

PROGRESSIVE FARMER

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Agriculture

NEWS OF THE FARMING WORLD.

Washington Correspondent tells What Progress is Being Made in Various Sections of the Country.

The use of insecticides and fungicides," said Dr. H. W. Wiley, the Chief of the Bureau of Chemistry of the Department of Agriculture, "has become almost indispensable to the farmer and fruit grower throughout the whole country. Immense quantities are placed upon the market, and without doubt the greater part of them meet the claims of the manufacturers but many of them are more or less fraudulent.

The Department has undertaken a somewhat elaborate study of the insecticides found in the American markets, with the object, not to interfere with a legitimate business, but to acquaint merchants as well as purchasers, with the real character of the goods in which they deal.

Paris green is the most important insecticide now on the market and this article if perfectly pure, chemically, is composed of three substances—arsenious acid, acetic acid and oxide of copper. But because of faulty methods of manufacture and also because arsenious acid is cheaper than the other constituents, large amounts of this substance are some times present in Paris green, with the result that great damage is done to the foliage by scorching. Another method of adulterating Paris green is by the addition of gypsum, which is absolutely worthless and only adds weight. Glauber salts is also used as an adulterant, but it will do no harm, save to weaken the compound. SOME CHEAP AND POPULAR BUT INEFFECTIVE INSECTICIDES.

A compound known as 'Slug Shot' sold very extensively on account of its cheapness. Our analysis shows it is composed almost exclusively of crude gypsum with a small amount of arsenious acid and copper oxide added. It will, of course, do little or no good as an insecticide, while five cents per pound is a large price to pay for a sample consisting of nearly 100 per cent. gypsum.

"Another insecticide of extensive sale is 'Bug Death.' According to some Maine experiments, it was found that when applied to potato vines according to directions—40 pounds per acre—this compound will do very little good, while even at the rate of 150 pounds to the acre, it is but slightly effective.

"Another compound offered is 'Black Death.' Its composition is nearly the same as 'Slug Shot' and the same remarks may be applied to it.

"The various 'Roach Destroyers' on the market are mainly composed of borax in the powders and phosphorus and molasses in the pastes, nearly all of which could be prepared at home at one half to one-tenth the cost.

"The so-called 'Dry Bordeaux Mixture' represents an attempt to supply the ready mixed Bordeaux Mixture, but such an attempt can hardly be successful, owing to chemical actions preventing the proper assimilation of the constituents.

"In view of these facts," continued Dr. Wiley, "it would be well for the public to be very sure of the composition and value of any such compound before purchasing. The Bureau of Chemistry will make analyses of samples of insecticides and fungicides purchased by farmers and others using such bodies if instructions for securing and forwarding these samples are obtained from this Bureau."

PROF. SOULE'S NEW BULLETIN.
There is now in press at the Department of Agriculture, another Farmers' Bulletin (No. 143) which will, it is believed, be very much in demand by those who are constant readers of these popular publications. Its title is "Conformation of Beef and Dairy Cattle."

The selection of animals best suited for their intended use is of great importance to feeders and dairymen; and it is even more important to breeders of animals of either class,"

says Dr. D. E. Salmon, Chief of the Bureau of Animal Industry, in submitting this report for publication. "That the character of the animal is indicated by its visible and tangible qualities is a general rule which has comparatively few exceptions. The importance, therefore, of being able to judge cattle by sight and touch is apparent. By means of the diagram, descriptions and suitable illustrations embodied in this paper, there is enough information necessary, it is believed, to enable the stock feeder, the breeder, the farmer, or the dairyman to become a competent judge."

The New Hampshire Experiment Station has made some tests with methods of

STARTING TOMATO PLANTS.

In one test, the plants were transplanted into small boxes, so arranged that the bottom could be easily removed and the dirt allowed to slip out, and in the other, they were transplanted into 4 inch pots. When the pots were used, the plants matured and bore fruit earlier than the plants in the first experiment. The Station notes that "while the pot system takes more time and occupies more space, yet from the experiments made, it surely pays."

Another experiment made showed that the kind of soil in which the tomatoes were planted seemed to have an effect on the amount of rot produced. Where the soil was inclined to dry out, the rot was more prevalent, while on a loamy, moist soil, there was very little rot.

A SCOTCH VIEW.

A correspondent of the Dundee (Scotland) Advertiser has recently made a tour of this country and concludes that the agricultural possibilities of America are almost boundless. He says in a recent issue of his paper:

"But what of the hopes one some times hears expressed by hard-pressed farmers at home (in Scotland) that America will soon reach that stage when the whole produce of her acres will be required to feed her own teeming population? One short week's railway traveling in America would shatter the most ardent of them."

GUY E. MITCHELL.
Washington, D. C.

THE FERTILIZING VALUE OF ASHES.

Correspondence of The Progressive Farmer.
I have a quantity of ordinary wood ashes, kept dry, unleached; burned from swamp woods, such as gum, ash, oak. What is it worth a pound for fertilizer as compared with commercial fertilizers? Compare it with kainit and phosphates. Give figures to show comparative value. If kainit is worth \$10 a ton, what is wood ashes worth? What is the weight of a bushel of ashes?

R. L. D.
New Hanover Co., N. C.
Answer by Dr. C. W. Burkett, of the N. C. A. & M. College:
The kind of wood ashes here mentioned contains 8 per cent. potash and 1 per cent. phosphoric acid. On a basis of this a ton of kainit, costing ten dollars, and containing 250 pounds of potash, would be 4 cents per pound for potash. A ton of wood ashes containing 160 pounds of potash to the ton, potash at 4 cents, would be \$6.40. This would be the relative price then as a source of potash, but the ashes contain in a ton twenty pounds of phosphoric acid at 6 cents per pound, \$1.20, besides the lime, which is worth a good deal. A bushel of ashes will weigh near about fifty pounds, which makes forty bushels to the ton. Considering the fertilizing value of lime, phosphoric acid, and potash, wood ashes are worth, we can say, 22 cents per bushel, taken on a basis of other sources of this element. You can then see that if ashes can be purchased for ten cents a bushel they are a most valuable source of fertilizer.

Mount Olive Advertiser: Every farmer who had a tobacco crop last year made money, and nearly every one who depended upon cotton as their money crop are now in the low ground of sorrow.

FERTILIZERS FOR TOBACCO.

Correspondence of The Progressive Farmer.
Few plants show such wide variation of quality and still stay on the market, as tobacco.

Cigar tobacco, pipe tobacco, and that used for chewing, are three marked types of quality, the cigar tobacco leading so far as price is concerned. While cigar tobacco is much higher priced than chewing tobacco, at the same time the latter is of a much ranker growth, and acre yields are higher. The aim, however, in growing all types of tobacco is to increase the quantity without lessening the quality. The preparation of the soil is simple enough, but it must be done thoroughly. The main point is to maintain a mellow and deep soil, kept free of weeds, thoroughly and frequently tilled, and well drained.

All these points attended to, we can then consider the usefulness of modern fertilizing. The tobacco plant has rather thick fleshy roots, comparatively free of root hairs; that is, the little feeding roots distributed over the root area of all plants. On account of the deficient root hairs, as compared with other plants, tobacco has a narrow foraging power; it cannot to any considerable extent at least, make available the stores of insoluble fertilizers existing in many soils. In other words, the tobacco plant needs highly available plant food.

There is another point of perhaps equal importance—the nature of the plant food used. Green manuring or farm yard manure, or cotton seed meal, when used alone, tend to develop a coarse rank growth of tobacco which matures badly, and cures very badly. The reason of this is that the plants are given abundant supplies of nitrogen plant food, but very little potash or phosphate. It is quite true that green manure, stable manure and cotton seed meal all contain potash and phosphate; but, it is equally true that these elements of plant food are not liberated as rapidly as the nitrogen by the forces at work in the soil. It is not important to enter into the reasons of this here; experience has proved the fact.

However, if the potash and phosphate in these manures were as freely available to the uses of the plant as the nitrogen, the plant feeding would still be badly devised. Nitrogen is the disturbing element in tobacco growing. Now chemical analysis shows that to every 100 pounds of nitrogen in these manures, the potash and phosphoric acid are as follows:

	Potash.	P's. Acid.
Green manure...	91 lbs.	27 lbs.
Stable manure...	110 lbs.	52 lbs.
Cotton seed meal...	21 lbs.	30 lbs.
Tobacco...	168 lbs.	38 lbs.

In every instance the tobacco crop needs more potash in proportion to the nitrogen than is furnished by the manures; in other words, there is with all these manures, an excess of nitrogen, which means more or less of a failure in the quality of the crop grown with same. All soils contain more or less plant food as a natural condition of the soil, but of the three elements of plant food, nitrogen most readily becomes available when used in a crude and insoluble form. Therefore, the average tobacco crop gets more nitrogen plant food than potash and phosphoric acid to properly accompany same to insure a well-ripened crop. Chemical fertilizers are prepared to exactly suit the conditions, and are unquestionably the most satisfactory means of fertilizing tobacco.

As a result of careful study of many field experiments, the best all around formula for tobacco is as follows:

Ammonia.....	4 to 5 per cent.
Postash (actual).....	8 to 9 per cent.
Phos. acid (available).....	4 to 5 per cent.

How much to use is a matter of individual judgment, or experience; also, upon the quantity of crops expected. Connecticut produces 1,400 pounds leaf per acre as against 400 pounds in North Carolina. It is evident that more fertilizer should be used in Connecticut than in North Carolina. As a matter of fact, a fairly good crop of tobacco uses per

acre about 100 pounds nitrogen, 108 pounds potash and 38 pounds phosphoric acid. From this data, the quantity of plant food best to use, can very easily be figured out.

Chlorine is injurious to the quality of tobacco, therefore, the potash in the fertilizer should not contain any chlorine. High grade sulphate of potash should be insisted upon by planters, in the commercial mixtures offered them. If fertilizer manufacturers once know what their customers want, there will be no difficulty in having properly made goods offered. In fact, the planter must do thinking for himself in growing tobacco, all along the line, and there is no more important point than the balancing of plant food. For example, two fertilizers are given herewith—

	I.	II.
Ammonia.....	2 to 3%	4 to 5%
Postash.....	2 to 3%	8 to 9%
Phosphoric acid.....	6 to 8%	4 to 5%

Now, both these fertilizers are very good, but while No. I is excellent for grain, it is nearly valueless for tobacco. It is all right in its proper place; the planter must study out these points for himself.

J. M. SHELTON.

Sheriff Page, of Wake county, an old and observant farmer, tells me he has never seen oats so badly winter killed. One cause was the great dryness last fall. On a field of oats sown as early as last September there is not a vestige of any. Wheat is also badly injured by the cold.—F. A. Olds.

EDUCATING FARMERS IN TENNESSEE.

Correspondence of The Progressive Farmer.

The short course in agriculture at the University of Tennessee opened up on January 3rd with a good attendance and bright prospects for the ensuing term. As many students found it impossible to secure all the information they desired in one term of ten weeks, a second year's work has been introduced. The boys are kept pretty busy, being engaged from eight o'clock in the morning until six at night with an hour and a half for dinner. Each week during the first year they receive instruction in the following subjects:

Agricultural Chemistry two hours, Horticulture six hours, Breeds, Breeding and Feeding three hours, Farm Crops and Farm Management two hours, Mechanic Arts and Wood Working four hours, Veterinary Science six hours, Dairying 15 hours, Stock Judging 10 hours, a total of 48 hours a week.

The boys who have entered the course in the past have almost without exception returned to engage in farm work and the demand for trained men is much greater than the supply. The short course in agriculture is simply a school of practical experience where all who choose may gain useful information relating to the best agricultural practice. The need of education on the farm is of course apparent and especially is it true in this age of competition when frauds are so frequently practiced on the farmer. Think of a farmer paying \$25 to \$28 a ton for a fertilizer containing 2 to 4 per cent. of potash and other ingredients in like proportion? If he applied 100 pounds of this mixture to the acre he would be putting on from two to four pounds of potash, an amount utterly inadequate to supply the needs of any farm crop, and yet he is paying a high enough price to secure a fertilizer containing 15 to 25 pounds of potash and the other food ingredients in the proper proportion if he had only known how to buy and mix it himself. Certainly it will pay the farmer to learn through the short course about these things.

ANDREW M. SOULE.
University of Tenn., Knoxville.

Lumberton Cor. Charlotte Observer: Mr. G. G. French is succeeding nicely with his trucking operations. He has at present 27,000 cabbage and 60,000 lettuce plants under cover and his planting will cover about eight acres. Mr. John H. Stitte, of Maryland, is in charge and says that the land here is as fine for such crops as can be found.

The Poultry Yard.

\$100 PRIZE ARTICLE ON GREEN BONE.

Correspondence of The Progressive Farmer.

We enclose herewith proof of the article on the value of fresh out bone as a poultry food, which in the estimation of the three judges is entitled to the grand prize of \$100. This article was written by W. F. Adam, of Yoakum, Texas, to the Farmers' Voice of this city.

Of course we are sorry the article submitted by one of your readers did not receive the prize, for it was most excellent. In fact all of the articles were of a very high order, and the judges tell us the task of selecting the best one was not at all easy.

Kindly publish this prize article in the earliest possible issue of your paper, calling attention to the award in a suitable manner, and embracing the opportunity to properly emphasize the great value of fresh out green bone as an article of poultry food at this season of the year, and urge your readers to correspond with various manufacturers of these bone outter devices which may be advertised in your columns.

F. B. WHITE.

Chicago, Ill.

The Prize Article.

My experience with out bone as a food for fowls extends over two years only with a flock of 100 hens. Prior to that time I had not used out bone and my article is based on the percentage of gain in the growth, health and eggs of fowls over the two years previous, when I did not use bone; all other conditions for the four years being about the same.

My attention being called to the value of fresh out green bone as a food for poultry, I determined to experiment. I rushed some hog bones as best I could and fed to layers. The result was so satisfactory I bought a small bone outter and began to feed green out bone to my poultry regularly twice a week. I tried all sorts of bones and have found the hog and beef bones the best, being easier obtained and containing more of the nutritive value.

I get a soup bone of the butcher, shave off the meat (a little meat won't hurt if you intend feeding as soon as out) and I feed the same day it is out.

Some people make the mistake of using bones that have been boiled or lain out and sun bleached. Some of the most essential feeding value of the bone has thus been lost, especially as feed for growing chicks. The animal, as well as the mineral qualities of the bone, is what makes it valuable. I experimented with out chicken bone a little and fancied I saw an improvement over the other bone, but I am not sure, and even though there be, it is not convenient to get green chicken bone. Be sure that the bones used are not those of animals that have died of disease, old age or starvation. The former two are dangerous to the health of fowls, the latter worthless. Bones of young animals are best.

For growing chickens, after two weeks old, I mix the bone meal with corn crops, dampened with curd milk (water will do), so that each bird gets from a half to one teaspoonful of the bone meal, according to age.

It is an excellent bone food for the fowl and general invigorator and growth forcer.

Extra large and quick growth bone in fowls means more meat, and more meat means 7 to 10 cents per pound.

For laying hens I feed mixed as above, only that each hen gets one tablespoonful twice or three times a week, according as I think they may need an extra allowance. They need more when they are laying regularly or moulting.

The results of the bone as a feed is seen in a very few days in the renewed vigor, health and appetite, and last, but not least, egg product.

Taking every advantage gained by feeding bone—i. e., general health of flock, quick growth of broilers, increase in amount of eggs, etc., over the two years bone was not fed, I figure it—and I keep close accounts

—that the profit derived is 15 per cent. over the profits of the two preceding years. This 15 per cent. is attributed to the bone feed and the other increase in profits was credited to the source from which they came.

Now don't feed an overdose at first, or at any time for that matter; feed regularly.

Don't expect the hens to lay two eggs daily and the young chicks to spring up in one night like mushrooms, when they are fed bone. Mix well with the other food so that each bird gets its proportionate share.

Don't expect to feed bone only. The bone is only an additional feed, a sort of tonic.

Now I am not going to go into detail to explain how the bone assists—couldn't if I wanted to—only to say that the component parts of all meat bones are the same, and the mineral part of bone may be found in egg shells. Bone and shells must be supplied from what the fowl eats, hence we feed it to them, directly in the shape of out bone, instead of indirectly, in the shape of corn, oats, etc., etc.

W. F. ADAMS.
Yoakum, Texas.

THE FARMER NEEDS IT.

We occasionally meet with people who wonder if incubators are a success. They cannot believe that they will hatch chickens as well as hens will, but they would be tempted to try them if they could be convinced they are even a tolerable substitute for hens. These people can hardly credit the statement that the incubator will do the work better than hens will. It will hatch more chicks from a given number of eggs, and while it is doing it, it will make no more trouble for the person in charge than one sitting hen. This is presuming, of course, that the incubator is a good one. All incubators are not equally good, but we know of none whose advertisements are accepted by reputable journals which are a failure.

An incubator should be a part of the equipment of every farm. The idea prevails that incubators are not for farmers' use, as it is supposed that they require a great deal of attention, such as would make it inconvenient for a farmer with all of his other duties in the spring to give them. The incubator will relieve the farmer's cares instead of increasing them. If he assumes any portion of the labor of looking after the chickens he will save time and work by the use of the incubator.

Broody hens are always scarce in March and April. If the flock has not been laying steadily through the winter, broody hens will become plentiful just about the time that half the crop of chicks should be out of the shell. The consequence is that the premises are overrun with late hatch chicks which will not attain maturity until after snow flies. The incubator is always broody, and will hatch the chicks when you want them. It will pay for itself the first season, and if well cared for, will keep in good working order for twenty years. The farmer needs an incubator as much as anybody. He will never understand how badly he needs it until after he has owned one and used it for a year or two.—Wallace's Farmer.

There are indications that the increase in the tobacco acreage will be considerable this year, as there is a good deal of inquiry for seed and many new barns are being built. The truckers are getting their fields in shape for planting whenever the days permit working the ground. A good many fields are now planted in young cabbages, but their growth is slow at present, though the roots of the plants are getting hold on the soil. The growers of lettuce are making daily shipments and a good part of the crop has gone North. This is grown in frames under a canvas covering. Radishes are being shipped also. There is not a day in the year when some crop is not being grown in this section.—Newbern Cor. Post.

A friend may be reckoned the masterpiece of Nature.—Emerson.