

# PROGRESSIVE FARMER

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## Agriculture.

### COW PEAS AS A RESTORER

Not even clover surpasses the cow pea as a soil renovator. The most badly worn and abused soil may be quickly brought to a condition for profitable production by planting a succession of pea crops upon it. Nor are the best results obtained by plowing under the pea vines when green. Careful experiments made at the Georgia Station show:

1. That the best disposition of a crop of field peas is to convert the vines into hay.
2. The next best is to permit the peas to ripen and gather them (or pasture them).
3. Turning the pea vines under green gave the poorest economic results.

Of the capacity of the cow pea as a fertilizing agent, Prof. Stubbs, of the Louisiana Experiment Station, says:

Valuable as this plant is for its vine and fruit as food, its superlative excellence lies in the property which it has of restoring worn soils. This property it shares with all leguminous plants, but it surpasses them all in producing the maximum results in a minimum of time. Clover, trefoil, lupine and alfalfa are used in different countries as soil renovators. They are planted in the fall or spring and occupy the ground the entire season or longer for good results. In the South the cow pea is planted in the late spring or early summer and the crops of vines or peas are harvested or buried for fertilizing purposes in early fall. The growth and development of this plant is both rapid and enormous, particularly when planted on good land.

Much more might be written to the great value of the pea crop. Summing up its chief merits we have:

The pea will thrive upon every variety of soil and will grow on land too poor to grow clover.

It will produce a heavy and rich crop to be returned to the soil in a shorter period than any other green manuring crop.

On the same land in one year two crops can be grown, but it requires two years for clover to produce a hay crop, so it will be seen that four crops of peas may be grown in the same time as one crop of clover.

The pea crop feeds lightly upon the soil but largely upon the atmosphere appropriating nitrogen through the agency of the bacteria that infest its roots.

It is one of the best preparatory crops for wheat, as it leaves the soil in excellent condition, which is an essential element in the growing of wheat.

The rapidity of its growth makes it the only crop in the South that may be used as a manurial crop between the harvesting of grain and the sowing of it on the same land.

It grows as vigorously as clover and in connection with that plant makes the South particularly rich in those vegetable agents that improve the soil.

It may be grown in connection with the corn crop, furnishing almost as much nutriment as the corn crop itself, with a positive benefit to the land.

It is a substantial factor in the production of cheap beef, pork, milk and butter.

It doubles the capacity of the land for wintering stock, and gives double the material for making manure heaps.

The galled and wasted places in the South can be more quickly and cheaply restored by a judicious cultivation of the pea, and by proper rotation of other crops with it, than in any other way.

By adding humus it preserves the humidity of the soil and so enables the crops to resist droughts.

The vines of cow peas furnish the very best material for ensilage.

The composition of cow peas and pea vine hay shows that they have a very high feeding value for all domestic animals.

Flatterers are the worst kind of enemies.—Tacitus.

### TO GROW THE BEST WATER-MELONS.

EDITORS PROGRESSIVE FARMER:—

We have, in the watermelons, a crop which is assuming very great importance at the South, and every year sees hundreds upon hundreds of acres devoted to their production; while in June and July they go North by the train loads, often bringing fancy prices.

To be successful with watermelons the grower must first select the proper location. The land should be well drained, of a light sandy texture, and naturally fertile. Freshly cleaned land is a good place, or an old straw field which has lain out a number of years. We have also had good success on a pea vine stubble, following in a rotation with cotton, corn with peas sown between, followed by oats, with peas sown again after the oats, to be cut for hay and furnish the pea vine stubble for our melons; then cotton again, and so on. In a four-year rotation like this, melons are less likely to suffer from that disease known as the Southern blight. But even this far apart, they are sometimes affected. Indeed this matter is assuming very serious proportions, and a remedy for the wilt, or blight, is needed.

It seems that the Alabama Experiment Station is meeting with some success in checking the disease by an application of lime to the infected land during the winter previous to planting. They are, I believe, continuing these experiments, and final result of which will be looked forward to with interest. It can, at any rate, do no harm to try lime at the rate of say 40 bushels per acre; for when one has to find a fresh piece of land every year on which to plant his melons, the land available for this purpose soon becomes exhausted.

One of my neighbors who is quite an extensive watermelon grower, after having used up his own land in this manner, has rented from year to year all the land in his vicinity that he could lay hands on, and what he will do now to find land free from the fungus, I am unable to say. Anyway, the best we can do for the present is a wide rotation and the use of lime.

After we have selected our location, the land should be well broken with two-horse plow and worked down fine. They lay off the rows ten feet apart with double mouldboard plow, going twice in the row, and running as deep as possible.

Prof. W. F. Massey, of your North Carolina Experiment Station, advocates the practice of checking off the rows ten feet apart each way, throwing out a wide hole at the crossings, in which half a bushel of compost made from well-rotted manure and leaf mould from the woods, is placed. This is spread evenly, and a handful of high grade guano worked in on the surface, after which the hill is made up, and the seed planted. We mean to try this method on our farm this year. We have, however, had remarkably good success by spreading our manure the whole length of the row in the deep furrows spoken of above, stirring in a little soil, and then bedding by throwing four furrows together over the manure. We then check across this bed every ten feet and plant our seed at the crossings.

A little dab of manure in the hill is not enough for melons, they need lots of fertilizer, and they need it spread out for a considerable distance from the centre of the hill; for as long as the roots can reach out and find fresh fields to conquer, the vines will continue to grow. Every one, however, is not able to obtain manure, or compost for their melons; especially is this true with the large grower, and guano if properly applied, can be made to answer very nicely. The main advantage with compost when put deep in the ground is, that it holds more moisture for the crop during a drouth.

I well remember one of the best watermelon crops we ever raised was fertilized with commercial fertilizer. The guano was applied in the drill at the rate of 300 pounds per acre, stirred in, and two furrows

put on it. We then let it stand about two weeks, after which we put 300 pounds more guano on each side of this list, threw two more furrows to the bed and planted. The plants came up with a fine dark green color, and grew off well from the start, doing really better than adjoining field on which manure was applied.

There is certainly a great deal of labor saved by using commercial fertilizer for melons, and if the soil is well and deeply prepared and cultivated rapidly after the plants start, almost, if not quite as good results may be obtained.

A fertilizer for melons should contain about ammonia 5 per cent., phosphoric acid 6 per cent. and potash 7 per cent., used at the rate of not less than 500 pounds per acre. Instead of that the following may be used: take nitrate of soda 200 pounds, cotton seed meal 700 pounds, acid phosphate 840 pounds and muriate of potash 260 pounds to make a ton—or tankage (9%) 625 pounds, bone meal 1,100 pounds, and muriate of potash 275 pounds, will also make a fertilizer with the proper analysis.

In regard to varieties, the old Georgia Rattlesnake still holds its own with us, while a new variety known as the Kleckley Sweet is proving a great favorite with many; the Jones is also popular, and we saw carloads of Kolb Gems going North last summer, but these are too coarse for our use, although they make a good shipping melon.

F. J. MERRIAM.

Battle Hill, Ga.

### SOME ESSENTIALS TO SUCCESSFUL FARMING.

EDITORS PROGRESSIVE FARMER:—

When we use the terra successful, we do not regard success as some do—"a mere accumulation of money," but a broader, higher success than mere money making.

The first essential to real success is adaptability. A man may undertake to run a farm just because he chances to own one without the least desire or pleasure in the occupation except, perhaps, the desire to accumulate wealth.

Such farmers are generally failures. If they make a living, it is under such circumstances that all around them feel the pessimistic gloom that such farmers carry with them to the postoffice, the town, and even to the church.

If a man cannot follow a vocation with a cheerful good will for the work and its surroundings, perhaps he had better quit. If a man is fitted for the high privilege of "subduing" the earth, tilling the soil, he feels that he is occupying one of the most important places he can possibly fill in this world, and feeling this way he may look about him to make a home, not merely a place to eat and sleep. A place where the loved ones who share his toils and cares can be happy with him.

And when the injunction (see Gen. 1:28) has been fulfilled, there is a real subduing of the elements that surround the farm, all for the use of its occupants. The realms of nature about the farm, when viewed from the proper standpoint, all conspire to assist in this important work. Fire, air, earth and water are all his servants, and when these are all studied the farmer sees his aids and co-workers busy around him. Even though he is resting from active labor, his work is progressing. He sees something to interest him, something to study; his mind does not rust for want of employment, but body, mind, and spirit all work in harmonious order to carry out the mission of the farmer and while he feeds the world, he may have, if he will, the power to rule the world by rearing those whom God has given him to understand that mind is above matter, and that farm work is not the drudgery it is often taken to be.

We may, if we are properly adapted to the work, make it the most pleasant occupation on earth because it is so closely allied to the great resources of nature in all her wonderful productivity and power.

D. LANE.

Craven Co., N. C.

### FOOD IN VARIETY.

EDITORS PROGRESSIVE FARMER:—

A variety of food seems almost as essential to the growth and good health of farm stock as good food is. From my own experience I am convinced that many stomach troubles of animals are due to the limited diet which farmers feed to their stock. Not even the most ideal food will take the place of mixed and varied rations. A few years ago I was in a position where the stock had very little pasture. There was a woodland range which they roamed about in, but it afforded little in the way of grass or hay. Green corn fodder on the other hand could be raised easily and cheaply, and this with straw and some meal and grain constituted the chief diet of the stock. No other roughage than green corn fodder with no ears on was fed through the summer. The animals relished the corn at first, but they soon grew tired of it and exhibited stomach troubles and indigestion. They would not of course eat straw when they could get the corn fodder in the green state. The following year I added grass and hay to the diet, and made the animals eat more or less straw before having any green corn fodder. The result was more than satisfactory, and I believe that any narrow diet of foods, no matter how rich and good they may be, does not produce the best results.

The temptation of modern farming is to give too much attention to some favorite crop, oftentimes a crop that does better on the particular soil than any other. This is good farming if we do not totally neglect other crops. A farm that is all around cultivated gives the best results. Nature never intended that we should become farming specialists to the extent that some carry it. One crop laps over another and helps to make it more productive and easier to grow, and this very fact should convince us that we need to raise more than one. I do not see how any one can crop corn or wheat or any other grain continually from the same land without ultimately ruining the soil in time. Yet this is being done in many locations, and poor farms are being made for the next generation to abandon. It is much like running a business that has established a reputation without much consideration for its future. When its credit and reputation have been exhausted then it is valueless, and it must be abandoned or built up again by the hard work of new men.

C. T. WAERENS.

### A NOTE FROM DR. CURTICE.

EDITORS PROGRESSIVE FARMER:—

Allow me to say a word through your columns to buyers of improved cattle.

Acclimation disease in bulls has for years been a bar against improvement by introducing thoroughbred stock.

By observing a few precautions bulls may be brought to this State to any portion of the "stocklaw" district at any time of year without danger of loss.

If there are no cattle ticks on the cattle of the farm: Either transport the imported bull in a wagon from the depot (not unloading into the cattle pens) or drive him in the middle of the road after greasing his legs and do not allow him to touch grass by the way. Grease them again when they arrive. Or on infested farms prepare a yard and shed in a field which has been cultivated during two years and no cattle allowed thereon. Build a double fence the inside being of high tight boards and the outer at a few feet distance of wire that will keep stock away. Provide shade.

Set aside a special pen in which cows may be served. Clean each cow of all ticks before admitting her and thoroughly grease her. When served take both away from this pen.

Feed correctly and allow plenty of exercise. A certificate stating that the bulls are not infected with any communicable disease and signed by the State they started from should accompany each importation. Buy any breed of cattle where quarantine regulations permit. COOPER CURTICE, Veterinarian, N. C. Department of Agriculture.

## Horticulture.

### JUST WHAT YOU WANT TO KNOW ABOUT SPRAYING.

EDITORS PROGRESSIVE FARMER:—

Yours of recent date asking for an article "covering pretty thoroughly the subject of spraying to suit North Carolina conditions, fruits, and seasons" received. This is a pretty large subject for one article. The subject of spraying for fruit pests is very extensive. As a rule spraying must be treated in detail in relation to particular pests, such, for example, as the peach tree borer, San Jose scale or apple scab. I would advise all your readers who want information in this line to send to the Department of Agriculture, at Raleigh, for a copy of the December, 1899, Bulletin, where the subject is treated in condensed tabular form. I can here attempt only a few suggestions, mostly of a general nature.

Firstly, spraying for fungous diseases must always be preventive, since plant diseases cannot be cured. Spraying for insect pests is generally curative—i. e., the spray kills the insects. For orchards and vineyards sprays mixed in water are best, dry powders are not practicable. But for field and garden, herbaceous crops as a rule powders are better than sprays. In a general way orchard fruits may be divided into two classes—pomaceous fruits, like apple and pear; and stone fruits, like peach and plum. As a general rule the same fungous and insect pests attack all the species of one class, but do not attack any of the other classes. The chief fungous pests of pomaceous fruits in North Carolina are the following:

- 1.—Scab, causing the fruit to become misshapen and knotty.
- 2.—Rust, causing the leaves to become covered with brown spots and soon fall.
- 3.—Bitter rot, causing the ripe fruit to become rotten in small round shallow spots.
- 4.—Fire blight, causing the twigs or large limbs to suddenly die and turn black.

The standard remedy for No. 1 is the Bordeaux mixture, which consists of 4 pounds blue stone, 4 pounds stone lime and 1 barrel of water. The first spraying should be given before the buds burst to kill adhering spores before these have a chance to infect the flower, which is the beginning of the new fruit. The second spraying should be given as soon as the flowers have fallen, and before the young fruit turns down. Subsequent sprayings must be timed with an idea of keeping the foliage well covered with the protecting fungicide whose presence shows as a whitish powder on the leaves.

The same treatment given No. 1 is sufficient for No. 2 and need not be specially repeated. The rust fungus lives during the winter on the red cedar, causing the "cedar apples" on that tree. All cedars within one-half mile of an orchard should be destroyed.

For pest No. 3 there is no efficient remedy. Some varieties of apple rot badly, and these should be dug out and burned.

No. 4 is our worst disease of the apple and pear, and is incurable. Blighted twigs and limbs should be cut off and burned, always cutting four inches below the lowest dead wood.

The chief insect pests of pomaceous fruits are as follows:

- 5.—Codling moth or apple worm, causing wormy fruit, which falls prematurely.
- 6.—Canker or measuring worms, causing damage to flower buds and later to the leaves.
- 7.—Oyster shell scale, causing the young twigs and branches to become covered with innumerable small yellowish bugs in summer and long narrow scales in winter.
- 8.—Scurfy scale, causing main trunk and limbs to become covered with oval whitish scales and young bugs.
- 9.—The San Jose scale. This is two well known to need description. The standard remedies for pests Nos. 5 and 6 is insoluble arsenic in

form of Paris green, or better and cheaper, arsenite of lime. This insecticide acts better if mixed with the Bordeaux mixture. In this way one spraying will serve for many pests. I recommend that 4 ounces of Paris green or arsenite of lime be always added to each barrel of Bordeaux mixture whenever the latter is used. "Wind fall" apples nearly always contain worms which soon come out, enter the ground and then change to the winged insect to lay more eggs. Therefore wind falls should be gathered up within 24 hours after they fall and fed to hogs or otherwise destroyed with their contained worms. Scale insects are difficult to destroy. Paris green is of no value against them. We must use something that kills by contact. The best substance for use against scale insects is fish oil soap. This must be dissolved in hot water at the rate of 2 pounds to 1 gallon and used on the infested trees, either in the fall, just after the leaves have fallen, or in spring, just before the buds burst. The soap may be used as a summer spray to kill the young swarming bugs, but at that season it must not be stronger than 1 pound to 4 or 5 gallons. This strength will kill the young insects, but not the old ones or those protected by scales.

In general orchards should receive a treatment for scales in fall. The dead leaves should then be raked up and burned and all trash removed or burned to prevent the harboring of disease spores and insect eggs.

The chief fungous diseases of stone fruits are as follows:

- 10.—Brown-rot, causing peaches and plums to rot and become covered with brown dusts.
- 11.—Leaf-curl, causing the young leaves to become puckered or curled, and soon after to fall.
- 12.—Yellows or Rosette, causing the trees to turn yellow, produce bitter or tasteless fruit, and soon to die root and branch. The standard remedy for both in No. 10 is the Bordeaux mixture, which for the peach tree should be diluted one-half. The first treatment should be given before the buds burst and subsequent treatments as described for pomaceous fruits. For yellows or rosette there is no treatment but a sharp axe.

The chief insect pests of stone fruits are as follows:

- 12.—Curculio, causing the fruit to become wormy and fall prematurely.
- 13.—Root-borer, causing gum to exude from base of tree. The tree may be killed by being girdled or may drop its fruit when about two-thirds grown.
- 14.—The San Jose scale and other scales.

Stone fruits are all very intolerant of Paris green and most other insecticides. Usually it is not advisable to use arsenites on this class of trees.

For curculio, jar the trees in early morning upon sheets laid on the ground under the trees. Use a padded mallet, give each of the larger limbs a smart blow. The insect lets go its hold very easily and "plugs possum" on the sheets. Gather them up quickly and throw them into a pail containing a gallon of water and a pint of kerosene.

The root-borer must be dug out with a sharp knife or wire. Scrape away the soil from base of tree, follow the line of gum until the worm is found. Painting the tree from the crotch to 2 or 3 inches below the surface with a paint made by wetting 4 or 5 tablespoonfuls of hydraulic cement in one quart of sour milk, will help keep the worms out, but the trees should be examined each spring and all worms dug out.

For scale insects on stone fruits use same treatments as for pomaceous fruits. A peach tree badly infested by San Jose scale is beyond recovery. It should be dug up and burned. The peach is a short-lived tree, rarely bearing fruit after it is 12 or 15 years old. The necessity for hygienic precautions and cleanliness in peach and plum orchards is even more urgent in case of apple and pear orchards. All mummied fruits should be removed from trees and

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