

"The Progressive Farmer is a good paper—far above the average—and possibly the best advertising medium in N. C." Printers' Ink.

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THE PROGRESSIVE FARMER.



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

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PAPERS.

Progressive Farmer, State Organ, Raleigh, N. C.
Caucasian, Raleigh, N. C.
Mercury, Raleigh, N. C.
Banner, Raleigh, N. C.
The People's Paper, Charlotte, N. C.
The Vestibule, Concord, N. C.
The Plover, Wadesboro, N. C.
Carolina Watchman, Salisbury, N. C.

Each of the above-named papers are requested to keep the list standing on the first page and add others, provided they are duly elected. Any paper failing to do so will be dropped from the list promptly. Our people can now see what papers are published in their interest.

AGRICULTURE.

Reports of experience are always desirable, for as no two persons have the same experience, an interchange is valuable, and points the way to profitable results.

The amount of natural fertilizer wasted on the average farm would, if properly saved and used, pay a fair interest on the value of the land and improvements.

Drained land will keep a thicker soil and grow better grass and more of it than that which has not been drained. Wet, heavy land makes a rank growth of grass, scant in nutritive qualities.

Nitrogen abounds where there is decayed vegetation. Keep up the green manuring. Sowing clover seed is adding capital in bank, and it begins to draw interest from the first day of deposit.

Make the farm work as light and pleasant as possible for the young folks, remembering that they cannot see it from the same point as do their elders. Routine work is tiresome to young or old in any calling.

A few hours spent in draining a low spot may allow a field to be worked sooner than it could have been undrained. This has been a good spring to notice where drains are needed, and to see the good effects of them.

There is no disinfectant and deodorizer that is as good as sunlight and air. Keep the barns and stables as light as possible during the warm months, and the stock will be much more comfortable than it would be when shut up in semi-darkness.

A missing board or a broken wire in a fence often allows stock to get into a field of growing crops and do great damage. There is never so good a time to attend to these little breaks as the hour in which they are first noticed. It is no loss of time, in the end, to make a regular inspection of gates and fences, carrying along the proper tools to make repairs as breaks are found.

WEEKLY DIGEST

Of Experiment Station Bulletins. No. 71.

FIELD CROPS.

Bulletin 30, of Minnesota Station, gives results of tests of various field crops during 1896 and several preceding years.

Of 13 varieties of white beans tested, Choice Navy gave the best yield, Choice Medium stood second, Salzer's White Wonder third and Improved Tree fourth.

Barley was tested as to yield, ability of the straw to stand up on rich land, weight per bushel of grain, and feeding and malting qualities. In yield, French Chevalier was first, Champion of Vermont second, Manshury third. In strength of straw, Chevalier and Duckbill stood first, Manshury and Success second, Bernard's third. In weight of grain per bushel, Black Hull-less stood first, Odessa and Success second, Chevalier third. Seventeen varieties were tested.

Of 120 varieties of corn tested, Cosgrove and Smut Nose stood first, Pillsbury second, LaMont and White Cap third. (Where two varieties are mentioned together they gave the same yield). Six methods were tested for producing fodder, the best results being obtained from rows 44 inches apart and stalks 2 1/2 inches apart in the row.

Of oats 203 varieties have been tested during several years. In yield, White Wonder stands first, Archangel second, White Russian third, Black Russian fourth. On very rich land producing a heavy, rank growth, Giant Side Oats is recommended, because while it yields well it has a stout straw that stands up well. It is a late oat.

Since 1888 more than 200 varieties of wheat have been tested under field conditions, and the best 8 varieties of these were grown side by side in 1896. Bolton's Blue Stem gave best yield, White Russian second, Powers and Glyndon 711 third. These are the results of selection of seed each year since 1888, by going through the field and picking out the best heads at harvest time.

It was thought best to try to breed up these varieties known to have good milling qualities rather than to seek new kinds that might give a heavy yield of poor quality. However, new varieties of cross bred wheat from the Ottawa (Canada) Station are being tested, and they outyield any of the others. If milling and baking tests, yet to be made, prove satisfactory, seed of these varieties will be sent out to the farmers of Minnesota by the Station. Indeed, the object of all these tests of grains and other crops is, to breed up the best varieties by careful selection of seed each year, and then to send them out in small quantities to the farmers of the State. In this connection an interesting experiment at the North Dakota Station is mentioned.

For a number of years, several hundred each of the smallest, largest, and hardest wheat kernels were picked out of the same lot of seed, planted in checks 1 foot each way, one kernel in a place and cultivated. The result every time was that the hardest grains gave the best yield, the smallest next, and the large ones last. These hard grains were so flinty as to have a clear, glossy, almost transparent appearance.

Of field peas, White Canada, a small, smooth, round variety, stood first, Alpha second, Crown third. The peas were planted with a drill, 4 inches deep, at the rate of 2 bushels per acre for small seed and 3 bushels for large ones.

Of root crops, the best Mangels yielded 29 tons per acre, best sugar beets 2 1/2 tons, best rutabagas 11 tons, best turnips 11 tons, best carrots 12 tons. The total cost of producing sugar beets was \$32 77 per acre, or \$2 18 per ton.

For three years experiments have been made to test the most advantageous rotation, Field peas, mangels, potatoes, flax, corn, and wheat were grown in plats side by side running north and south. The next year the same crops were grown on the same lands, the plats running east and west, so that in the squares where the last plat crossed the first year's plats, each crop followed each other crop and results were easily compared. It was found that of these crops tested, potatoes gave the best preparation for the next crop, Mangels next, corn and peas next, wheat next, and flax last. If grass and crops had been included in these tests, still more radical results would have been shown. Rotation means very little, where one kind of grain follows another. Its best results

are seen where grass, clover, grain, and roots follow each other. The advantage shown for potatoes and corn is probably due to tillage alone. The wheat and flax received no cultivation, because sown broadcast.

Experiments in Illinois, Ohio, Indiana and Michigan show that Crimson clover is not adapted to those States. The seed germinate readily, but are apt to be killed by drouth before the roots strike deep. If it gets a good start in early fall, it is apt to be killed by severe winter freezing.

At the Iowa Station winter wheat sown broadcast yielded 48 bushels per acre; sown with press drill, 41; with common drill, 26.

The type of corn aimed at by the Iowa Station for a number of years, is a bright yellow ear, long and slender, having straight rows of long, deep grains, well carried out to the tips, and a small cob. But the best yield in '96 was made by Golden Cap, a red variety; Mortgage Lifter, and Nickel Plate standing second, and Early Yellow Rose third.

In the potato experiments at the Iowa Station, a two eye piece was planted every 14 inches in rows 3 feet apart, with an Aspinwall potato planter. They were harrowed every 7 days till July 7th and laid by level. Rural New Yorker from seed obtained at a fair in Canada, yielded 754 bushels per acre, while the same variety from seed grown at the station for 7 years, yielded only 109 bushels per acre. World's Fair yielded 494 bushels, and Clark's Superb 461. Burbank 256, Early Rose 124. Much of the difference in yield of the two plantings of Rural New Yorker was doubtless due to difference in time of planting. In '95 the early plantings yielded twice as much as late plantings of the same varieties.

Alfalfa is proving a highly successful and satisfactory crop at the Iowa Station. In the oats tests at that Station Early Champion has given better results than any other variety. It gives the best yield, and it has a heavy, plump grain and a short, stout straw which does not lodge as do most varieties on the rich lands of Iowa.

LIVE STOCK AND DAIRY.

Bulletin 32, of Delaware Station gives an account of the battle of that Station against Anthrax, or Charbon, during five years past.

Every case occurring during these 5 years was traced to one of 5 centers of contagion. The belt of territory in which these centers occur is 3 miles wide and 40 miles long and passes through a well developed dairy district crossed by many tidalwater streams and containing many meadows surrounded by dykes or banks to prevent overflow from high tides. The centers of contagion are in meadows having faulty or broken dykes which permit frequent overflows from high tides. In one case the contagion was traced to sewage from a morocco leather factory, and inquiry revealed the fact that the employees of that shop whose business it was to sort and manipulate the hides occasionally contracted the disease. These disease germs undoubtedly came from hides taken from animals which died of anthrax.

Anthrax, Charbon, or choking quincy is a virulent, quickly fatal, and highly contagious disease known to low, wet lands from Vermont to the Gulf and as far west as Dakota and Texas. Mississippi, Louisiana and Texas suffered heavy losses, in the low regions last year.

The 5 years battle in Delaware has demonstrated that the disease attacks horses mules, cattle, sheep, goats, man, and some other animals, and that while it yields to proper management, the utmost promptness is necessary to prevent a rapid spread and fatal results.

The measures found to be effective are as follows: Burn the carcass of every victim; quarantine every suspected passenger; keep all diseased animals separate from others and disinfect all infected premises and vessels; vaccinate all susceptible animals. Of 19 exposed herds vaccinated, 17 escaped entirely, the other 2 losing but one cow each. Vaccinated cows were turned into the infected meadows and escaped the disease. Two vaccinations are necessary—the first with a weak virus and the second with one stronger.

A late announcement from Dr. Koch is to the effect that he has at last succeeded in making a lymph or vaccine which cures consumption in man or beast, except in advanced stages. The failure of his first lymph several years ago made him very cautious about announcing this last one; hence, he states

that it was most thoroughly tested on men as well as on rabbits and guinea pigs before making it public. His former lymph was a weakened culture of the live bacteria of tuberculosis. While it benefited many cases, its use resulted fatally in several instances, but a modified form of it called tuberculin has since become well established as a certain test of the existence of the disease, even in its very earliest stage, and as an equally certain cure for malaria. Koch says his new remedy is made from a chemical compound of dead bacteria, and he has given to the world his method of preparing it.

The Iowa Station tests milk for bacteria that produce bad flavor or foul odors as follows: A number of test tubes are prepared, sterilized, and plugged with cotton to keep out bacteria floating in the air, and as the patrons of the Station creamery bring in their milk, each lot is sampled and the samples placed in these tubes, which are numbered, and a memorandum is made. After a lapse of sufficient time for the bacteria in the milk to develop, the tubes are unsealed and tested for odors and flavors, and a record of those found is entered in the memoranda. Where objectionable odors or flavors are found, the patron who brought the milk is informed, investigation is made as to care and cleanliness there, and the proper instruction is given. It has been found that many odors and flavors attributed to weeds were really due to bacteria in the milk. Bacteria causing a bitter taste develop best in a low temperature, but warm weather is most favorable to the great majority of others.

The Illinois Station has for two years been testing the importance of coarse feed for cattle. Calves were allowed no grass, hay, or forage of any kind from birth, but were given all the milk, slop, and ground grain, oil meal, etc., that they would eat. Such calves ate heartily and enormous quantities, almost twice as much as those that were given roughness. One ate more than half a bushel of rich, concentrated ground feed daily before it was 5 months old. Yet, it always looked thin, though it was very heavy and its flesh was as hard as the muscles of a laboring man. Such calves were so eager for something bulky that it was necessary to keep them away from their bedding, from dirt, splinters, etc. At 4 months old, the joints began to swell, and they would occasionally walk with a reeling, staggering motion. Still, they always had good appetites. At this stage, one was killed, but no inflammation or other unusual condition was found in any of the organs, but there was absolutely no fat whatever. Another one declined till it could not hold its head up, when it was given hay, which it ate greedily, and 3 hours afterwards was chewing its cud for the first time in its life, had a brightened eye and a most contented expression. Another calf continued without bulky food, occasionally rallying, but finally died. All manifested the same symptoms under this treatment for the same length of time.

CRIMSON CLOVER.

One of the best farmers and fruit growers in Delaware, Mr. S. H. Derby, is not only a hard worker, but a head worker. He is called a "Crimson clover crank," and has the best reasons for proudly owning the nickname. Crimson clover is one crop that he grows every year, knowing before hand that it will pay him. He has studied the subject of enriching the soil, and made practical tests upon it, until he has come to know quite well what is best to be done, at least in his soil and climate. On one point he is very certain, that there is almost no need to buy nitrogen. There is an inexhaustible supply of it in the air, and if the right means are used, enough of it may be taken to make almost any poor soil rich. He does it with crimson clover chiefly, because that plant seems to thrive with him wonderfully well, is a great nitrogen gatherer, and does not require as much time as any other crop.

It may not be known to all readers of rural papers, that nitrogen is one of the most active agents in the stimulation of plant growth, and the most costly part of all manures. United with water it makes ammonia, and in this form it is taken up by the roots of all plants, and produces a mysterious but most powerful effect upon them. Notwithstanding the fact that there are unlimited quantities of it in the air everywhere, it is not in a form to be

stimulative to plant growth, until it is chemically combined with other substances. The clover and cow peas have the peculiar faculty of appropriating, transforming and retaining this free nitrogen of the air in such a way as to make the richest kind of plant food from it. Wherever they will flourish (and some of them do well almost everywhere), this may be done at almost no cost. Of all of them, crimson clover is the most peculiarly adapted to achieve this, and wherever it will succeed it should be grown for this purpose, if for no other.

It delights in a rather loose sandy soil, and in a climate that is neither very cold nor very hot. The seed should be sown almost universally in the late summer or early fall, as the little plants will not endure the heat of mid summer, but will dwindle and die. In the Puget Sound region it has done well when sown in the spring, the climate there being peculiarly moist and cool, but instances of successful spring seeding elsewhere are very fair. If sown before the days begin to get a little cool, on the approach of fall, the little plants will surely die, but the moist soil and cool weather of the fall and the following seem to just suit their growth. If not sown early enough for the plants to get well rooted before freezing weather, they will be heaved out of the ground and dried to death by the cold, especially where there is frequent freezing and thawing. Where snow covers the ground all winter, there is little trouble of this kind.

Experience has taught Mr. Derby and others, that some sort of protection in winter is very beneficial; although it is not always absolutely necessary. Various methods are practiced to secure this protection.

Good farm help can be had, and we should not let a few dollars stand in the way of procuring such. He can add more to a farmer's profit every month than the excess of wages over a shiftless man's hire. On the other hand, a poor hand will lose this difference quite as easily.

WOMEN ON NEW ENGLAND FARMS.

The women are the true helpmeets. Not only do they do their own work, but they are able and willing to milk the cows, and assist with the hay getting, and in other ways lend a hand out of doors in emergencies. Some of them even eke out the family income by little ventures of their own, such as raising hens and bees and gathering and marketing spruce gum, beechnuts and blueberries. There is no servant-girl problem, because there are no servants. When sickness or some other real disability necessitates female help in the household, a neighbor's daughter is called in. She is, of course, regarded and in every minutest particular treated as a member of the family; it could not be otherwise. The children are trained to bear their share of the family burden, so far as it can be done without interfering with their schooling, and the very school terms are arranged with a view to conflicting as little as possible with farm work.

When the children grow up, many of them go out into the world to seek their fortunes (that, within reasonable limits, is a law of nature), but there is nothing like an exodus of the rising generation, no approach to a depletion. Plenty of ambitious, vigorous young men stay behind to arrange themselves in life as their fathers did before them, chopping in the woods winters, and tilling the few acres they have been able to purchase with their winters' savings, summers. Furthermore, there are plenty of desirable young women happy and proud to cast their lots in with the young men and do their share of the drudgery necessary to establishing a home. Thus new farms are cleared out of the woodland and the old farms are kept up.—The May Atlantic.

Much depends in feeding pigs on giving their food at regular intervals. Then the pigs will very soon become used to this, and will not expect his food until the next regular feeding time comes. The old saying that a squealing pig loses a pound of fat every time it squeals has this much of truth in it, that the irregular times for feeding which occasions most of the squealing is the surest way to destroy digestion. This in pigs is not so strong as is often supposed. The pig is greedy by nature. Others must see to it that it does not eat more nor oftener than is good for it.

THE REASON WHY MCCORMICK CHANGED FROM THE LEFT TO THE RIGHT HAND BINDER.

It has been said that the conveniences of one age become the necessities of the next; but no ordinarily sane man will contend that the necessities of one age should become the inconveniences of the next. When binding was done by hand the left hand cut harvester was a necessity. The grain fell on the platform of the harvester and was delivered into the receiver with its heads towards the rear of the machine. The men stood in the receiver facing the grain. With the left hand machine the heads of the grain are at the left hand of the man doing the binding, so in taking out the bundle with the hand around it, whether the man turned to the front table or to the back table he kept his position toward the bundle itself—that is, with the heads towards his left hand; hence, in making the tuck he shoved the ends under the hand toward the heads. Grain is handled by the shocker by grasping into the heads, as shown in



the illustration, and the tuck should therefore be toward the heads, so that it will not puff out.

Before the time of hand binding harvesters all grain-cutting machines were made right handed, and they were changed only to keep the tuck of the band towards the heads. But this change made the machine much more unhandy for the team and driver.

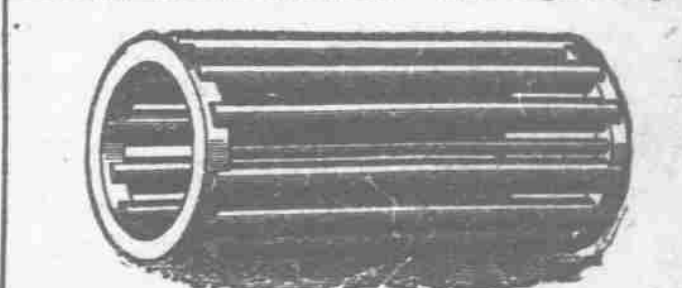
The hand binding harvester with men to do the binding is out of date, and so is the left hand machine, which has been superseded by the McCormick Right Hand Open Elevator, the success of which makes it seem highly probable that there will be no progressive manufacturer building left hand machines in three years.

For three hundred years books on mechanics have contained drawings and descriptions of roller bearings, and that roller bearings when properly used would lessen friction has been understood by mechanical experts for centuries.

The applications of roller bearings to grain cutting machinery was made by J. G. Perry in 1869, and his patent, No. 86,584, for an improved reaper, showed and described various ways of using roller and ball bearings in harvesters. In view of these facts it is somewhat amusing to read the claims of a certain reaper maker of the present day, who says he was the first to introduce roller bearings in harvesting machinery. As a matter of fact this manufacturer is comparatively a beginner in the art of reaper building and has originated nothing.

Unquestionably the most practical and satisfactory applications of roller bearings to binders and mowers has been made by the McCormick Harvesting Machine Company. The Particular form used by them was patented in 1882 and is now to be found in all McCormick machines. The especially

valuable feature of the McCormick roller bearing is seen in the form—or cage as it is called—which holds the rollers from running together, and if for any cause the cage is taken from the shaft the rollers will not fall out and get lost. In order to avoid the McCormick patent the other harvesting machine company who claims to be the originator of roller bearings in harvesters has cut out the metal in the ring at the ends of the rollers. If the cage is taken out the rollers slip out and become filled with grit, or worse, get lost.



The method of the McCormick Company result in an annual saving of many thousands of dollars to the farming public. New devices are not embodied in their machines until long and oft repeated trials have shown them to be practical. It has been the same with roller bearings as with everything else—McCormick experimenting is done at McCormick expense, and not at the expense of the farmers, who are too often duped by manufacturers who rush into print for notoriety and bull the market with impractical forms.