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Chard and Garden Notes for April.

By Roy Cady, Horticulturist, Minn. University Farm.

Some grass-seed on the bare of the lawn.

Prune the fruit trees. It is good in case for this year's crop.

Buy a few gladioli, canna and bulbs for planting early in May.

Plant cauliflower and cabbage can be set out the latter part of this month.

Prune those fruit trees and plants ordered, and the land made to set them out?

It is a good time to get the lawn mowed up and the winter's accumulation of trash out of sight.

Side up the ground around the trees and shrubs, leaving about two feet of cultivated land about each tree.

Make a thoroughly fine seed-bed for garden-seeds. Good preparation means less work during the summer and better crops.

Plant onions, beets, radish, Alaska lettuce, peppercress and onion just as soon as the land is in good condition to plant.

Plant muskmelon and watermelon may be started in berry-boxes or cones, and transplanted to the open when danger of frost is past.

Plant five pounds of pure Kentucky Blue grass, five pounds of solid Red Top grass and five pounds of White Clover per acre makes a good lawn seed-mixture.

Prune out the dead canes of raspberry and currants, if this was not done last year. Burn all trimmings at once, they are apt to contain insects.

Plant a few nut-trees or nuts that have been kept stratified over winter. Prune, black walnut and the hickory well in the southern half of the state.

Plant bulbs, such as tulips, narcissus, etc., which have been forced in the house, now be put in the garden, and bloom again later this season or next spring.

Plant a good annual vine, to cover up the wall or unsightly stumps, is the winter. Trailing nasturtiums or morning glories are also often used for the same purpose.

Prune out the dead limbs, suckers and branches that are too close to the trunk among the shrubs. Shrubs that are in the spring should not be pruned until they are through blooming.

Do not transplant some ferns to the woods to the north or east of the house? This can often be done to advantage. If put on the north or west side, the wind and sun destroy them.

Prune off all plants before setting the house or hotbed to the open. This is done by gradually reducing the amount of water, and giving more air. It causes the plant to ripen up its wood, and it is thus able to stand the change to conditions outside. Plants which have been "hardened off" have a dull green color and firm wood.

Reforming the Teachers.

Influence is No Longer to be Depopulate the Country.

Document issued by the National Association of Education sets forth the position that "rural school teachers are a positive force to depopulate country districts. The courses of the method of teaching, the moral tone and influence of the rural schools tend to drive the population to the towns." This is by no means a new discovery. But that teachers have been, and often are, such an inimical force, is due to the system to which, until recently, they were obliged to conform. If they would obtain an education fitting them for a teacher's career. Now, however, that system is gradually reformed by the action of courses directly bearing on country life; by the revision of textbooks, so that examples and cases shall be based upon agricultural affairs, and by the exaltation of rural topics as equally interesting mind-expanding with those of the counting-room and factory. Even the Bureau of Education has caught the inspiration to activity in the line of "education toward the country" and has compiled "A Course of Study for the Preparation of Rural School Teachers," for free distribution to those aspiring to the greatest heights in the country school.—C. R. Barns.

Clover as a Fertilizer.

It Enriches the Soil, while Furnishing a Valuable Feed.

Clover is one of the most valuable feeds that the farmer can grow. It is rich in protein, that muscle-building and milk-producing constituent of feeds, and can to a large extent replace mill-feeds rich in protein, such as bran, shorts and oil-meal, in the ration. Alfalfa is slightly richer in protein than red clover, but does not fit so well into a rotation, and is not so generally adapted to the various soils of Minnesota.

It will pay to grow clover as a feed; but, in addition to its feeding value, the fertilizing value of the roots and stubble of clover makes the land upon which it was grown richer in both humus and nitrogen than it was before. The fact that larger crops could be grown after clover than after grasses or other crops, was known long before the exact reason for the fact was determined. It was finally discovered, in the latter part of the 19th Century, that certain bacteria, present on the roots of clover, and evidenced by the presence of swellings or nodules, had the power of taking the free nitrogen of the air (about four-fifths by volume of the air is nitrogen), and making it available for the plant to use. Since this discovery, the growing of clover has vastly increased, until now the growing of clover or other legumes is recognized as the corner-stone of any permanent system of agriculture.

Nitrogen is one of the three most essential elements of plant-food, the most expensive, and the first to become deficient in our soils. The other two are phosphorus and potassium. Commercial fertilizers contain one or more of these three elements.

You can buy nitrogen in the form of nitrate of soda, and the nitrogen will cost you 18 cents a pound, or you can buy it as dried blood, and it will cost you about 16 cents a pound. A crop of 20 bushels of wheat, together with the straw, removes about 35 pounds of nitrogen from the soil. To replace this by means of commercial fertilizer, so as to keep up the fertility of the soil, would cost \$6.30 per acre.

Clover, if grown in rotation, once in three to five years, and when cut for hay, will leave enough nitrogen in its roots to keep up the nitrogen content of the soil, replacing all that has been removed by the other crops grown in the rotation; and, in addition, it keeps up the humus content of the soil, and furnishes the farmer with one of the most valuable feeds that can be grown. Field experiments, conducted over long periods of time at different experiment stations, prove conclusively the above statement. Bulletin 109, Minnesota Experiment Station, reports field experiments on forty-four plots, with different systems of rotation, and covering a period of ten years, in which it is shown that, on those plots where clover was grown in rotation, one in three to five years, the nitrogen content of the soil at the end of ten years was as large or larger than at the beginning of the experiment; while on those plots where clover or other legumes were not grown, the nitrogen content decreased. Where field peas were grown continuously, there was a decided increase in the nitrogen content. Where clover was seeded every year, with wheat grown continuously, the nitrogen content of the soil was maintained.

The report of the Canadian Experimental Farm for 1911 reports an interesting experiment, where clover was grown continuously for ten years on the same plot, the ground being dug over every second year and re-seeded. The hay was cut and allowed to rot on the ground. The soil was sampled and analyzed at the beginning of the experiment, and at intervals up to nine years, with the result of a remarkable increase in the nitrogen content, amounting to 472 pounds per acre, in the soil to a depth of 4 in., in 9 years, or an average of 52 pounds per year, having a yearly money value of \$9.36 or total value of \$84.96. If this clover had been fed to cattle, and the manure carefully saved and applied to the plot, nearly as large an increase in the nitrogen content of the soil would have been found.

To get the largest possible crop-yield from every acre should be the aim of every farmer. Growing clover regularly in rotation will help to this end. You cannot afford not to grow clover, if you have stock to feed it to. If you haven't stock, get it. It will pay to sow 3 to 6 pounds of clover to the acre, with grain, to plow under late in the fall. The increase in the nitrogen and humus content of the soil will more than pay for the seed.—Ralph Hoagland, Chief, Div. Agr. Chemistry and Soils, Minn. Col. of Agriculture.

Smoking Meats.

Some Suggestions as to Smoke Houses and Fuel.

Smoking meat is an old and ancient custom that has been in vogue for centuries, and has probably undergone as slight a change as any branch of the meat industry. The object of smoking meat is to preserve it for summer use, and at the same time add the flavor which is so desirable. It also makes the meat more palatable, consequently greatly improving its usefulness.

Many artificial methods of flavoring have been recommended, and materials sold on the market, but none have been discovered that are as satisfactory as smoking with a proper fuel. After the meat has been in brine for a period of six or seven weeks, it is ready to be smoked. After taking it from the brine, all pieces should be soaked in water at about 55 to 65 degrees F. Keep the meat in the water for about five or six hours. The object of this soaking is to remove all the salt from the surface; which, if left on the meat, forms a crust and is very objectionable after smoking. After soaking, allow the meat to drip before hanging in the smoke-house.

A desirable smoke-house is one built of brick or cement; but it may be built of any material. For farm use, a convenient size is one that is about 6x8 or 8x10, and about 10 feet high. Ventilation should be provided, so that the smoke may escape from the house. Some people conceive the idea that all smoke should be held in the house and not allowed to escape; but when such is the case it becomes stale and does not impart to the meat as good a flavor as when it is allowed to pass from the smoke-house after coming in contact with the meat.

In hanging the meat in the smoke-house, no two pieces should be allowed to touch, as it means uneven smoking. The meat should be hung as high as possible, so as not to be too near the fire.

The best fuel to use is hard wood, such as hickory, maple or any good hard wood, or sawdust. Soft woods should be avoided, as they give off considerable carbon, which forms an undesirable coating on the outside of the meat. In case the hard wood cannot be had, the best thing to use is good clean corn-cobs. The fire should never be more than enough to produce a continuous smudge, so as not to give off too much heat.

A light, continuous smoke should be started under the meat, and kept up for a period of from 36 to 48 hours. This is long enough to smoke meat if the fire is not allowed to die down. Meat, when properly smoked, should be of a light straw brown or amber color.—W. H. Tomhave, Extension Division, Minnesota College of Agriculture.

Plant Disease-Free Potatoes.

Farmers Should Guard against Scab and Brown Rot.

There are in Minnesota a number of potato diseases which must be dealt with at this time of the year. The reason for this is that the diseases are carried in the "seed" potatoes and in the soil. In order to produce a disease-free crop, it is therefore necessary that only disease-free potatoes be used, and that these be planted on clean soil.

The two best known potato diseases which must be dealt with in this way are the "common scab" and the "internal brown rot." It is scarcely necessary to describe scab, since every one is familiar with it. The internal rot, however, is probably not so well known. Up to the present time it does not seem to have done a very great amount of damage. However, it is probably more prevalent than is generally supposed. Various lots of stored potatoes, examined for the internal rot, showed an average of about one-fifth of the tubers in various stages of decay. It has been seen in practically all sections of the State, and precautions should be taken at this time to prevent its farther spread. It is not difficult to recognize it: it is a dry, brown rot, beginning in the stem end of the tubers. Sometimes secondary soft rots appear, thus hastening the decay of the potato.

Preventive methods are simple. To prevent scab, the "seed" potatoes should be soaked in formaldehyde solution (one pint of formaldehyde in 30 gallons of water) for two hours. They should then be planted in soil which has grown no potatoes for from three to five years. The brown rot cannot be prevented by the formaldehyde treatment. Only clean "seed" should be planted. If there is brown rot in the lot of "seed" potatoes, they should be sorted, and only those showing no symptoms of a brown or soft rot should be planted. Three years does not seem to be a long enough period for eliminating the disease from the soil; so, if brown rot has been present in a field, potatoes should not be grown on the same land for at least four or five years.—E. C. Stakman, Div. of Plant Pathology, Minn. Col. of Agriculture.

How Much Money Have You Made?

A Question Which the Farmer Should be Able to Answer.

There is one question that always comes into one's mind after the year has closed, and that is, "How much money have I?" How many times have you heard a neighbor ask his fellow-neighbor, "Well, Brown, how did you come out this year?" Brown very likely turns to his check-book or to his pocket, and tells the neighbor how much he has made. Surely this is all right, for he has paid all of his bills and he has so much money left. But the business farmer often says, "I don't see how one can farm and not know what enterprise is paying him most."

On nearly all farms there are several enterprises or "departments." Such a farm is a great deal like a department-store. No one believes that the manager of a department-store would for a minute allow a department to exist unless it paid its own expenses and a little profit. Why shouldn't the farmer use the same methods as the merchants? His business may be divided into departments; as, for instance, a department each for horses, cows, young stock, swine, poultry, grain, hay, corn, pasture, machinery, labor, household, and miscellaneous. Did you ever ask a merchant how much he made on his laces? If so, you would have noticed that the first thing he did was to turn to a book and look for the word "Balance." If that came on the debit side he knew at once what the profit was. So it should be with every farmer. Farming is a business, and should be treated as a business. Then, when Brown was asked how he came out that year, he should have been able to turn to his books and say to his neighbor, "My cows made so much money for me during the year; my grain netted me so much profit; and I can give you the other items if you so desire."

On the other hand, suppose a farmer found that he had lost money during the year. I wonder if he could tell what caused that loss. His grain enterprise may have paid well, but his cows may have "eaten their heads off," and used up all the profit from the grain, and more; so that there was a loss at the end of the year. Now, how could the farmer tell that his cows were losing? Why, by spending a few minutes each night, he might have kept a record of each cow, and would have known that such and such a cow was not paying; or, in other words, he would have known at once which enterprise was not paying him.

The actual time spent in keeping accurate records of every department on a farm is not great. The time spent in this way, on some of the largest farms, does not exceed an hour a day. If the farmer is to become a strict business man, he must know how to keep accurate records of his whole business by enterprises or departments.—Leon H. Robbins, Division of Agriculture, Minnesota College of Agriculture.

Farmers and Bankers.

How the Farmer May Get Improved Banking Facilities.

A great many bankers have recently taken an active interest—some of them a generous interest—in the improvement of agriculture in their respective communities. And it now looks as though the farmers might ere long reciprocate by taking an active interest in the improvement of banking.

For the Raiffeisen system of cooperative credit associations of "banks" for rural communities—which has proved so successful in Germany that some 15,600 such associations are now in operation in that country, lending over \$1,600,000,000 a year to the farmers—is already being discussed through the length and breadth of the United States. It occupied a portion of the time of the late Southern Commercial Congress at Nashville; and both House and Senate at Washington are calling for an investigation of this and other plans which Germany has originated for facilitating the borrowing of money by men of good character but small means.

What the Germans have done in making, through the Raiffeisen system, the "character and assets" of a co-operating body of farmers an acceptable security for loans, without resort to a mortgage, and without an interest-charge in excess of 5 per cent per annum, should apparently be equally practicable in the United States. The character of our farmers is as high as that of any body of men in the world. The "promise to pay" of one of these, backed by the whole membership of the association to which he belongs, is as good security as any in the world. Finally, the collective cash resources of our farmers are so enormous, that, used co-operatively, they can supply every probable demand for loans, and so draw to

their own coffers the interest paid by their fellows; which, at 5 per cent, is a great deal more than can be had by depositing it in existing banks. These latter would, however, profit through the greater activity of money which would be induced by the introduction of the Raiffeisen system; just as they have profited—despite their fears—through the establishment of postal savings banks.—C. R. Barns, Extension Division, Minnesota College of Agriculture.

The Wife's Uplifting.

The best thing that Agricultural education is doing for the farm is not, after all, to be seen in the increase in the yield from the land. It is in the lifting of the farmer's wife from the position of a drudge to her proper sphere as the center of the social and spiritual life of the farmstead and as the connecting link between that life and the life of the community at large. Labor-saving apparatus for kitchen and larder; improved methods in field and barn, which bring to the family a better income; the growing recognition of her right to a larger share in the spending of that income; her more frequent admission to the role, not merely of companion, but of counselor and business confidante of her husband; the touch of her refining hand in the exterior as well as in the interior arrangement and adornment of the home—all these things are operating powerfully, in connection with other oft-enumerated agencies, in making beautiful and attractive the hitherto often barren and monotonous life of the farm. And beauty and attractiveness are, after all, more efficient lures toward country living than the greater pecuniary gains which follow "the new farming."

That the betterments of which we speak are yet largely of the future; that sordid ideas still control the treatment accorded the house-mother in too many farm homes, is unfortunately true. But slowly and surely a change is being wrought. Every class of girls and boys which goes out from our Schools of Agriculture is a band of social missionaries, working for her emancipation, and for the uplift which must inevitably follow.—C. R. Barns, Extension Division, Minn. Col. of Agr.

Profit in Cow-Testing.

A Case Where Ten Cows Paid Better Than Forty-Five.

A striking example of the advantage accruing to the dairyman from the careful testing of his cows is afforded in a recently-published synopsis of the work of a single Cow-Testing Association. The profit on one herd of forty-five cows, for the limited period of the test, was \$122.21. The profit on the best ten cows included in the same herd was \$151.82. It is therefore seen that not only did the owner feed and care for thirty-five poor cows, with no return whatever, but he actually spent upon them \$29.61 of the money earned by the ten good cows. He would have been far better off had he kept only the ten.

It is to save the dairyman from such needless misapplication of his energies, and to make sure that every cow in his herd shall contribute her proportionate amount to his gross earnings, that Cow-Testing Associations have been called into existence. There are now probably 100 such associations in the United States. Each member usually pays \$1 per cow per year for the services of the expert employed to do the testing. To some, this may seem a high figure, especially as the dairyman is expected to board and lodge the expert for the day given, once a month, to the work. But that the outlay justifies itself is seen from results.

The proper selection of the herd, on the sole basis of the production of milk and butter-fat, is the foundation of successful dairying. Before the revelations of the scales and the Babcock test, all judgments based on form, breed or pedigree must be relegated to innocuous desuetude. Only by the production of milk in a sufficient amount and of sufficient richness can a cow justify her right to remain in the dairy herd. And the Testing Association is the most convenient and inexpensive instrumentality for bringing her, at proper intervals, before a tribunal which shall decide whether she shall there remain or be fitted for the shambles.—C. R. Barns, Extension Div. Minn. Col. of Agriculture.

To Editors.

The University Farm Press News is prepared with a sole view to the use of the matter in its columns by the editors of Minnesota papers. It has no subscription list, and is not sent to farmers. The endeavor is to fill its five columns with short articles relating to various phases of rural life and industry—articles which every intelligent farmer will read with satisfaction, but which we want him to read in your paper, not in ours. You are at liberty to use the articles with or without credit or name of author—has editorials or as clippings, just as you may prefer.