

FACTORS INFLUENCING CROP YIELDS

(Experimental Farms Notes)

Crops require moisture, heat, and food in suitable amounts and proportions to make rapid, strong growth. Nature supplies the essentials for crop life and growth, the farmer's task and problem are to utilize these resources in such a way as to ensure satisfactory yields. Investigations conducted at the Central Experimental Farm, Ottawa, have led to the conclusion that the following factors exert a telling influence towards increasing crop production.

Underdrainage.—Probably the most important and indispensable where the rainfall is great:

- (a) To carry off surplus water.
- (b) To allow air to enter the soil.
- (c) To aid in raising the soil temperature.

It is equally a necessity in soils where moisture conservation has to be considered. Drainage lowers the natural water table in the soil, leaving the soil in shape to absorb rain as it falls, that is preserved for use of crops.

On the whole, drainage improves the mechanical condition of the soil and assists in influencing the liberation of plant-food elements.

Plant-food.—In proper proportions for the different classes of crop to be grown. This involves the adoption of a good crop rotation. This rotation should be a short one, say of 3 to 4 years' duration, and the order of crops is most important. Crops such as corn, roots, potatoes, and hay require large supplies of food from the soil for stem, leaf, and root growth. This may be most easily supplied by white clover or other sod turned down, or by heavy manuring. The cereals such as wheat, oats, and barley, require less of this food, and generally do best if sown the year following an application of manure. The area sown to these cereals, if seeded down to clover and grasses, will supply a hay crop the third, or the third and fourth years, and the sod turned down, manured if necessary, fits the land for corn or roots once more.

Such general plan of rotation may be modified by each farmer as will best suit soil and needs, but some such scheme is necessary in order that humus, probably the most valuable of all soil constituents, be added and maintained in the soil, to keep it in good producing shape. Humus, decomposed and decomposing vegetable matter, is provided in applications of barnyard manure, in legume crops such as clovers, and in green manuring crops like buckwheat. Humus absorbs and holds soil moisture, and is a means of raising soil temperature, since dark soils absorb heat readily and rapidly.

Manure.—Barnyard manure is most effective fertilizer, and furnishes humus-forming material. Fresh manure gives crop yields almost equal to those from rotted manure, and when applied directly it can be handled more economically with regard to labor. Manure should be spread evenly and incorporated thoroughly with the soil. Applications should be made in moderate quantities frequently, rather than in larger quantities at longer intervals. Apply the manure for hoed and clover or other hay crops in a suitable crop rotation which provides that each field in the farm will receive regularly its fair share of manure.

Proper Cultural Methods.—To make a good seed-bed requires thoroughness in carrying out each step in its preparation.

"My wife doesn't say 'boo' when I come home at midnight." "Neither does mine, but she says about everything else in the dictionary."—*Boston Transcript.*

A Woman Advises Women

Tyneside P. O., Ont.

"I received your sample of GIN PILLS and after using them I felt so much better that I got a box of your pills and now I am taking the third box."

"The pain across my back and kidneys has almost entirely gone and I am better than I have been for years. I was a great sufferer from rheumatism but it has all left me. I strongly advise all women who suffer from pain in the back and weak kidneys to try GIN PILLS."

MRS. T. HARRIS.
GIN PILLS sell for 50 cts. a box or 6 boxes for \$2.50 at all good dealers. Sample free if you write to National Drug & Chemical Co. of Canada, Limited, Toronto; or to U. S. address, N. D. Co., Inc., 222 Main St., Buffalo, N. Y.

TRY

Gin Pills
FOR THE KIDNEYS



CULTURE METHODS FOR EASTERN CANADA

(Experimental Farms Note)

Soil management or cultivation in its several phases is a very important factor in crop production. On the Central Experimental Farm, Ottawa, and several of the branch Experimental Stations in eastern Canada, methods have been investigated for several years. The results obtained have warranted the following recommendations being made as applicable to average conditions on eastern Canada farms:

CULTURAL OPERATIONS AND IMPLEMENTS

Ploughing is the basic cultural operation. It is therefore important, and should be performed with care and judgement. No definite rule can be laid down as to the best method of ploughing. A safe rule, however, is to plough only when the soil is in shape, not too wet, especially if of a heavy clay nature. Plough deeply in autumn, as deep as the surface productive soil will allow, turning an up-standing furrow. Plough shallow in spring, turning a low-lying or flat furrow. Plough well, turn all the land, and finish with straight even furrows and lands. Let the ploughing be a credit to the farmer, a reflection of his character, a standard for other operation, and an incentive to less thorough, though willing, workers to do better.

Harrowing.—Of the several implements on the market for performing this work the disc harrow is the most suitable for preparing soil for seed after it has been ploughed. Thorough cultivation at this time is indispensable, and the disc harrow should be used until the surface of the seed-bed is smooth and friable and the soil immediately below is firm and solid.

The drag or spike-tooth harrow, too, may be employed advantageously in seed-bed preparation, especially following the disc or roller to restore a mulch or blanket of soil to check evaporation of moisture. It is also a useful implement in the corn field a few days after sowing corn and after the corn is up to stimulate a rise in temperature in the soil, to destroy small weeds and encourage germination of weed seeds, and to restore the essential mulch.

Seeding.—This operation is now done by means of seed drills. Several types are on the market, but the single disc drill is probably most popular.

Rolling.—The roller is too frequently used to put a finishing touch to the field after seeding. It may be so used to advantage on light soils, but even then should be followed by the drag harrow to break the smooth surface. The chief use of the roller, however, should be to firm and crumble the soil before seeding. It should not be used on very damp soil, especially clay, let the surface dry first, then use the roller to break the crust.

Where implements are to be purchased it should be borne in mind that larger implements requiring from three to six horses handled by one teamster provide a means of solving to some extent the present manual labor problem. Besides, the work done in this way is accomplished economically, and thus tends to keep down the cost of production of crops.

Ploughing may be speeded up by using two-furrow ploughs. Double disc harrows make a thorough seed-bed in the least time. The horse disc seed drill is efficient. More sections added to the drag harrow reduce the time required for this work.

WESTERN FEED OATS WILL NOT GROW

Plans for increased production of food grains may be thwarted in part by the unwitting use of frozen oats for seed purposes. These are not suitable for milling and are plentiful in the market at from fifteen to twenty-five cents per bushel less than oats of the established seed grade, which must be practically clean and germinate not less than eighty per cent. during the first four days under test.

Farmers should be on their guard against buying oats that are foul with wild black oats and weed seeds, and should carefully test their seed oats for germination. Plant 100 average grains of oats in a flower pot or box of soil which should be kept moist, but not wet, in a sunny window at living-room temperature, or send a sample addressed to Seed Commissioner, Ottawa, enclosing name and address.

Seed Branch inspectors have taken numerous samples of oats which are being purchased by farmers for seed purposes but which will germinate only thirty to sixty per cent. and are foul with noxious weed seeds.

Seed Branch, Ottawa.

SINN FEINER ELECTED TO COMMONS

London, April 19.—Dr. Thomas McCarty has been elected without opposition to the House of Commons for the Tullamore division of Kings County, Ireland. The vacancy was caused by the death of E. J. Grahame, independent nationalist. Dr. McCarty is a Sinn Feiner, and is at present in jail at New York.

"Did he have words with his wife?" "He had a few of them."—*Judge.*

FLINT CORN FOR GRAIN

(Experimental Farms Note)

Flint corn, as a grain crop in eastern Canada, has not received the attention that it merits. At the present crisis of food supply it is the crop that can be increased without disturbing the system of rotation or cutting down the acreage of any other cereal. We do not increase production if we cut down the acreage of one kind of grain to grow another. By growing flint corn we can increase the total output of cereals without alteration or detriment to our system of farming.

UTILIZATION

Its value lies in its feeding adaptability. As meal in a fattening ration, it is without an equal, for cattle, hogs, or poultry. In the unground or cracked state it is valuable in a ration for laying hens.

On the cob, if used judiciously, it can be profitably given to working horses.

The immature and small ears can be fed without waste in the autumn to fattening hogs.

It can be "hogged" down in the field with profit. An acre or two of corn will fatten the hogs on an average farm. This method can be adopted with profit by the Eastern farmer in these days of labor scarcity.

The dry stalks make excellent roughage for dry cows or young cattle.

Last, but not least, corn can become in Canada an important factor in the human diet. Many bushels of wheat could be released for shipment if we would use the various appetizing foods into which cornmeal can be converted.

RANGE OF PROFITABLE PRODUCTION

The crop should only be grown where it will mature in an average season. Using the proper variety, corn can be grown in practically all the older parts of Ontario, the Eastern Townships, and many countries north of the St. Lawrence in Quebec, also many districts in the Maritime Provinces. The District Representatives of Ontario, with the exception of those in the northerly counties, state that maturity is not the factor that prohibits the growing of corn, the Secretary of Agriculture for Quebec making a similar report for that province.

VARIETIES

Quebec Yellow No. 28, is the variety that will succeed best over the greater part of the area indicated. It is a short stalked variety giving a high yield of grain and maturing in the average season on well drained soils in a hundred and fifteen days. Where the season is sufficiently long, Longfellow and Salzer's North Dakota will give an equally large yield of grain with a larger tonnage of stalks. These varieties should be grown principally in southern Ontario, although they mature perfectly in certain portions of Eastern Ontario and Quebec. Earlier varieties than Quebec, Yellow No. 28 do not return a commensurate yield for labor expended.

LABOR

The work involved in growing corn for grain is but little greater than that of growing for silage; husking is the additional item, but this task can be done at the most convenient time in the autumn and made an evening of neighbourhood festivity.

WHO SHOULD GROW IT

The dairyman who disposes of his milk to the local creamery is the man who can most profitably grow and use grain corn. If he is using silage, at the present price of shelled corn he can afford to decrease his acreage of silo corn in order that he may grow flint for grinding.

The farmer wishes to increase the output of grain, yet does not wish to break his system of rotation. By growing flint corn he is producing grain from his hoed crop.

The man who is without a silo, and wishes to increase his hoed crop, can grow corn for grain purposes with profit, likewise improving the tilth and cleanliness of his fields.

SEED

Owing to the disastrous failure of the seed corn crop in the United States and Canada, seed is extremely scarce. Each farmer should consult with his representative as to a possible source of supply.

Wherever flint corn has been grown there can generally be found a few men who have developed early productive strains out of old varieties. Not having made a practice of disposing of it for seed, these men are occasionally a valuable source of local supply too often overlooked.

Any person who is desirous of growing this crop, and fails to obtain seed this season, should plan to secure it early in the autumn for another year. As long as the price of corn, mills feeds, and live stock remain as they now are, corn for grain will be one of the most profitable crops that can be grown on a farm. Any farmer so situated that he can mature flint corn will find it profitable to plant a few acres even though he has to cut down correspondingly his acreage of silo corn.

MORE CANADIANS ARRIVE IN ENGLAND

Ottawa, April 22.—It is announced through the Chief Press Censor's office that the following troops have arrived safely in England:

Infantry drafts from 1st Central Ontario; 2nd Central Ontario; British Columbia; Manitoba; Nova Scotia; Saskatchewan; Alberta.

Artillery drafts from London; Guelph; Toronto; Vancouver; Winnipeg.

R. A. P. Pilots.

R. M. C. Cadets.

Imperial recruits.

Details: A total of officers and other ranks.—3,827.

AGRICULTURAL SOCIETY FOR GRAND MANAN

We are indebted to a correspondent at Grand Harbor, Grand Manan, for the following communication:

Through the efforts of a canvass of the Island in the interest of agriculture, and a talk with those who are taking a great interest in the value of the soil, a summary of such information was given to the Department of Agriculture, with the result that M. A. McLeod, Supt. of Agricultural Society, has informed the people through L. E. Russell that the proposition is received with great favor and that he has mailed copies of the regulations for petitioning, granting and organizing such a society on the Island at an early date.

The petition asks for an enrolment of twenty-five (25) or more members, each to contribute two (2) dollars towards the maintenance of its local expenses.

If the people will take advantage of this offer at an early date the Department will send an instructor to visit us for several days and get the society on a working basis.

If such can be accomplished before the latter part of August we will be in time for the fall grants.

Within a short time the application will be before the people to sign as charter members, and we trust as many as possible will take advantage of the opportunity of helping out so good a cause.

GERMANY'S GREAT FLIER HAS BEEN KILLED

London, April 22.—Captain Baron Von Richthofen, the famous German aviator, has been killed, Reuter's correspondent at British headquarters reports. The captain was brought down in the Somme valley. His body was recovered and will be buried to-day with military honors.

Since Captain Boelke was shot down in October, 1916, Captain von Richthofen has been the most prominent and successful German aviator. On April 8 the German War Office announced that he had achieved his 78th aerial victory, although in this, as in previous citations, he was not credited explicitly with having brought down an Allied airplane.

Captain von Richthofen first came into prominence as leader of the "flying circus," a squadron of German aviators which fought in a peculiar circular formation, following each other around so that in case one was attacked the next flyer could sweep the antagonist from the rear.

Recently Emperor William conferred upon him the Order of the Red Eagle.

LOBSTER INDUSTRY

Mr. J. H. SINCLAIR (Antigonish and Guysboro):

With reference to the announcement by the Honourable Minister of Marine and Fisheries, that the Government has decided to discontinue the propagation of lobsters by hatcheries and sell the equipment, has the Government any alternative policy for the preservation of this industry? If so, what is it?

Hon. Mr. BALLANTYNE:

After exhaustive study and investigation the conclusion has been reached that the artificial propagation of lobsters by means of hatcheries has been of little or no value in the preservation of the fishery. In lieu thereof attention has been directed:—

1. To the adoption of a system of technical education for the fishermen, which will include study in the life history and habits of the lobster and the necessity

of preserving lobster life at its critical stages. Under the direction of the department original research has been conducted by Dr. Knight and others, and much valuable information has been secured. These investigations are being continued.

2. To the prohibition of the taking of immature lobsters, regulations for which have already been adopted for that portion of the Atlantic coast westward from St. George's Island, Halifax harbor, to and including the waters of the counties of Albert, Charlotte, and St. John, N. B.

3. To increased efficiency in the enforcement of the existing regulations prohibiting fishing during the close seasons and the protection of the mother lobsters. Considerable improvement has been effected in the past few years in this respect, and the better class of fishermen are co-operating with the department to overcome illegal fishing.—*Hansard*, April 11, 1918.



No Heat Waylaid

Straight walls in the deep fireplace of the Sunshine Furnace prevent ashes from collecting and absorbing the heat instead of allowing it to do its work in heating the home—one of the features that make the Sunshine the kind of furnace you want for your home.

For Sale by

R. A. GILLMAN

McClary's
Sunshine
Furnace

London St. John, N.B. Toronto Calgary Montreal Hamilton Winnipeg Edmonton Saskatoon Vancouver

We Carry in Stock

THE MOST COMPLETE LINE OF

Light and Heavy HARDWARE

Paints and Varnishes
Mill, Plumbers' and
Contractors' Supplies
in the Maritime Provinces—Some
Say in Canada.

All orders by mail or telephone will receive the same prompt attention as though you came in person. If you are a customer you know what our delivery service is; if you are not, become one and see how well we can serve you. Our prices are no higher than good quality goods ought to cost. \$ \$ \$ \$ \$

T. McAvity & Sons
LIMITED

Saint John, N. B.

Sa
Fo

In a time
economy
not getting
ment the
their food.
It is not ho
but how m
ilate, that
The addit
teaspoonf
the diet a
more th
ion and
and thus
you need

THE IMPORT
HA

Hatch early. M
your chicks out
24th of May. The
hatched up to the
rule, the heavier br
the 24th of May ar
least 90% of the p
not laying during N
ber the past winter
hatched too late.

If you are depen
flock for breeding
days before settin
fertility so that you
not setting many.
If you are using mo
do not count on mo
If you can get all
hatch, so much the
used, use some Sys
Circular No. 1. Exp
wa.) If the hens are
broody, see if you
hatching done or pu
Get in touch with g
vicinity, or write yo
tal Farm.

There is more mo
because of late hatching
often found from the

No late hatches
informed. Late hatch
rule do not pay. C
not help the Empire
eggs and save the fe

"Think this winter
see signs," said the m
timid poems on spring
seep in."—*Louisville C*

Ric



You'l

"A

Du

"Sp

bes

hav

"M

DU