

Pref. B nj. Irly lat P ofesso of Agriculsigh has become a regular so t ibuter to this department. All questions relating to the farm garden or orchard will be answered by Prof.

PROF. INSY'S WEEKLY LETTER.

WHAT FERTILIZER SHOULD THE FARMER

USE

many elements are needed by the plied with them, then there is no use | crop will be larger. applying those, so we find what is lacking, or most needed by experiment, and either apply these directly, or in directly. For instance, we can make the air give up a part of its nitrogen indirectly by growing a leguminous grop as a renovator. This crop not only returns good profit in the direct yield, but it pays handsomely indirectly, by storing up nitrogenous plant food in the soil for future use. So here we have an economical means of furnishing our nitrogen and we are then com pelled to buy but two of the "ree essential elements to be added to the soil in a fertilizer. That is, phosphorus and potash. Now it so happens that here in the South we have an abundance of phosphate rock in South Carolina and Florida, and that narrows us down to importing but one element, which is potash. This can be bought cheapest in the form of kainit. When I say cheapest, I mean it in the fullest sense, as the actual figures are low, and I say does most good for the money invested. On our Southern farms, especially on the light sandy soils of the coast region, the system of fertilizing is almost in dispensable and in fact I might say that all the most progressive farmers are great advocates for the use of com mercial fertilizers. In some parts of our country very little if any commer sial fertilizers are used, as the people depend on stock raising and renovat ing crops to bring up their lands. There is no objection to this system except that it takes too much time to bring the lands up to a high state of cultivation. In that respect we are blessed in the South, as we can use some quick acting fertilizer and grow our money crops in the sprieg and summer and like crimson clover, and the land is practically resting, as far as the ex haustive crop grown is concerned, and the crimson clover stores up plant food through the winter, in the roots and stubble for the succeding crop, fur nishing grazing or hay for the stock, and prevents leaching through the winter, to say nothing of leaving the soil in a nice, porous condition. In fact the lanc is in a perfect mechanical condition after a crop of crimson clover. On the other hand, we can apply fer til zer to a crop of oats, wheat, or rye planted in fall or winter, and then harvest them in plenty of time to plant another renovating crop, such as field peas, and their crop will benefit the land in the same way that the orimson elover does, except that it does more, as it benefits it by shading the soil through the hot months, and comes off in plenty in the mud. of time to allow the planting of another erop in the late summer or fall. For instance, a crop of oats can be sowed here in January, harvested in May, the land sowed to peas the same month, and pea vines cut in August or September, making from two to three tons of hay about equal in quality to clover, the land can be sowed to some fall crop in a better condition than it was in the

ary, when oats were sowed. Now the point I wish to make is simply this: Here in the South we can take poor lands and grow our money crops at a profit by using plenty of commercial fertizers and then restore erganic matter or humus in the soil by least, these renovating crops, and at the same time improve the general condition of our lands.

month of May previous, or even Janu-

The phosphoric acid hastens the de- West, Alabama.

velopment of the crop. The potash has a two fold benefit, as it furnishes plant food to the soil and absorbs and retains moisture in the soil.

Instead of using less fertilizer, we

should use more, but that does not mean that we should abandon all other means of restoring the soil fertility and retaining same. The beauty about using commercial fertilizer is, we can start at once to improve our lands and be making a profit at the same time It even pays handsomely to fertilize the renovating crop, as the amount taken off in the crop will be greater, and the amount of plant food left in the soil will be correspondingly greater. This is the same old perplexing ques- The farmer can be sure that the lack tion that has come up year after year, ing elements are phosphorus, nitrogen and at the end of each year many and potash, and if these are supplied, farmers at least wish they had tried the air and soil can be relied on to something else. The days of prescrip furnish the others in sufficient quantions in fertilizers are about over with, | tities. It matters not how large or how and now we are settling down to a small the crop is, the elements of which common serse way of looking at the it is constituted will bear about the matter. That is, we know that so same proportion to each other, so if you make it take up a large amount of plant, and if the air furnishes a certain | nitrogen, potash and phosphorus, it number, of course we need not add | will draw on the soil and air for the them, and if the soil is abundantly sup- others to balance up and thereby the

SOME FARMING "DON'TS."

(Prize Letter in H me and Farm)

the laboring man, even he, himself, is mentally, as milk. When heated as in many instances working against his hot as one can readily take it, it may own interest and "cussing" someone be sipped slowly from a tumbler, and else for his own mistakes.

in regard to this master, for it is a fact, as everyone who will just stop and think for a moment must acknowledge.

The man who attempts to pay debts and feed and clothe himself and family with 5 cent cotton is working against his own interest.

To make farming profitable one must first study well his condition, as to ability, location, etc.. Economy in everything is the keynote to success in farming as well as other business. "There is more in the man than there is in the land." There is quite a differ erence in making money and making a living; one can live on very little if cheapest because in my experience it it is really necessary, and the farmer is getting to where necessity is going to drive him to economize or bankrupt

> The farm must produce a supply of corn, oats, potatoes, syrup, peas, hay, etc., and let the cotton be a surplus. with those who have been more for

sunate than yourselves. I am writing from actual experience,

brother farmers. In 1889 I had nothing, worked on a farm for wages at \$10 per month. I now own 110 acres of land, and am practically out of debt, and could make this year's crop without buying on credit, as I have corn and meat at home, enough to do me, and a little to spare. I have always made it a point sow some renovating crop in the fall to raise corn and meat and then as

> referring to the same. The cheapest and best way to im prove land is by the use of the field pea

and rotation of crops. I will proceed to give a list of "don'te"

in conclusion: Don's buy a thing, unless you are certain you need it, and can afford to purchase it without injuring your busi

Don't go to town and talk politics and "cues" the efficers and merchante whom the grass is running the crop.

Don't let the manure waste. Don't fail to have a blacksmith shop

on the farm. Don't let the stock stand out in the

cold and rainy weather and feed them Don't plant all cotton and then go ing uncovered in a stable is taking about complainining of hard times and the high price of corn and other grain. Don't promise to do a thing unless

you are pretty sure you can pull shrough. Don's buy a barrel of flour on credit because your neighbor does or some one else who is able to pay cash for his;

better eat egg-bread a while. Don't undertake a thing that you see everybody else failing in. Don't fail to have early patches of such things as will find a ready sale in

Don't forget where you made the mistakes last year and try to correct them this time. And last, but not

the market and always bring a good

Don't forget that God is the giver of all good and precious gifts, and will abundantly bless those who do His R L BUNNBELOR.

FARM FUN. FACT AND FICTION.

The farmer leads no E Z life: The C D sows will rot:

And when at E V rests from strife, His bones all A K lot. - Exchange.

Statistics show that the average cost of raising an acre of wheat in New England, is about \$20. In the Middle States, \$13. In the Southern States, \$16. In the Pacific States, \$12. The average cost for an acre of corn is \$11.71.

Cows to give milk should largely share In kind attention, watchful care; Let them be housed from winter's blast. And kept in flesh till April's past; Let all their feed be rich and sweet, Made up of things they like to eat.

Farmer Nubbins (shouting across the garden fence to his next door neighbor) -Hay, there! What are you burying in that hole?

Neighbor-Oh, I'm just replanting some of my garden seeds.

Nubbins-Garden seeds, eh! Looks to me mighty like one of my hers. Neighbor-That's all right. The seeds are inside. -Pick Me Up.

When overcome by bodily fatigue or exhausted by brain labor, no stimulant, so called, serves so well the purpose of It seems that everything is against | refreshment and rest, both bodily and as it is easily directed, one feels very Now I hope I won't be misunderstood soon its beneficial effects. Few persons realize the stimulating qualities of this simple beverage. - Ladies' Home Jour

> How dear to our hearts is the old ellow pumpkin, when orchards are barren of stuffing for pies; when peaches and apples have both been a failure, and berries of no kind have greeted our eyes. How proudly we turn to the fruit of the cornfield-the fruit that our children are taught to deepise-the old yellow pumpkin, the mud covered pumpkin, the big bellied pumpkin, that makes such good pies. -Exchange.

Jay Gould bequeathed his son George \$5 000,000, which, according to the laws of New York, would be liable to an inheritance tax. But it was lately decided that the sum named was not subject to the tax, that it was not a bequest, but the payment of a debt that Do not make debts to keep up style the father owed his son for services! George's services must have been valuable. It would take a farmer making \$5,000 a year one thousand years to earn as much.-Farm, Stock, and

Something new in agriculture is a vine that grows potatoes on one end, and tomatoes on the other. This re sult has been obtained by the simple process of grafting tomato vines on potato stalks, just above the ground. It is claimed that tomatoes thus grafted much cotton as possible. I am not do better than those that grow on their boasting, but merely stating facts in own roots, while the potato under the ease, and hope to be pardoned for ground is not disturbed. This new does this more strikingly appear than scheme will prove a great thing for those whose garden space is limited .-Wilmington Messenger.

Humorous papers, says the Worth ington (Minn.) Advance, may continue to poke fun at the agriculturist, and "city" men may persist in laughing at "brother hayseed," as they condecend ingly term him; but it still remains an uncontroverted fact that the farmer is the only really independent man in this world. He is practically the king among men, as he rules over his mod est domain from the tilling of whose fertile soil-the only true source of material wealth-he reaps health, wealth and happiness.

Leaving pails, or cans of milk, stand risks of making it impure. But I firmly believe that while milk has a temperature above that of the surrounding atmosphere in which it stands, there is little danger from stable odors; yet when it sinks to the temperature of the room it will absorb all the odors that surround it. There is no safer way to keep milk pure than by submerging it in clean, cold water, using the Cooley style of cans for this purpose. On our farm this plan was followed with ex cellent success until the farm separator displaced it.-Farm, Stock, and Home.

There has been no inducement lately to plant corn two years two years in succession, as it has not paid better than other crops. It is not a good plan not-because the corn is exhaustive, but because successive growing of this favorably with those of other States. by out running the officers.

crop on the same land so fills the corn with smutty ears that the crop is nearly worthless. It is, besides, not a good plan to keep the land more than two years in cultivated crops without re seeding ith with clover or grass Often the corn crop can be got off early enough for the field to be sown with winter wheat or rye, and seeded both with timothy and clover in the spring. -American Cultivator.

One of the most successful men of business in this country has adopted the following as a motto:

"The wice man profits not only by his own experience, but by the experi

ence of others as well."

That is just the sort of a motto fo all good dairy farmers to adopt. That constitutes the difference between the wise and successful dairyman and those who are not successful.

To be able to know and understand the experience of other dairy farmers, one must read some paper where such experience is recorded. - Hoard's Dairy

OATS.

Except in the far South, it is too early to seed any crop except oats, and even this crop should not in this lati sude be seeded before the end of the month The oat crop in the South is too often very badly treated. Because it will produce a yield on poorer land than most other crops from its ability to extract plant food from the soil be ing greater than that of most other crops, it is too frequently sown on poor land and given no manure or fertilizer. While we are strongly of the opinion that to grow oats with that profit which ought to follow the crop they ought in the South to be seeded early in the fall, yet with good treatment and early seeding in the spring and and sowing only the winter eats or the rust proof variety, fair crops may be made. The Northern spring oats are not suited for the South, except in the mountains, as the weather becomes hot too soon to permit of their making a robust growth. An average crop of oats will take from the soil ninety seven pounds of potash, thirty five pounds of phosphoric acid, and eighty nine pounds of nitrogen. This shows the necessity for good fertilization if a good crop is to be had. In the presence of farm yard manure to meet this re quirement, which is the best fertil ser having 5 per cent. of ammonia, 9 per cent. of phosphoric acid, and 5 per cent. of potash should be used. Apply at the rate of 500 pounds to the acre. Southern Planter.

## EXPERIMENT STATIONS.

"That each year we are drawing into closer relationship with the agriculture of the State is apparent," says the an nual report of the President of the Massachusetts Agricultural College. "The farmers are coming more and more to depend upon the college, and what is true now is just as surely going to increase in the future. In nothing in the matter of correspondence. Dur. ing the last twelve months 5 528 letters have been answered in the experiment department alone. What does this mean? It means that at 5,528 points we have touched the interests of the agricultural life of this State. It means that 940 dairymen have wanted to know about butter fate or the best balanced ration or the hundred other matters of vital interest. It means that 750 farmers have had questions to ask concerning fertilizers and fertilizer materials. It means that 316 intelli gent men engaged in the practice of agriculture have wanted information respecting rotation of crops, millets and soya beans, or the effects of potash on the growth of corn. It means that 304 fruit growers have come and asked what were the best varieties of fruit, how to cultivate them and how to prevent disease. It means that 113 grow ers of flowers and vegetables under glass have been attacked by rusts, smuts or nematodes and have lifted up the Macedonian cry, 'Come over and help us ! It means that 1 232 sufferers assacked by all kinds of winged, crawling, creeping foes have come to us for reitef. It means that 103 good farmer's wives have seen the ruin of their household idols effected by the buffalo bug and have cried out in their anguish, What shall we do to be saved from these pests? This is the work of only one department. In addition there ing at times, and the finger which was have been written from the office of administration during the same period over 7,000 letters on matters touching college interests."

ABOUT FERTILIZERS.

Correspondence of the Progressive Farmer. The Virginia Station has been mak ing a test of fertilizers for wheat for a series of years. Bulletin 69 reports re sults for last year.

On the whole the indications are that for most Virginia soils the wheat crop requires very light doses of nitro gen and potash, but heavy doses of phosphoric acid.

Bulletin 129 of Geneva (N. Y) Station reports analyses of commercial fertilizers sold in that State last year

During the spring of 1897 the stations collected and analy sed 735 samples of 200 different brands, of which 400 were complete fertilizers, 32 contained phos phric acid and potash, but no nitrogen, 33 contained phosphoric soid and nitro gen, but no nitrogen, 1 contained nitro gen and potash, but no phosphoric acid, 31 contained phosphoric acid alone, and 3 contained potash alone.

Of nitrogen, 293 brands contained more than the manufacturers guaran tee, and 107 contained less.

Of available phosphorie acid, 326 brands contained more than the guar antee and 74 contained less.

Of potash 297 brands contained more and 103 less than the manufacturers guaranteed.

In a few cases the shortage in one of the three essential ingredients was so great as to leave no doubt of intentional fraud, but in most cases it was only

trifling. The retail selling price of the com plete fertilizers varied from \$15 to \$60 a son and averaged \$28 92 The retail cost of the separate ingredients un mixed varied from \$1 80 to \$34 25 and averaged \$20 17, or \$8 75 less than the

selling price. To some farmers who purchased a very low grade fertilizer at a high price, the cost of nitrogen was \$1 87 a pound; the available phosphoric acid, 697 cents, and the potash 60 cents. On the other hand, to those farmers who purchased plant food most cheaply, each pound of nitrogen cost 11 7 cents; of available phosphoric acid, 4 4 cents, and of potash 3½ cents. Taking an average of all the mixed fertilizers, farmers paid 20.1 cents a pound for mitrogen, 71 cents a pound for available phosphoric acid and 61 cents a pound

for potash. These figures indicate that farmers should invariably avoid purchasing ow grade fertilizers, unless they are sure that the price is proportionately low, a condition which rarely accompanies the sale of such fertilizers. It also appears that, on an average, in are paying much more for their plant food than they can secure it for it for in unmixed forms direct from manu acturers. Thus, while the average cost of one pound of nitrogen to the farmer is 20.1 cents in mixed goods, it can be purchased for 12 to 15 cents a pound. While available phosphorie acid is costing 71 cents a pound in mixed goods, it can be purchased at less than 5 cents, and the same is true

of potash. J. L. LADD. Bay City, Texas.

CONCERNING CROWS. In a conversation a few days since with Col. T. G. Walton, who, by the way, talks intelligently on any subject, tuberculosis among the cattle, or at that he will not allow his tenants to amine a large herd in Virginia a few have a scare crow in their fields of vears ago, and found that the head of corn. The purpose of the crow is not the herd, and a large proportion of the to destroy corn but worms, and that cows were tuberculous. I think there when they do pull up corn, it will gen is no doubt that the disease is much erally be found that there is a worm at more prevalent in herds in which there the core. He argues if crows were really destructive to corn they would breeding weakening the constitution of be worse than an army with banners, for by their numbers they could lay to resist the disease germs. waste every corn field in the land. In view of the fact that Col. Walton has often taken the premium at different highly bred ones, because they are fairs for the largest yield of corn per acre, and at the World's Fair for the best corn, we are impressed with the force of his argument in behalf of crows.-Morganton Farmers' Friend.

Lincoln Journal: Mrs. Malchi Hoovis, of Iron Station, who was bitten by a copperhead snake last August, has never recovered from the effects of the poison, and probably never will. Her hand and arm cause her much sufferbitten is numb all the time. - Deputy Collector Means and U. S. Marsha-Cooper made a raid into Gaston coun ty, Friday, and captured and destroyed In good accomplished we think the two moonshine liquor plants near North Carolina Station compares Cherryville. The moonshiners escaped

LIVE STOCK



Edited by Benj Irby, M. S., Late Prof. Agriculture, N. C. A. & M. College; and F. E. Emery, M. S., Sceretary-Treasurer N. C. Swinebreeders' Association.

We surrender our Live Stock Department this week to Dr. Frank Harvey, of this city, who gives us an interesting paper on that important subject, "Tuberculosis in Cattle." - KDS.

TUBERCULOSIS IN CATILE.

BY F HARVEY, M D, D. V. S.

Correspondence of The Progressive Farmer. There are a number of diseases that are transmissible from animal to man. and strange to say, they are almost all of a malignant nature.

Some such diseases are, glanders in the horse, rabies in the dog, malignant carbuncle in cattle, bovine variola (cow pox) (so which we are indebted for vaccination); and tuber culosis (consun ption) in cattle.

Now, during the last few years, it has become more generally accepted that tuberculosis is transmissible to man from cattle, consequently much has been written in journals, and papers, on the subject, and a great amount of interest manifested in the public, had in several States a great deal of good and possibly some harm, has been accomplished by legislation.

It will perhaps appear to some, who have followed the matter closely, a remarkable fact that there is, and has been, such a diversity of opinion among writers, and investigators on the subject.

Like most questions of the kind it, has fallen the victim to extremists.

On the one hand, we read an article, written too by one whose opinion is worthy of respect, that there is hardly any tuberculosis in cattle and the same writer ridicules the idea that the disease is transmissible from eattle to the human being; on the other hand, another writer, whose opinion is of as much weight as that of the former writer, tells us that a large proportion of all cattle are tuberculosis, and that we human beings exist, to a large extent on a diet of tubercle bacilli, served to us in milk, and poorly cooked beef. purchasing mixed fertilizers, farmers Now, it is probable that each writer is thoroughly sincere in his statements, and they may even have been the result of actual observation, but if such observations had been carried further, or in other fields, each would have modified his statements, perhaps, and struck a happy medium in his views. and expressions on the subject. When I was engaged in the active practice of veterinary medicine, I had ample opportunity of observing just how such diversity of opinion is likely to occur.

I investigated Worcester, and Somerset counties for tuberculosis in cattle for the State of Maryland, and although I made the most careful examination that I could, with the means at my disposal, I did not find a single case of we learned that crows are a blessing least not one that I could diagnose as instead of a curse. The Colonel says such. But again, I was called to exhas been much in and in breeding, such the cattle, and rendering there less able

> Poor, "scrub" cattle are not as liable to have the disease as the more brought up to "rough it," and are exposed to the "hardships of life" from the beginning of their existence.

As to the question of "heredity," I do not believe that calves are born with tuberculosis, but I do believe that they inherit a weakened constitution, and when born are in a condition of hyponutrition so that they are unable to resist the inroads upon their systems made by the tubercle bacilli, and as it is a case of "the survival of the fittest," they soom become victims of the dis-

The most important, and at the same time, the most deficient question, to answer, is, Is the disease transmissible

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