first.

No. 1. This lady—as, in fact, all the others—lost her husband during the war and was left in straightened circumstances. Did she sit down and grieve at her fate? By no means. She has raised four children, besides fine crops, and to day she has much of last year's cotton and flour on hand, is free from debt and is able to pay cash down for what she wants.

No. 2 looks complacently on all of her last crop of cotton, and with a sense of perfect rest and absolute fullness on 3,000 pounds of flour, neither of which she has sold because she has no use for the money—here's a widow for you. The only thing which disturbs her rest now is what to do with her new fodder, every place being filled with the old. She might dispose of some of it to the Editor of the Herald, who has been standing to the rack for years, fodder or no fodder. She, too, like a true woman, has raised children and set them up under their own vines and fig trees.

No. 3 struggled through the years which have rolled on since the late unpleasantness, raised six children, given each at majority \$500 in cash. Last year she bought a tract of land, for which \$1,400 in good money was paid. Has corn, fodder and other things in abundance.

No. 4, like unto the others, has made a splendid fight and brought up a large family in the way they should go, has of last year's crops abundance, pays cash in trade and loans her earnings out on interest.

Curculios may best be fought by inclosing the plum or other fruit trees infested—cherries, peaches, etc.—with a chicken yard fence, and colonizing a flock of chickens within. Then, after the fruit is set, by a slight shaking of the trees every morning, while the insects are still inactive, they will drop off and become an easy prey to their ready enemies beneath.