

EFFICIENT FARMING

Soil Management for Fall Grains.
Of outstanding importance among elements which contribute to general efficiency on the farm, which are of such vital importance in the present day epoch of agricultural development, are methods of soil management for the fall seeded grains. Discussion of the relationship between soil fertility and the quality and the yield of such crops should prove both timely and profitable.

It is well known that there is a very close relationship between the quality of wheat and rye and soil fertility. The nitrogen content of the soil, which depends upon the humus therein, governs very largely the protein content of the grain, it being higher when the wheat is raised on soils well supplied with it than when the crop is produced on soils deficient in this element of plant food. Phosphorus is also a very important factor in controlling the quality, an abundance resulting in plumpness of grain.

It is doubtless true that the rapid deterioration in quality of superior varieties of wheat and rye when disseminated over wide areas is due to soil conditions to a large extent. There is a shortage of nitrogen in many soils, and phosphorus hunger is common in many fields.

One of the conditions that account for low average wheat yield is the planting of the crop on soils that are not naturally adapted to its production. Usually it is not satisfactory to grow wheat on the lighter land, such as sands, loamy sands, and the lighter phases of sandy loams, at least unless they are in a high state of fertility. The world's best wheat lands are the well drained loams and silt loams somewhat grayish in color. It is much better to grow rye rather than wheat on the first group of soil.

The light loams, sandy loams, loamy soils and sands that do not ordinarily produce satisfactory yields of the various crops are responding to treatment. Where legumes, such as clovers, soy beans or alfalfa are not grown regularly or at rather short intervals, fertilizers which carry a high per cent. of nitrogen and phosphoric acid are giving splendid results where seedlings do not follow. A mixture carrying two per cent. phosphoric acid applied at the rate of 250 or more pounds per acre is very promising and this should be added by

means of a fertilizer attachment on the grain drill at the time of seeding. In addition seventy-five to one hundred pounds of nitrate of soda should be added early in the spring at the time growth begins. This may be spread broadcast by hand. In some instances, owing to a lumpy condition of the nitrate of soda it should be pulverized somewhat before it is spread. The reason for delaying this operation until spring is that the nitrates are removed from the soil by rainfall when the ground is not frozen. If stable manure is available the land should be top-dressed with it in the late fall, winter, or very early in spring and thus do away with the spring application of the nitrate of soda unless the soil is in a very poor condition.

On early spring seedings of clover and alfalfa on the lighter soils potash gives good results. In several instances it has saved the seedlings of these crops and in addition increased the growth appreciably over the land not provided with it. Where one is using a mixed fertilizer it appears that about six per cent. of potash should be included in the mixture at the time of seeding the fall grains. On the other hand, if one mixes the fertilizer at home, about forty per cent. of nitrate of soda, 250 pounds of acid phosphate and 50 pounds of muriate of potash should go on the land in the fall and in the spring just as growth begins at least sixty per cent. of nitrate of soda should be applied.

The heavy soils or the heavy sandy loams, silt loams and clay loams should be fertilized differently for best results. Doubtless the principal commercial plant food that they need is phosphorus, although occasionally fields that are badly run or depleted of their organic matter will respond to nitrate of soda. Where nitrate of soda was used the increase in yield of the grain did not pay for the cost of top-dressing except in a few instances. Top-dressing of wheat and rye is being practiced by many of the best farmers. The manure is usually applied during the winter as it is produced, or in the spring when ground is frozen. A light application is generally used. In addition it is becoming the practice on many farms to add 200 pounds of sixteen per cent. acid phosphate to the land at the time of seeding the fall grains.

Rural Credits in Canada

An interesting and instructive article on rural credits in Canada, by W. T. Jackman, Professor of Economics in the University of Toronto, was published recently in the International Review of Agricultural Economics. Professor Jackman was Chairman of the Commission appointed by the Ontario Government to investigate the problem of rural credits, and his special knowledge of the subject makes his article an authoritative one.

The following is a summary of Professor Jackman's article which he introduces in these words: "In the development of agriculture in Canada, a country which is predominantly agricultural, the same tendencies have been manifested as in most other countries; and as agriculture is becoming rapidly a business, involving the application of business principles and practices, it is necessary to provide for those engaged in it such facilities for borrowing as will enable them to have their credit requirements satisfied according to their needs. In all countries it is recognized that the commercial banking systems are not adapted to the special conditions of agriculture and, consequently, there have come into operation institutions for meeting these requirements for rural credit."

Manitoba.
The Rural Credits Act, 1917, with amendments, makes provision for the organization by farmers of rural credit societies through which they may obtain short term loans for productive purposes. Before commencing business the society must receive subscriptions to its capital stock from at least thirty-five persons actually engaged or agreeing to engage within one year in farming operations. Each member must subscribe for at least one share of stock and at least 10 per cent. must be paid on all stock subscriptions before the society begins business. The Provincial Government and the municipality may subscribe each for one-half as much stock as the aggregate of the individual subscribers. The board of directors of a society is composed of nine members of which the secretary-treasurer is the only one paid.

Any members desiring a loan make application to the secretary, stating the purpose of the loan and submitting a statement of his assets and liabilities. If his application is approved he is granted a line of credit for a year, and all his personal property he acquires through the proceeds of the loan is subject to a lien in favor of the society. The lender of the money has also the guarantee of the society. The rate of interest payable by the borrower must not exceed 7 per cent. per annum.

The returns received from the investment of the paid up capital of the society, together with the society's share of the interest paid by its borrowers, must be used to pay necessary expenses, after which a dividend not to exceed 6 per cent. per annum may be disbursed on the paid-up stock and the remainder transferred to a reserve fund.

Until March, 1920, the banks furnished the loans at 6 per cent., but when they decided to raise the interest to 6 1/2 per cent. the societies refused their demand. Legislation was then passed establishing the Provincial Savings Office which accepts deposits from all sources and pays 4 per cent. interest. This system was inaugurated in July, 1920, and in March, 1921, the net amount of savings was over \$2,000,000, so that its funds were expected to be sufficient to meet demands for loans.

Long-term or mortgage credit is provided in Manitoba through an Act passed in 1917 which created the Manitoba Farm Loans Association to act as the loaning agent between the Government and the farmers. The association is managed by a board of five members. The capital stock, \$1,000,000, is divided into 200,000 shares of \$5 each which can be owned only by borrowers and the Government of the province. Every borrower must subscribe and pay cash for shares to the extent of 5 per cent. of the amount of his loan, and when the loan is paid back the borrower's shares are surrendered and paid off at par. All loans made by the association must be secured by a first mortgage and must be repaid on the amortization plan. All mortgages are taken for a thirty-year period, but a loan may be paid off at any annual payment date or after the end of five years from the date of the mortgage. Loans must not be for more than \$10,000, must not exceed 50 per cent. of the value of the property mortgaged, and are made only for purposes specified in the Act. Funds for the loans were obtained by a contribution from the Provincial Treasury. In addition the Board may sell 5 per cent. bonds up to 90 per cent. of its first mortgages.

Saskatchewan.
There has been no legislation for the establishment of short-term credit in Saskatchewan. An Act passed in 1917 provides for long-term credits. It is practically similar to the Manitoba Act, the chief difference being: (1) No maximum is stated for any individual loan; (2) All the money for the board's purposes was to be provided by the Provincial Treasurer; (3) The first mortgages received by the board were to be handed over to the Provincial Treasurer as security for the loans.

Alberta.
Under the Live Stock Encouragement Act five or more farmers may form an association and apply to the Government for a loan to be used in purchasing cows and heifers, and, if desired, the joint purchase of a pure-bred bull, which must not cost more than 10 per cent. of the loan. Each member of the association may borrow up to \$500. The money is borrowed on the joint and several notes of the members, guaranteed by the Government.

Short-term credit is provided by the Co-operative Credit Act, 1917, which is very similar to the Rural Credits Act of Manitoba described above. The chief difference is that according to the Alberta Act the rate of interest to be paid by the borrower is not a fixed rate paid by all borrowers, but is decided by agreement between the society and the bank as lender.

In 1917 the Alberta Farm Loan Act, resembling the Manitoba Act except in minor details, was passed. It has not been put into operation.

British Columbia.
Under the Land Settlement and Development Act, 1917, the Land Settlement Board has been constituted. It receives advances from the Provincial Treasurer. The Board grants loans on the security of first mortgages for any purpose which will maintain or increase agriculture or pastoral production. The minimum loan is \$250 and the maximum \$10,000, and must not be more than 60 per cent. of the value of the property mortgaged. The rate of interest on loans is arranged as nearly as possible by adding not over 1 1/2 per cent. to the rate paid by the Government.

Two kinds of loans are made under this Act: long-dated loans, extending for 15, 20 or 25 years, repayable on the amortization principle, and short-dated loans, for not less than 3 or more than 10 years, repayable on such terms as the Board may think fit. A short-term loan must not exceed \$5,000 except in special cases.

The Board has also the power to accept Crown lands or to buy land from private owners and develop it for agricultural purposes. It may establish "settlement areas" in undeveloped parts of the province. Finally, the Board is to take over the functions exercised by the Agricultural Credit Commission appointed under the Agricultural Act, 1915.

Ontario.
In 1916 an Act was passed authorizing loans to settlers in the new portions of the province. The maximum amount loaned to any settler is \$500 and the rate of interest is 6 per cent. The loan is registered and constitutes a lien against the land. The Co-operative Marketing Loan Act, passed in 1920, authorizes loans to co-operative associations engaged in cleaning, storing, and marketing seed and potatoes. The loan must not exceed \$5,000 and must not be more than 50 per cent. of the value of the property on which it is made. It is to be free of interest for two years and after that 6 per cent. interest must be paid. At least 50 per cent. must be repaid within five years, and the other 50 per cent. within ten years from the date of the loan.

In 1920 the Government appointed a commission to investigate the problems of short-term and long-term credits. The report of the Commission was presented on October 15, 1920. An outline of its recommendations is given in Professor Jackman's article.

In April, 1921, the Agricultural Development Act and the Farm Loans Act were passed providing for the granting of long-term and short-term loans. The system for providing short-term loans is practically the same as that of Manitoba. The provision for long-term loans is virtually a duplication of that of the Manitoba Farm Loans System, except that (1) the Manitoba Farm Loans Association is replaced by an Agricultural Development Board of three members, (2) the Board will loan, under favorable conditions, up to 65 per cent. of the value of the land and buildings, and (3) loans shall not be made for less than three or more than twenty years. In order to secure funds, the provincial treasurer is authorized to open offices in the province to receive deposits from any persons or corporations and to pay interest on such deposits not exceeding 4 per cent.

Quebec.
The Caisses Populaires, organized under the Quebec Syndicates Act, provide assistance to farmers and others in the way of short-term and long-term loans. Each of these banks is a separate entity and operates in a restricted locality. The loanable funds of a bank are obtained by receiving the deposits of the people in that section and by the sale of its shares. The value of each share is usually \$5 and is payable in small instalments of a few cents each. The system is voluntary and members may withdraw their holdings at any time. The social importance of the system, especially in encouraging thrift, is made a paramount feature. Loans, if of small amounts, are made on the security of promissory notes, but all other loans are based on first mortgages. The larger proportion of the loans are from \$5 to \$200. Repayment is monthly. At least 10 per cent. of the net profits is annually set aside as a reserve fund. Dividends may be paid

SMOKE OLD CHUM

The Tobacco of Quality
1/2 LB. TINS
and in packages

to shareholders in proportion to the amount of fully-paid shares held.

New Brunswick.
"An Act to Encourage the Settlement of Farm Lands" was passed in 1912. Under it a board of three members is appointed to buy farms and resell them at cost to settlers, and to administer a Government fund for this purpose. A catalogue of suitable farms is kept, and the settler is helped to make a choice. If the price to be paid for the property is less than \$1,000 the purchaser must pay down 25 per cent.; if the price is over that amount he must make an initial payment of 35 per cent. The balance, with interest at 5 per cent. is paid according to agreement, but the final payment must be made within 10 years, except when the term is extended two more years by the Board.

In 1918 "An Act to Provide for the Purchase of Sheep" was passed, authorizing the Government to purchase breeding sheep and resell them to farmers in the province at cost.

Nova Scotia.
No provision has been made for short-term credits, but for mortgage credit "An Act for the Encouragement of Settlers on Farm Lands" was passed in 1912. The settler who wishes to borrow must have cash capital equal to 20 per cent. of the appraised or purchase value of the land, besides what he would require for house furnishings, stock, etc. The loan may amount to 40 per cent. of the value of the property, and in approved cases to 80 per cent. The loan may be for

as long as 30 years, with repayment on the amortization plan. The mortgagor may pay off his indebtedness at any time within the period. The rate of interest varies from 6 to 7 per cent.

The Use of Milk Products.

Milk and bread are the commonest food ingredients of life and the former is mostly so, because we begin existence with it, take it in more or less quantities at every subsequent meal, and, finally, if we die in our beds, are likely to pass out with milk having been the last element of common food that passes our lips. Therefore it is well that we should know in what way it can be most palatably and wholesomely used. The Dominion Department of Agriculture is doing its best to keep us informed in this way. Following the pamphlets "Why and How to Use Milk" and "Why and How to Use Cheese," we are told "Why and How to Use Cream," "Why and How to Use Cottage Cheese," and "How to Use Buttermilk." There are perhaps some housewives who are of the opinion that they know all about these things, but it is hard to imagine that none will be the wiser for perusing the publications which can be had free of all expense by applying to the Publications Branch of the Department at Ottawa. Each of the pamphlets and circulars contain recipes and illustrations which add to the character and clarity of the text.

Droughts evaporate many farm profits as well as moisture.

For Home and Country

Country Women Who Are Live Wires.

A member of a Norfolk County Institute writes the following breezy account of the homemakers' doings there:

"Of course, as we do not live as closely together as in town, it is rather difficult some times in bad weather to have a full attendance, especially in the winter months, but we greatly enjoy our work and play together. The much-appreciated Government delegate addressed Marburg Institute on Public Health and Health in the Home, also giving a demonstration on home nursing and first aid. We think if there is any place where this subject should be thoroughly understood it is on the farm, where we are necessarily far from a doctor and time is very valuable if the patient is in a dangerous condition. Sunstrokes and accidents are quite common occurrences on the farm, so we all enjoyed this address and each was benefited in some way.

Last summer we held two food sales in Port Dover and raised a tidy sum of money. Outside of the raising of funds, the experience tends to live up interest in work for the community. We make a voluntary contribution to an Institute Flower Fund which is turned over to the convener of the sick committee for flowers for the sick. We find that although the offering is so small from each (2c) it is in a dignified way and the flower is certainly doing cheer to those who for a time are confined to the house.

Our aim is to have as interesting an afternoon as possible at our meetings. So the executive committee try to make the program one in which many can and will take part. We have a roll call occasionally which must be answered with a recipe for cooking, cleaning, or in some other line designated.

brought forth yet. However, we mean to find them out soon through a roll call which every one must answer: "What I like to do most." In this way we can get a better idea of the resources and capabilities of our girls and women.

At three winter meetings we had demonstrations, one on a correctly set dinner table, by an ex-butler from England, now on a farm here; another on sewing; and one on antiques. The Marburg Institute territory takes in three schools, so members were detailed to visit each one of them and find out if possible in what line the Institute could be of assistance to them. One was keen for medical inspection, another wanted two or three good pictures, and the other wanted books.

There have been discussions and papers on Consolidated Schools, and as there are several school teachers among our members who advocate it, we have had some live educational meetings. We like also to see our young people—teen age and over—have a good time. In October a corn roast and watermelon feed on a farm here; and frolic of games and fun. The boys have a baseball club and put on some pretty good games, too. To this club \$30 was donated for suits and equipment. In the winter we have an oyster supper and social gatherings. A Valentine social had to be postponed and was later held as a Hard Time social.

One of our members acts as press representative and reports our doings in the local papers. The prospects for the coming year seem even brighter, as it is the intention to get some of our members, dressmakers and milliners, to give us demonstrations and pointers.

From the orchard on the farm of the president of this Institute Branch came the apples—Newtown Pippins and Spies—that won the gold medals for Ontario in the Imperial Fruit Show held in the Crystal Palace, London, England, in October-November, 1921.

A LABOR OF LOVE

I was thinking of my invalid wife when I climbed to the roof to straighten some twisted shingles. She was sitting on the porch with years of helplessness before her, but I was so happy that her life had been spared in the railway accident that the hospital bills and the knowledge that our three sons must be deprived of the college education we had promised them did not cause me the worry that I knew I should feel later.

I stood upon the roof and looked across our road, which terminated a mile beyond, and over our south meadow to a much traveled road that passed between several farms where men were busy with their spring work. I could see two children playing merrily beside one of the houses and a woman beating a carpet that swayed heavily in the May breeze. A few minutes later I descended the ladder and, sitting down in a chair beside my wife, stared in astonishment as I suddenly realized how little she could see; rising ground in the south meadow shut off the view that I had enjoyed from the roof. I had never given a thought to that rise in the ground before. Indeed, for years both of us had thought of little except to make our farm yield its increase; but now my poor wife—she would have time—

That afternoon I took the boys to the roof and from the roof to the porch; and then they too understood. Night after night when our day's work was done we would rest ourselves, as we told mother, by removing little by little the earth from the hillock that obstructed her view; and whenever we caught a smile from the patient, cheerful woman who was watching us with so much interest we forgot our aching muscles. Neighbors who called to see how we were getting on often "happened" to bring their shovels with them, and then we had a merry digging bee together. It took us almost all summer to complete the work, but when it was done the pleasure that my wife got just from watching the carriage on the "other road" repaid us many times for our labor.

To our neighbors it seemed that we had achieved a great victory over nature and the impossible. And then I began to wonder how many things really are impossible. Was a college education for our sons impossible? I may have spoken of the matter to our county representative who stopped one night when I was at work alone in the meadow. When the boys joined us a few minutes later he suggested that we show him the farm; and during the next two hours we learned from him how to renovate our young but neglected orchard, how better to prepare the soil for certain crops, and why our dairy had yielded unsatisfactory returns during the past few months.

Under his wise and constant supervision the income from our farm increased year by year; and one by one the neighbors followed in our footsteps until the entire community was lifted to a higher plane of material wealth.

Our three sons? Herbert is a successful lawyer in our capital city. John answered his mother's wish by becoming a minister; he insists that he preached his best sermon from the text, "Every mountain and hill shall be made low." Harry has returned from college to manage our farm and to bring it to an even higher state of productivity. Now that the burden is removed from my shoulders and the years have begun to deal heavily with me I spend many hours by the side of my wife, watching the life on the "other road" and meditating on the happiness and prosperity that have been ours because we heeded the vision that God gave me on that morning in May so long ago.

Red Tomato Conserve.

Peel eight tomatoes and cut the flesh into pieces. Allow three-quarters of a pound of sugar for each pound of the vegetable. Place the sugar and tomatoes in alternate layers in a preserving kettle and squeeze over them the juice of two lemons and two oranges. Let stand over night and in the morning add a spice bag containing one and one-half teaspoonsful of broken stick cinnamon, six whole cloves, a tiny bit of ginger root and the same of nutmeg. Let cook slowly until thick, and when nearly done stir in one cupful of seeded raisins and a quarter of a pound each of chopped walnuts and minced candied orange peel. Store as for marmalade.

Sheep ticks are a nuisance, but a tick of the clock means some valuable time is gone forever. It takes many of us a lifetime to learn how to live. Many others "funk" when it comes to life's final test because we tried to get through without learning.

Agassiz Segia May Echo, the great Holstein-Friesian cow owned by the Dominion Experimental Farm, at Agassiz, B.C., has produced in record of performance test over 16,000 lbs. of milk in 167 days with an average fat test around 4.5 per cent. To date she has a considerable lead in butter production over Bella Pontiac, the present world's champion, for an equal number of days.

Sheep Notes

While spring dipping of sheep is very important to give the flock, including the young lambs, a clean bill, the fall dipping is still more important and should never be omitted. If sheep raisers realized the benefits and satisfaction from dipping their sheep, no compulsory law would be needed to make them enthusiastic and persistent in the practice of dipping.

The benefits are two-fold: First, all vermin and skin troubles can be largely cured or prevented, which has a marked effect in improving the health and feeding gains of the flock; and second, the quality of the wool is improved with its growth stimulated. Shearing tests have demonstrated that well-dipped sheep will give from a pound to a pound and a half more wool per fleece than if not dipped.

Care should be taken to follow the directions which come with the dip in its preparation, and means taken to see that the whole sheep, with the exception of eyes and nostrils, gets a good application. There is really only one way to dip, and that is by submersion in a tank sufficiently deep to cover the animal standing on its feet. While for a small flock, as an emergency measure, a molasses hogs-head with a foot cut off one end may be used, the proper and economical vessel is a vat built about eight inches wide at the bottom, three and a half feet deep and flaring to twenty inches wide with one end projecting to make an incline up which the sheep may walk after submersion.

A draining platform with tight bottom, which will hold two or three sheep, should be so arranged that when the sheep is assisted out upon it the drip from its wool will run from the platform back into the tank. The dip should be made with warm water and allowed to cool to one hundred degrees F. before being used, after which it will cool rapidly.

Any time after September 1 is a good time to dip. A breezy, bright day is naturally best, but if, for any reason, dipping is delayed, further delay waiting for just the right day is inadvisable. Particularly when poison dips are used, the sheep should be kept off ground affording any pasture until their fleeces have ceased dripping, three or four hours at least being required.

It is wise to observe speed limits in farming as well as on the road. But so many farm "engines" are hitting on only one cylinder, so it is impossible to speed them up to get to Good Crops by the end of the season.

Hogs

Feeding new corn to the fattening hogs in the fall should be done with precaution. Much of the sickness and loss occurring among hogs in the autumn may be directly traced to too liberal feeding of new corn. Hogs confined to limited quarters and accustomed to a scant amount of succulent food are very likely to feed liberally upon new corn and induce acute diarrhoea or other ailments.

The feeding of new corn will not produce hog cholera, but it may make conditions favorable for the disease to start if there is any cholera in the community. Hogs unaccustomed to succulent food become ravenous and when fed liberally on new corn are very apt to overfeed. When feeding a dairy cow or horse we know just how much to feed each individual animal, but with hogs it is quite different. Some hogs are more ravenous than others and get more than their proportionate share of the ration, thereby over-feeding and causing a derangement of the digestive system.

Hogs accustomed to running on green pasture are less likely to be disturbed from feeding new corn than hogs closely confined. However, it is advisable in feeding new corn to fattening hogs to gradually accustom them to the change of feed. My practice is to begin feeding new corn as a part ration along with other dry grains and slops. I find this method keeps the digestive system in good working order. A little green corn along with the regular ration in the fall supplies additional succulency and gradually works the hogs onto a full corn ration as the crop becomes matured for fattening purposes.

It has been our experience in fattening hogs during the fall and early winter months, that better results follow the use of a portion of ground dry feed along with the corn ration. We always begin feeding new corn in early in the fall as the crop is ready but by exercising precaution we have never encountered any serious trouble.

There isn't a thing the sun shines upon but what casts a shadow. But if you will face the right way you will see the sun and not the shadow, is the suggestion of an optimist.

Acting on a request from the Japanese Consul-General to Canada, the Dominion Department of Agriculture is assembling a shipment of six high-class young Holstein-Friesian cows with excellent milk and butter records. These cattle will be shipped this month from Vancouver, B.C., to Tokyo, Japan. There has been a considerable demand from Japan lately for this class of dairy animals.