

PROGRESSIVE FARMER

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

Vol. 14

RALEIGH, N. C., AUGUST 8, 1899.

No. 26

PUBLISHED WEEKLY

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THE PROGRESSIVE FARMER is the Official Organ of the North Carolina Farmers' State Alliance.

PRACTICAL FARM NOTES.

Written for The Progressive Farmer by the Editor, and Guy E. Mitchell.

For the farmer who uses his brain and therefore appreciates a work which rewards careful study and thought, a most valuable bulletin is "Rational Stock Feeding," by Profs. Emery and Johnson, of our North Carolina Experiment Station. It is a work of permanent value. It appears as Bulletin No. 163 of the Station, and is for free distribution.

The note regarding the feeding value of alfalfa in last week's Progressive Farmer has doubtless aroused the interest of our readers in this crop of so much value in the dryer sections of our country. The two articles on this subject which we present this week will therefore be appreciated. In many sections of North Carolina alfalfa can be grown with profit.

Most people have an idea that our dairy products are far more valuable than our poultry products, but as a matter of fact statistics show that the United States produces annually \$560,000,000 worth of poultry products and only \$260,000,000 worth of dairy products. And still we import eggs. The farmer who hasn't time to consider the egg and chicken business is far behind the times.

The farmer's garden is too often sadly neglected and so fails to contribute a fair proportion of value in the affairs of household economy. Home gardening requires attention to many little details, and the exercise of some thought, as well as do the main crops and "letting the garden take care of itself" deprives many families of luxuries that ought to be regarded as necessities to right living.

The little sparrow hawk is generally considered a friend of the farmer, though he does, once in a great while scoop in a small chick. But he prefers mice, young rats and grasshoppers, of which he consumes enormous quantities, being a very voracious bird. In stomach examinations made of this hawk incredible numbers of grasshoppers remain were found: enough it seems for large sized fowls. In Florida these birds are very tame, as they are never molested by farmers.

Although President Cleveland and his "forestry commission" were roundly abused at the time, he boldly instituted the policy of forest reservations and the great value of this action is now admitted and recognized throughout the country, not only by the friends of the forestry movement but by everybody who does not favor the wanton destruction of our great forest areas. At the time, no one received more vigorous denunciations than Mr. Gifford Pinchot, who was pounced upon alike by Senators, Representatives and a good proportion of the press. Mr. Pinchot's attitude is now commended and in his present capacity as Chief of the Division of Forestry he is in a position to see the results of the work accomplished.

The Department of Agriculture has received for distribution to careful farmers, a considerable quantity of seeds from the dry regions of Siberia and Turkestan. Among these are:

hairy vetch, which is drouth and also cold resistant, a variety of winter rye which is especially hardy and drouth resistant, oats and one or two kinds of winter wheat. Most of these seeds are thought to be suitable to parts of the country having extremes of temperature, and especially valuable in the Dakotas. The rye might be worth a trial here in the South. Some of the Turkestan alfalfa supposed to be splendid drouth resistant is also on hand. The peculiar advantage claimed for this alfalfa, however, is its ability to withstand intense heat.

Some interesting tests in cheese ripening have been made at the Wisconsin Experiment Station. It was found in these investigations that cheese ripened faster (as measured by the formation of soluble proteids) at a higher than at a lower temperature, whereas the cheese cured at a high temperature contained less bacteria than that kept in cold storage. The commercial value of the cold storage cheese was rated by an expert at 74 cents, that cured at normal temperature at about the same price, while that cured at a high temperature "had a rank flavor and a value not exceeding 3 or 4 cents a pound." At that time prime Chester cheese was quoted at 7 1/2 to 8 cents. The high temperature impaired both the flavor and the texture, whereas the cheese cured at 55 degrees and below were invariably of good quality and were entirely free from all bitter flavor.

The Idaho Station, like our North Carolina Station, has been making some interesting chemical analyses of various products bought in open market and publishing the results, giving the names of the manufacturers in each case. If this course were pursued by the authorities of each State and such literature distributed broadcast, the pure food question would necessarily become a much less troublesome problem.

A sample of vinegar is shown to contain but 2 per cent. of acetic acid and .66 of a per cent. of total solids, whereas a good article—the New York standard, by law, is 4.5 per cent. acetic acid and at least 2 per cent. of solids. An analysis of a "German Washing Fluid" contained mostly water with a little soap and soda. It was put up in a quart whiskey bottle and sold for 25 cents, while it is stated to be not worth 5 cents, including bottle. The label contained the legend "Beware of Imitations!" An original package of "B's Pure Concentrated Lye, Double Strength of Common Potash," showed absolutely no potash, but a sodic lye, a much cheaper article." As an illustration of the extent to which the public permits itself to be duped and taken by the street fakir a "Solid Silver Spoon," samples of which, by the half dozen, were eagerly sought by the crowd, was purchased upon the streets. The Analyst's return was: Iron, 97.56 per cent., and tin, 2.18 per cent.

About fifty thousand persons die annually in the United States from typhoid fever, and more than ten times this number are sick with this disease, according to Dr. V. C. Vaughan, of Michigan. It behooves the farmer, the community, the city, to guard well its public water supply and reservoirs, and during warm weather to have the same frequently inspected.

To those who value their health and that of their family; to those who would have strong and thrifty animals; to those who desire pure milk and first class butter, it is of primary importance that their water supply should be from a source beyond suspicion, and that this source should be carefully guarded against pollution. The statistics of boards of health demonstrate that the maximum of sickness and the minimum of water are coincident in September and October. Usually a low stage of water represents a concentrated state of contamination, hence typhoid fever outbreaks that are traceable almost directly to the drinking water and its sources of supply during those months.

There is good reason to suspect the water of a well whenever a vault is situated within a hundred feet of it, particularly if the soil is porous. In numerous instances fluids from excreta have leached into wells from great distances. Dangerously contaminated water may be, and is often found to be, clear and colorless and to have no bad taste.

FARM AFFAIRS.

THE ALFALFA PLANT.

A Western Farmer Tells of It in His Section

Correspondence of the Progressive Farmer.

Alfalfa is a species of Chilean clover, some times called lucerne, extensively grown in the irrigated sections of the Rocky Mountain States. The plant was introduced into California fifty years ago, and has since become the popular forage plant of the arid States. It has a long tap root, going several feet for moisture, and is a great drouth resister. The plant is peculiarly adapted to irrigated lands but will thrive in the rainfall, if sown on well drained soil. It yields from two to six good crops of hay every year, some farmers in the valleys of Arizona, California, and New Mexico getting ten tons an acre from four cuttings. The seed weighs 60 pounds to the bushel and fair crops yield from ten to twenty bushels per acre, selling generally at seven cents a pound.

The plant is rich in protein, making it an excellent muscle producing food, for cows, pigs, and general farm animals. The green leaves are relished by poultry, and where it is kept well pastured the alfalfa field is good for dairy cows. When in blossom an alfalfa crop supplies much food for bees and the honey made from such flowers is relished by the most dainty appetite. It is not considered a first-class food for working horses unless accompanied by fair grain rations, because of the temporary nutritive value. Alfalfa lawns are becoming quite popular, as the plant will stand all the water applied and suffer neglect without any noticeable deterioration.

Alfalfa seed has an oily coating which protects it from cold and dry weather. It should be sown early in the spring, either by the broadcast method or with the press drill. If sown for seeding purposes twelve pounds will be sufficient for an acre, but for hay may sow from twenty to thirty pounds. The soil must be in good condition and if the land is old it is best to have the alfalfa preceded by a hoed crop. As it is a leguminous crop and collects nitrogen from the atmosphere, the only fertilizers needed to make good crops are phosphoric acid and potash. These can be supplied by using either acid phosphate or ground bone to furnish phosphoric acid, and muriate or sulphate of potash for potash. Two hundred and fifty to 300 pounds of bone or acid phosphate, and 150 to 200 pounds muriate or sulphate of potash per acre would suffice for the purpose.

Cutting of alfalfa should begin when the blossoms show over the top of the plants. If left to get old the stems become sticky and are of no value for food for any animal. After laying in the swath about one day it may be raked into windrows, then cocked for hauling. The most of Western alfalfa is stacked in the field with no covering or other protection, but it makes better hay by being stacked in a barn or shed, or covered with straw or canvas. If fifteen pounds of salt be scattered over each wagon load as it is stacked the hay will be more readily eaten by stock. When stacked out in the field it should be ventilated by boxes or poles running through the center of the stack, from the ground up.

An alfalfa field will stand many years after it is once set and get better with age, if not neglected during the irrigation season or left in pasture too long in the spring and fall. Where not pastured the surplus leaves form a winter mulch and spring fertilizer. Here our way of applying water is the furrow system of having ditches about four feet apart, running with the slope of the land. Some farmers flood the fields successfully, but that is not always practicable or advisable. If the plant is irrigated it should be done just after each cutting to start the young shoots at once in order to protect the roots from the sun. In North Carolina the roots will always have plenty of moisture from below.

The chief enemy of the alfalfa plant is the dodder or love vine. It is a parasite, growing exclusively from the sap of the alfalfa stems, and will soon destroy a field if not checked. Some report it being poisonous to stock, but this is questioned. The cheapest and best means of stopping the growth of this plant is to spray over the clusters with kerosene and burn the plant and seed. The fire will not destroy the alfalfa roots, but will kill out the dod-

der. If cows should bloat on the young alfalfa leaves, as is some times the case, they may be relieved by fastening rowels or sticks in the mouth, giving some soda, chasing about the field or in extreme cases, stabbing behind the ribs with a sharp knife or trocar. JOEL THOMAKER, Yakima, Washington.

ALFALFA IN NORTH CAROLINA.

Correspondence of the Progressive Farmer.

Your query concerning alfalfa received. This is a good permanent crop for North Carolina, where the soil is clean of weeds and has moisture enough at considerable depth for the abundant growth which this crop can make when given a chance.

If asked to grow this crop, I would rather put it on a soil underlaid with gravel or sand that bears water at 5 to 50 feet below the surface. It would be of little use to put it on a field of red clay with archean rock one or two to five or six feet from the surface.

On this kind of soil alfalfa will parch when it should be making its most luxurious growth. On the rich red land of Oconee alfalfa has flourished. It should do so in the eastern counties, especially where the roots can penetrate to subterranean water.

No one should plant alfalfa as a temporary crop. It should be put where it will be handy and should be counted on for 5 or 10 years at least. It would pay on suitable soil to clean out weeds by a year's close culture and to enrich the soil in the mineral elements of plant food before sowing alfalfa, and then it might pay to drill it in narrow rows and cultivate it the first year with almost as close attention as the onion raiser gives his crops. From three to five cuttings of alfalfa should be normally grown in North Carolina.

It is allied to the clover family, being a member of the *Medicago* family. It has been subjected to animal digestion with very good results comparing favorably with the true clovers. These are the kinds the husbandman should encourage in order to feed his stock at home that the land and stock may feed him.

Yours sincerely,
FRANK E. EMERY.

WORKING IN HARMONY

The Lowry and Round Lap Systems Seem to Understand Each Other.

A correspondent of the Kinston Free Press says:

It is freely charged that the promoters of the round bale have trust tendencies, in fact that there is practically but one concern in the business. They deny the charge by saying that there are three round bale presses sold now, and that therefore there is no likelihood of the formation of a trust to control the ginning of cotton.

Nevertheless two of the round bale concerns, the American Cotton Company and the Lowry Round Bale Company, will not sell their presses outright, but place them on a royalty only.

Ask them why it is that, claiming to be the friends of the farmers and ginners, they will not sell their machines to them at about \$350 and realize thereon a handsome profit; for themselves, and leave to the ginners the profits of the ginning, and they answer readily that they have a good thing, in which they are protected by the patent office, and that they intend to keep it so that it shall operate always for their interest, netting them from \$1,500 to \$2,000 on each machine.

There is absolutely no competition between these people—because the American Cotton Company operates in the southwestern cotton States, and the Lowry Round Bale Company entirely in the East.

And add this fact—when you ask them about buying the machines outright, they refer you to the third and only concern in the business, the Ginners' Compress Company. Communicate with them and you will find the price beyond the reach of any ginner in Lenoir county.

Another peculiar thing will strike the average man as significant. The Ginners' Compress Company sends out American Cotton Company's literature to explain the advantages of their machines.

Is it not patent that they are all the same? Do these facts not point to an effort to inveigle the producers and ginners into the trap set by the round bale people? Once all the millions of capital already invested in the old process is rendered valueless, and com-

petition in the handling of the cotton crop destroyed, the greatest trust in the history of the world will be unmasked, and we will be helpless. Let us let well enough alone.

It would be bad enough if the ginners could buy the machines to replace the old, but they should never think of abandoning their present machinery and paying a royalty for the use of somebody else's machine.

PLASTER.

At a recent farmers institute at Argos, Marshall county, Ind., the statement was made that plaster, while benefiting crops for a time, would ultimately impoverish the ground. The theory was that it drew and concentrated about itself the plant food in the soil and delivered it abundantly to the growing crop. The effect of plaster upon the soil has always been something of a mystery. It is a mineral, and consequently can have but little direct effect, and often seems to have none directly or indirectly. It is possible that the theory advanced at Argos is correct. Plaster is certainly an absorbent, and if it attracts the fertilizing elements, according to the above theory, and exhausts them in one crop, or two or three crops, it would exhaust the soil, and its use, in such case, would simply mean that it would be necessary to furnish the soil with plant food for it to absorb.—Agricultural Epitomist.

THE FARMER'S HEAVIEST TAX.

The talk on agricultural depression, how the farmer can get nothing for his produce; the discussion how the great trusts of the country are the chief cause for his depression, and the talk in each political campaign of the office seeker, who if only elected will work for the farmer's interest in the legislative councils, all these the farmer has had thrust at him, no matter who is elected to office, he finds his condition practically unchanged, unless he gives up trusting to others, and turns in and helps himself.

The farmer's greatest foe is at his own gate-way.

The sight-of the tax-gatherer is not the most unwelcome sight that meets his eye as he stands looking down the county road. This same county road, which leads from his farm to town, if it be not in good repair is his most inveterate enemy.

The mud tax is the great burden which oppresses and grinds the life out of the farmer.

This is the tax, mud, which prevents his marketing his produce when good prices prevail in town.

This same mud tax injures his children by depriving them of schooling, and the whole family suffer in their morals by being unable to attend religious services.

It would seem that anything which would offer relief to the farmer from this tax, would be gladly accepted and welcomed.—Newberne Journal.

INDIRECT FERTILIZERS.

In a short newspaper sketch such as this, it would be quite impossible to give so important a subject as "Indirect Fertilizing" the amount of consideration it deserves. But we can at least try to show some of the evils as well as some of the benefits of indirect fertilizers.

Before beginning to discuss indirect fertilizers, however, it might be well to note what constitutes direct fertilizers. There are certain forms of plant food that contribute directly to the growth of plants; these materials are nitrogen, potash and phosphoric acid, and, in order to get good results, they must either be already present in the soil, or they must be placed there in proper proportions. As different plants require different fertilizers and in different forms, farmers should study the requirements of each crop and make plant experiments on their own lands. Gypsum, or land plaster, quicklime or burnt lime, and common salt are indirect fertilizers, because they do not add to the soil needed plant food, but, if used judiciously, are valuable stimulants to unlock or make available the plant food which is already in the soil.

The following propositions are so well established that they ought to be accepted and duly considered by every farmer in the cultivation of the soil:

That there are no lands of inexhaustible fertility.

ured by the amount of mineral and vegetable elements favorable to the production of plants which it contains, and that these exist only in limited quantities.

That so much of the above elements has been required to produce a crop is literally removed from the soil, upon the removal of that crop.

That therefore such removal leaves the land, to that extent, poorer in these necessary elements than it was before such removal.

That some soils may be deficient in certain elements which are absolutely requisite for the production of certain plants, and that these plants cannot therefore be successfully raised upon such soils.

That a soil may be barren for some plants but not for others.

That when a piece of land has been exhausted of indispensable soluble minerals by a long course of shallow cultivation, as is the practice here in the South, a fresh supply of these minerals may always, to some extent, be brought to the surface and made available by deeper plowing and subsoiling, and the use of indirect fertilizers.

Land-plaster is an indirect fertilizer which has been in use at the North a good many years, but not so much in recent years as formerly. Years ago it was used on grain, grass lands, Irish potatoes and in the stables and manure heaps to prevent the escape of ammonia. The practice now is to use kaint, as that material not only prevents the escape of ammonia, but at the same time adds potash to the manure which would otherwise be deficient in that element. New England farmers found that after using plaster for a number of years, their lands, although producing fine crops at first, gradually became worn out. The plaster seemed to unlock all the treasures of plant food which the soil contained, and finally left it almost barren. Those were the days before commercial fertilizers came into use, and we had to rely for plant food solely on stable manure. Modern methods and scientific agriculture have called into existence the hundreds of fertilizer factories which are now to be found in all parts of the country.

Lime is an indirect fertilizer that is more used than any of the other so-called stimulants. It has, in the form of either a carbonate or sulphate, been instrumental in the improvement of a great variety of soils. The application of lime is beneficial to every soil not already sufficiently charged with it. It makes heavy lands lighter, and light lands heavier. It gives adhesiveness to sands or leachy gravel, and comparative openness and porosity to tenacious clays. It has the power of converting the insoluble matters in the soil into available plant food. Lime is used to sweeten sour soils. Low mucky lands and reclaimed swamp bottoms where excessive moisture is always present, if put under cultivation and planted to some crop like sugar cane, are very apt to become sour. Lime would be a great benefit to such lands, and the syrup made from cane grown on a soil so treated would have less acidity.

There is a great deal of land here in the South, and especially that devoted to the growing of sugar cane, that would be much more productive if it could be given a dressing of lime about once in five years. The amount to be used would depend entirely upon the soil. If vegetable matter is present in the soil to a considerable degree, a greater amount of lime could be used to advantage, say from ten to twenty bushels of slacked lime per acre. To give lime its fullest effect, it should be kept as near the surface as possible, and this might best be accomplished by spreading it after plowing, taking care to harrow it in well. Its weight gives it a tendency to sink, and after a few years' cultivation a larger percentage of it will be found to have gotten beyond the depth of its most efficient action. This gives an additional value to the system of subsoiling. And the deeper plowing brings up to the surface, or within reach of the roots of the plants, the latent plant food that has gradually sunk beyond their reach.

Common salt is an indirect fertilizer. In a pure state sixty per cent. of it is chlorine and the rest sodium. Its great affinity for water has the effect, as in gypsum, of attracting dew and atmospheric vapor to the growing vegetation thus ensuring a much

[CONTINUED ON PAGE 8]