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THE



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FARMER.

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

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## Agriculture.

EDITED BY BENJ. IRBY, RALEIGH, N. C.

Prof. Benj. Irby, late Professor of Agriculture, Agricultural and Mechanical College, Raleigh, has become a regular contributor to this paper. All questions relating to the farm, garden or orchard will be answered by Prof. Irby.

### FARM NOTES.

Most soils need more nitrogen. Why continue to apply more potash and phosphoric acid when your land is perishing for lack of nitrogen? Nitrogen as it comes in a bag of fertilizer is very costly but there is no reason why any farmer should not plant a large crop of peas and get a supply from mother Nature free.

Bulletin No. 49 of New Hampshire Station, says that tankage is the cheapest source of both nitrogen and phosphoric acid in that State. Fertilizers have been cheaper the past year than ever before, and are likely to still further decline. But the station analyses show that nearly all commercial fertilizers are too rich in phosphoric acid and potash as compared with the nitrogen they contain. Farmers are advised to procure additional nitrogen in the form of stable manure or in crops of clover, peas or vetch.

Anthrax is an exceedingly virulent, fatal and highly contagious disease attacks horses, cattle, sheep, and even people. Formerly it was called murrain, or bloody murrain, and is now called charbon throughout the South. It is most apt to prevail in low, wet countries, but it may exist in hilly sections.

The germ of this disease is very tenacious. Earthworms or rains may carry the germ deeply into the earth where an afflicted animal has grazed or has died and decayed, and these germs may again be brought to the surface by earthworms five years afterward and produce another outbreak of the disease. Hence the importance of promptly burning every carcass. It is supposed that the germ of this terrible malady was first imported into this country in hides from animals that had perished of it in Europe. Whether this be so or not, it is well known that it has often been imported in such hides. Of five outbreaks in Pennsylvania, two have been traced directly to tanneries that had received a cargo of hides from China. In both cases the first deaths were among the persons employed in sorting and manipulating these hides, and afterwards the disease attacked the stock along the streams below these tanneries, the offal from the tanneries being dumped into the streams.

Many growers—and doubtless some of them are PROGRESSIVE FARMER readers—seem to think it necessary to hill or ridge their potatoes to secure a good crop. In a very wet season or on very wet land this is probably true, but for ordinary conditions and on land suited to potato growing level culture should be practiced. The ridge system will undoubtedly ripen the crop earlier than the level system, but will not produce a better yield except in the presence of excess of moisture. In 1896, at the Arkansas Station, a double series of plots were planted, the ridges varying from twelve inches high down the level. One series consisted of Bliss Triumph and the other of Early Ohio. One third of each plot was dug May 20, another third June 1, and the last on June 18. A very dry season seriously affected the yield and hastened maturity, but served to indicate to a marked degree the advantage of level culture, particularly for a dry season.

The level plots yielded 30½ bushels more than the ridged plots on May 20, 56½ bushels more on June 1, and 66½ more on June 18. The first potatoes dug retailed at \$2 per bushel until the first shipment arrived from New Orleans.

In the variety test, Ohio Jr., gave the largest yield, Crown Jewell second and World's Fair third. Triumph, which is the most popular potato in the South and is much more extensively grown than any other in that section, stood twelfth on this list.

Spraying or dusting Paris green on the vines to kill potato bugs cost \$3 per acre and gave an increased yield of eleven bushels per acre.

No farmer who gives all his time and labor to a single crop can utilize to the best advantage the possibilities of his farm.

### "ALL ABOUT WATERMELONS"

Correspondence of the Progressive Farmer.

In your article on the above subject in your issue of April 13th, you quote Prof. Hugh N. Starnes, of the Georgia Experiment Station, as saying: "Like the grape, the watermelons must be ripe when started to market, for it will not ripen up after being pulled."

I beg leave to differ with the Professor on this vital subject. It will ripen, but not properly; it will never make a good melon. But so far as red meat and black seed are concerned, it is all right, though it may have been as green as a gourd when pulled. It requires an expert to tell a watermelon that was pulled before ripe. I mean to tell before cutting. The ripening process imparts to it the proper sound when thumped, and the seed and meat appear to be all right.

HOW TO TELL WHEN A MELON WAS PULLED GREEN.

If a melon ripens properly on the vine a number of small bumps or freckles, will appear on the outer edge of the portion that lay on the ground. If these little bumps are lacking you may know that the melon was pulled green, to ripen afterwards. This test will be found lacking on a very large proportion of the melons shipped North.

A green melon will not only ripen after it has been pulled, but will ripen faster than if left on the vine. Hence the temptation to get them into market early and procure a high price after causes them to be pulled too soon. I have seen some lots North that you could scarcely find a good melon in them, yet the average buyer would pronounce them ripe. The meat of such melons is hard and not fit to be eaten.

A RECIPE FOR PRODUCING CHOLERA MORBUS

Melons of the above kind followed by pears, will rarely fail to produce cholera morbus in ten minutes.

Why the cities North have not devised means to prevent unripe melons from being palmed off on them is a mystery to me. But very few of the melons shipped are really fit to be eaten. Those who pull green melons for the market know that they are committing a fraud, and the business should be broken up. If melons were left on the vines to ripen properly the sales and profits would, as I verily believe, be much larger than they now are.

The Professor further says:

"The watermelon bears its fruit direct on the main vine—never on its laterals, as does the muskmelon."

From my observation the laterals appear to grow quite as many melons as the main branches.

I have seen it stated that the main branches produce male blooms and the laterals female. I will here ask the question: Will the seed from a melon of each kind mixed produce a better yield than the seed of either kind will planted alone? Will some person of experience kindly give us the desired information?

BRYAN TYSON.

Long Leaf, N. C.

### PEANUTS.

To cultivate ground peas properly the habits of the plant should be understood, says Southern Cultivator. Its flowers form above ground, and the little incipient fruit destined to become the nut is developed in the flower, as is the case with other plants. But as soon as the flower fades its stem begins to lengthen and grow downward, and finally the end, bearing the as yet embryo nut, penetrates the soil. If it fails to do this the embryo nut aborts and comes to nothing. It is important therefore that the soil under the flowering stem should be loose, so the nut bearing stem can readily penetrate it. For this reason the ground-pea does best in rather sandy soils. When the soil is not by nature loose enough it should be made so by the hoe or plow, throwing loose dirt under the branches, as these grow longer. But in so doing care should be taken not to lift the branches and bring up out of the soil fruit stems which have already penetrated it. The practice of putting dirt on top of the vines, if done near the center of the plant, where the nuts have already formed, serves the purpose of holding the branches down and enabling the fruit to penetrate the soil more readily; but if too much dirt is put on, or if it is placed upon those portions of the branches where blooms are still forming, it does harm by

smothering too many leaves and flowers. Upon the whole, it is better to get to getting loose dirt under the stems with hoe and plow, rather than securing it by placing it on top of vines. The earthing up under the ends of the branches should be continued until late in the season, or as long as nuts are likely to form. Those varieties like the Spanish, which grow more erect, are more easily dirted than the wide-spreading variety. The ground-pea crop is one which deserves more attention as a hog crop, and also for manufacture of oil. If it was cultivated more largely, and factories for the extraction of its oil established, it would add materially to the resources of the South.

### HARVESTING OATS PROPERLY.

To get the greatest possible good from the oat crop, it must be cut early. Like grass, the stalk of the oat upon maturity loses the rich juices which characterize it earlier. These juices are changed into woody fiber, which is of little value for feeding purposes. In fact, some horses cannot at all, with safety, eat such straw, writes E. L. Vincent, one of our correspondents, in American Agriculturist.

When the milk in the berry of the oat has begun to harden a little, I like to begin cutting. The cradled grain should lie in the swath for a day or two, depending upon the weather. If the sun comes out hot, not so long a time will be needed as when clouds make the day dark. I do not want the straw to become dry and brittle before putting up. When fairly well dried out I begin binding and after the day is fairly well spent I set up what has been bound during the day. The sheaves are placed in shocks of ten each, eight being ranged two and two, and the other bundles being used as caps. These bundles are spread open by taking hold of the tops of the grain and drawing it down toward the band until half the sheaf has been thus treated. One of them is placed over one end of the shock, butt upward and pointing toward the middle, and the stem is placed on the opposite end. Sometimes I put a small stone on top of the caps to hold them in case the wind should blow hard. In this condition the grain stands for a week or ten days, depending again on the weather. By this time the shocks will be ready to draw in.

Oats cut in this way are full of substance. The grain will be found fresh and nutritious, while the straw is about as good a feed as hay. Horses will do well on it and humped cattle will eat it with good appetite. If a reaper is used I would follow the same plan of curing and setting up. In case of a binder the bands should not be too close, or the grain will not dry out so fast and is likely to mold. Last year we had very stormy times while cutting oats, but I put mine up as I have described above and never had a crop come out in finer shape.

### IMPROVED FARM MACHINERY.

It has sometimes been charged that the farmers of this country spend too much money on machinery with which to operate their farms. This is doubtless true of those farmers who do not care for their machinery in the proper manner, for it is true that millions of dollars worth of farm machinery is allowed to spoil every year by leaving it to rot and rust in the open air.

The average farmer does not buy more machinery than he must have in order properly to prosecute his work. It is not good economy to use dilapidated nor antique machinery in order to save buying new and modern kinds. It even pays very often to retire some machine that is in good order and fair working condition for another that is better for doing the same work it was calculated to perform, says Farmers' Voice.

No man is extravagant when he buys a riding plow, because it saves labor for man and team and enables them to do more and better work than can be done by any walking plow ever made.

So with cultivators, the newer kinds, by being better adapted to the work, make it possible to cover more ground in a day than was possible with the ones in use a few years ago, and the work done with them is such as is productive of larger crops.

In haying and harvest time improved machinery counts for a great deal. Time is an object in gathering the hay and grain crops and any machine that saves time is a good investment at any price that will be asked for it in these

days of competition. This is especially true of making hay. Hay must be put up in perfect condition or much of its value as feed is lost. It often happens that the weather during clover haying is very catchy and clover is peculiarly sensitive to the action of water, even two or three heavy dews changing its color and reducing its value. If the crop is at all heavy it is almost impossible to get it cured and in store before it is colored from the action of dew or the top is burned by the sun so as to shatter badly when moved, before the bottom of the swath is cured sufficiently to keep.

Here is where the tedder comes in. With it the swath can be turned up as soon as the top is wilted and frequently it is possible to store in the evening clover that has been cut in the morning if the tedder is used. If the hay is raked just before it becomes brittle and then loaded with one of the improved hay loaders, but very few leaves will be lost.

So it is with all farm crops. The machinery that will cultivate them best and harvest them quickest is the cheapest.

The essence of the advantages of crop diversification is that it assures the farmer an independent living from his own acres.

### CULTURE OF GERMAN MILLET.

I wish to ask for some information about the culture and the use of German millet. I have tried to grow it for several years, but have never been successful. Also please state if it is good forage to feed to working stock. It seems to be the opinion of several of our farmers that it has a tendency to have a weakening effect on the kidneys.—J. D. W., Rutland, Ga.

Answer.—German millet should not be sown until the weather is settled warm. To do well it must be on rich land, or be highly manured. It calls for a complete fertilizer, such as well-rotted barnyard manure, or highly ammoniated phosphate with a good percentage of potash. The land should be well prepared and brought into a fine tilth by repeated plowings and harrowings. Sow about three pecks of seed per acre, harrow in lightly and then roll the land to firm the soil about the seed. It should be cut just as the heads appear and before the seed forms. The seed develops very rapidly after heads appear, and the cutting should not be delayed. Ripe millet is considered unhealthy. It is a very rich, nutritious forage; should not be fed too freely at first, and should not form an exclusive diet at any time.

### SOME SUGGESTIONS

Made by the Southern Cultivator

CATTLE.

During May pastures are generally good, but provision should be made against their probable failure later, when the weather becomes excessively hot and dry. A good supply of drilled corn forage will meet such emergencies well and cheaply. During warm weather cattle suffer much from insects. Where ticks abound the part usually infested by them should be thoroughly greased from time to time. Lard with a little kerosene added is good for this purpose; it should be well rubbed in. When "wolves" are present in the backs of cattle they may be gotten rid of by grasping the swelling firmly at its base and squeezing it hard and the grub will be forced out. Or they may be killed by rubbing in well over the swelling the mixture of grease and kerosene recommended for ticks. There is an opening at the top of the swelling through which the grub gets air, and filling this with grease suffocates the grub.

GERMAN MILLET.

When one is short of forage, no crop can supply the deficiency better than German millet, because it matures in so short a time. It is exceedingly nutritious, and can well take the place of both grain and roughness. If cut before the seeds form and fed in moderation at first, there is no danger connected with it. There seems to be some when fed after the seeds are formed. Just how these do harm is not entirely cleared up. It may be that the seeds swell after being taken into the stomach, as they are so small as to be liable to escape being chewed up. This crop calls for very rich land; it does not pay on poor land.

The low price of cotton and the high price of farm supplies is the strongest argument for a greater diversity of crops in the South.

### ONE WAY TO CO-OPERATE

We hear much of good roads, but very little improvement is noted as the years go by. One of the simplest methods of getting good roads is to have them good, and the easiest way to do this, and one which involves no expense whatever to anybody, is to use wide tires. If in every township in the country there were at once organized a "Wide Tire Wagon Association" whose membership should be composed of all its representative farmers, much of the difficulty with bad roads would be done away with; in some sections absolutely overcome.

This is an age of combination. The farmer is apt to complain, and justly, against the trust and the combine, for up to date we have seen but little good in any of them. But the principle of combination and co-operation is the right one, and if farmers everywhere would put into practice that principle they would be surprised to discover how greatly they were profiting by the change.

In no more practical way, the cost considered, may co-operation be employed than in the direction of good roads. And we suggest that the farmers get together and agree that from this day forth all wagons bought in their respective neighborhoods shall be equipped with the wide tire. What is to be gained by its use is no longer matter for speculation. Actual demonstration under many and adverse circumstances proves the broad tire to be all its most enthusiastic friends claim it to be.—Farmer's Voice.

### HORTICULTURE

#### PLANT PESTS AND SPRAYING

Important Notes From Actual Experience Boiled Down for The Progressive Farmer Readers.

In bulletin 144 of the Ithaca, N. Y., station, on the San Jose scale, some very valuable suggestions are made on sprays and spraying. The following directions are given for preparing the best of all poisonous sprays at a cost of less than 6 cents per barrel:

"To make material for 800 gallons of spraying mixture, boil two pounds of white arsenic with eight pounds of sal soda (crystals of carbonate of soda, 'washing soda,' found in every grocery and drug shop) in two gallons of water. Boil these materials in any iron pot not used for other purposes. Boil for fifteen minutes, or until the arsenic dissolves, leaving only a small muddy sediment. Put this solution into a two gallon jug and label 'Poison—stock material for spraying mixture.'"

"The spraying mixture can be prepared whenever required, and in the quantity needed at the time, by slaking two pounds of lime, adding this to forty gallons of water; pour into this a pint of the stock arsenic solution. Mix by stirring thoroughly, and the spraying mixture is ready for use. The arsenic in this mixture is equivalent to four ounces of Paris green."

In other words, the stock solution may be made by boiling together white arsenic and sal soda at the rate of one pound of the former to four of the latter. This will keep indefinitely in a closed vessel, and as it is extremely poisonous it should be carefully taken care of. In applying this stock solution, use two pounds of fresh lime for every pint of the solution. One pint is sufficient to put into a barrel of water.

The materials for this poison cost about 3½ cents a barrel, making a very cheap and effective poison. It is not only much cheaper than Paris green, but is more uniform in strength and does not require constant stirring to keep it from settling.

This station having repeatedly tried powdered Bordeaux mixture, finds it inferior to the liquid form and hence cannot recommend it. While the application of improper materials and use of right materials at improper times productive of much dissatisfaction with spraying, we are convinced that carelessness and work indifferently done are the cause of more unsatisfactory results from spraying than almost all other causes combined. Comparatively few people yet know how to spray and do it well, notwithstanding the fact that it is generally not a difficult thing to do. So the one essential to satisfactory results from spraying, as it appears to us, which needs more emphasis than any other is thoroughness in the work. The requisites for such a job of spraying are a tree or plant well pruned, a good pump, a good nozzle, abundance of spraying

material (it is not expensive), and with all a fair degree of patience on the part of those who are doing the work; then spray the tree until every leaf is moistened—until the material begins to drip from the tree.

The time of making the applications varies with the conditions of the season, but for orchard fruits, when treated against the more common insect and fungous foes, we may say in a general way, spray first, just before the fruit buds open; second, just after the blossoms fall, and third, ten days or so after the second spraying. In a dry season the third application may not be necessary, while in an excessively rainy one more than three may pay.

When to spray cannot be regulated by rule. When not to spray, at least in one particular, can be stated with emphasis. If the spraying solutions contain poisons, as they should at that season of the year, do not under any conditions spray when the trees are in bloom.

While Bordeaux mixture is not a poison it so coats the leaves that such insects as the flea beetle and the striped cucumber beetle do not like to eat them. As it is the best of all fungous remedies it is well to always mix it with the arsenite of soda and thus kill all biting insects and fungous diseases at one operation.

### THE NORTH CAROLINA EXPERIMENT FARM.

Editor Rural World:—It is no doubt true that the rules of scientific agriculture prescribed for farmers by some authorities are often too general to be of direct value. The best rule to follow is for each farmer to experiment in a practical way, that is, put the question to the soil itself and receive the answer in the shape of crops of varying proportions. What applies on one soil may not apply on another. On the other hand, we often find tracts of many thousands of acres substantially the same so far as soil and climate are concerned and the facts determined in one portion would be equally available to all farmers on that tract.

With the object of determining the best method of manuring and cultivating fruits and vegetables upon a sandy soil, the North Carolina State Horticultural Society conceived the idea in 1895 of inaugurating a thorough line of experimental work. They entered into combination with the North Carolina State Experiment Station and laid out a large number of experimental plots near the town of Southern Pines. The plan embraces trials upon eight of the most important vegetable and nine of the leading fruit crops, strawberries, blackberries, raspberries, grapes, peaches, plums, pears, apples, chestnuts, onions, sweet potatoes, cabbage, asparagus, tomatoes, snap beans, cucumbers, and Irish potatoes.

All of the fruit crops are divided into 29 plots; on each of these plots different methods of manuring are practiced. The fertilizing materials selected are those most commonly met with on the market and which furnish plant food in cheap and available forms. For example, acid phosphate is used for phosphoric acid, muriate of potash, sulphate of potash and kainit, principally for potash, and nitrate of soda for nitrogen. The value of green manuring, that is, the growing of cowpeas to furnish nitrogen, is also being investigated, as well as the value of lime. Two plots were left unfertilized for comparative purposes. The vegetable plots are manured in 18 different ways, much on the same plan as the fruit plots. This plan of experimenting comes about as near a free crop insurance as is possible at the present stage of agricultural science. Not only will the proper fertilizer for each crop be assured without possible doubt, but the varieties of each fruit and each vegetable best adapted to the soil and weather conditions will be determined. With each year's work these experiment farms will increase in value as the checking system will soon detect unprofitable methods as well as varieties. Farmers would do well to keep themselves informed as to results.—S. Peacock.

### COLONEL WM. J. BRYAN.

He is to Organize a Third Regiment of Nebraska Volunteers.

Lincoln, Neb., May 17.—Wm. J. Bryan is to organize a third regiment of Nebraska volunteers to tender their services to the President as soon as mustered. Governor Holcomb to-day issued him a commission as colonel, with the authority to proceed, and Mr. Bryan told the Associated Press correspondent to-night that he would accept the commission.