

**CIHM
Microfiche
Series
(Monographs)**

**ICMH
Collection de
microfiches
(monographies)**



Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques

© 1998

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming are checked below.

- Coloured covers / Couverture de couleur
- Covers damaged / Couverture endommagée
- Covers restored and/or laminated / Couverture restaurée et/ou pelliculée
- Cover title missing / Le titre de couverture manque
- Coloured maps / Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black) / Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations / Planches et/ou illustrations en couleur
- Bound with other material / Relié avec d'autres documents
- Only edition available / Seule édition disponible
- Tight binding may cause shadows or distortion along interior margin / La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure.
- Blank leaves added during restorations may appear within the text. Whenever possible, these have been omitted from filming / Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.
- Additional comments / Commentaires supplémentaires:

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de tâtonnage sont indiqués ci-dessous.

- Coloured pages / Pages de couleur
- Pages damaged / Pages endommagées
- Pages restored and/or laminated / Pages restaurées et/ou pelliculées
- Pages discoloured, stained or foxed / Pages décolorées, tachetées ou pliquées
- Pages detached / Pages détachées
- Showthrough / Transparence
- Quality of print varies / Qualité inégale de l'impression
- Includes supplementary material / Comprend du matériel supplémentaire
- Pages wholly or partially obscured by errata slips, tissues, etc., have been refilmed to ensure the best possible image / Les pages totalement ou partiellement obscurcies par un feuillett d'errata, une pelure, etc., ont été filmées à nouveau de façon à obtenir la meilleure image possible.
- Opposing pages with varying colouration or discolourations are filmed twice to ensure the best possible image / Les pages s'opposant ayant des colorations variables ou des décolorations sont filmées deux fois afin d'obtenir la meilleure image possible.

This item is filmed at the reduction ratio checked below / Ce document est filmé au taux de réduction indiqué ci-dessous.

10x	14x	18x	22x	26x	30x
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12x	16x	20x	24x	28x	32x

**The copy filmed here has been reproduced thanks
to the generosity of:**

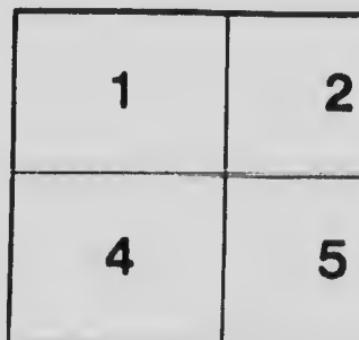
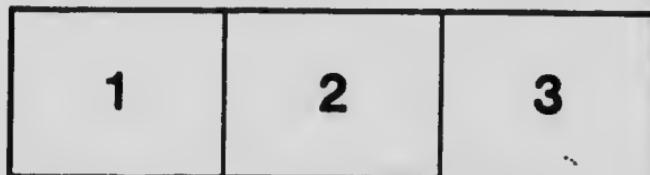
**Library
Agriculture Canada**

**The images appearing here are the best quality
possible considering the condition and legibility
of the original copy and in keeping with the
filming contract specifications.**

**Original copies in printed paper covers are filmed
beginning with the front cover and ending on
the last page with a printed or illustrated impres-
sion, or the back cover when appropriate. All
other original copies are filmed beginning on the
first page with a printed or illustrated impres-
sion, and ending on the last page with a printed
or illustrated impression.**

**The last recorded frame on each microfiche
sheet contain the symbol → (meaning "CON-
TINUED"), or the symbol ▽ (meaning "END"),
whichever applies.**

**Maps, plates, charts, etc., may be filmed at
different reduction ratios. Those too large to be
entirely included in one exposure are filmed
beginning in the upper left hand corner, left to
right and top to bottom, as many frames as
required. The following diagrams illustrate the
method:**



L'exemplaire filmé fut reproduit grâce à la générosité de:

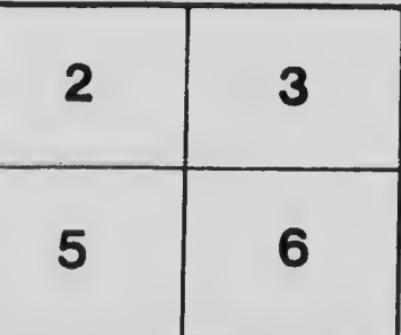
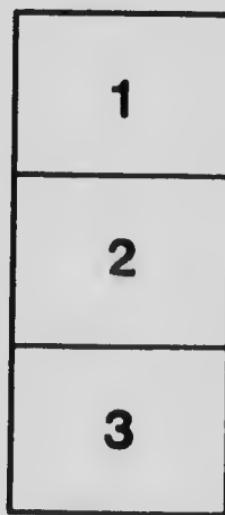
Bibliothèque
Agriculture Canada

Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

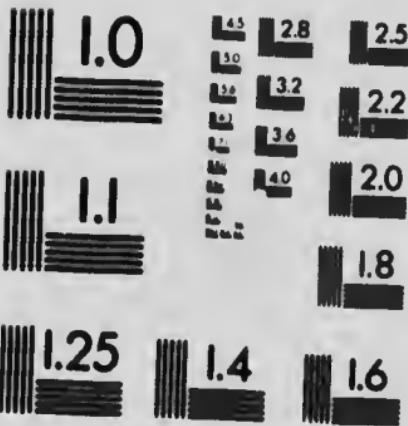
Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plié et en terminant soit par le dernière page qui comporte une empreinte d'impression ou d'illustration, soit par le second plié, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustration et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaîtront sur la dernière image de chaque microfiche, selon le cas: le symbole → signifie "À SUIVRE", le symbole ▽ signifie "FIN".

Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.



MICROCOPY RESOLUTION TEST CHART
(ANSI and ISO TEST CHART No. 2)



APPLIED IMAGE Inc

1653 East Main Street
Rochester, New York 14609 USA
(716) 482-0300 Phone
(716) 288-5988 Fax

EXHIBITION CIRCULAR NO. 9.

DOMINION OF CANADA.

DEPARTMENT OF AGRICULTURE.

EXPERIMENTAL FARMS.

J. H. GRISDALE, B. Agr.,
Director,

O. C. WHITE, B.S.A.,
Assistant Dominion Field Husbandman.

DIVISION OF FIELD HUSBANDRY.

CROP ROTATIONS

FOR

CENTRAL AND EASTERN CANADA.

BY

O. C. WHITE, B.S.A.

CROP ROTATIONS FOR CENTRAL AND EASTERN CANADA.

What is meant by rotation of crops?

It is a certain regular succession of crops so arranged that, after each, the land is left in the best possible condition to receive the crop which follows.

Why does the order in which crops follow each other make a great difference in the yields from year to year?

1. Because different plants have different manurial requirements.
2. Because plants vary in their power to abstract certain foods from the soil.
3. Because all plants do not feed to the same depth in the soil.
4. Because all plants are not alike in the residues they leave behind.
5. Because some plants tend to produce better tilth than others.
6. Because plants vary in their resistance power to bacterial and fungous diseases and to insect enemies.

What are the requirements of any rotation before it may be considered suitable?

1. It must supply the crops needed in the proper proportions.
2. It must be so constituted that weeds can be kept under control.
3. It must yield a reasonable net profit.
4. It must, under properly regulated treatment, maintain soil fertility.

Why should every farmer place his farm under some definite system of cropping, or, in other words, adopt a rotation of crops?

1. Because it will increase crop yields and net profits.
2. Because the cost of fencing, on farms where live stock is kept, would be materially reduced, since it would be necessary to fence off only three, four or five fields instead of ten or twelve as is often done.

3. Because larger machinery could be used. Where fields are fewer they must be larger, and large fields lend themselves better than small ones to the use of large machinery which lowers cost of production.

4. Because all cultural operations of one kind would be in one field, thus lowering the cost by reducing the travelling necessary from one small field to another.

5. Because every field would receive, at regular intervals, its fair proportion of manure. No field would therefore be favoured to the disadvantage of the rest of the farm, and the whole farm would always be kept up to its highest producing possibilities.

The following rotations, designed to meet the needs of the mixed farmer, are likely to prove satisfactory. Choose the one that appears most suitable to your requirements, apply it to your farm, regulate your cultural operations as called for, and observe critically the results.

ROTATION "T" (three years' duration).

First year.—Hoed crop. For corn apply manure in winter or spring, at rate of 15 tons per acre and shallow plough shortly before planting time turning under both clover and manure. For roots plough land previous autumn.

Second year.—Grain. Seed down with 10 pounds red clover, 8 pounds alsike, 6 pounds alfalfa and 6 pounds timothy per acre.

Third year.—Clover hay or pasture. Second crop of hay might be used for seed.

This rotation is well suited for intensive dairy farming where soiling crops are used. It would be a most excellent rotation to put into practice where sufficient rough land was available to serve as pasturage. It is the rotation that would supply the greatest amount of forage of the best description for dairying or beef production. It is better suited for heavy than for light soils.

ROTATION "F" (four years' duration).

First year.—Hoed crop. Apply manure at rate of 20 tons per acre previous autumn, winter or spring.

Second year.—Grain. Seed down with 10 pounds red clover and 8 to 10 pounds timothy per acre.

Third year.—Clover hay. Cut two crops if possible. Second crop might be used for seed.

Fourth year.—Timothy hay or pasture. Plough field shallow in August, top work at intervals and ridge up in autumn in preparation for hoed crop.

This rotation is most satisfactory from all standpoints, except that it supplies a rather smaller proportion of grain than is often desired. Where live stock is the mainstay of the farm this is, however, a very minor fault.

Where practically the whole farm consists of arable land under cultivation it will be found much more profitable to soil or feed cattle during summer, in part at least, rather than depend upon pasture exclusively.

Where possible to grow corn to advantage, corn ensilage will be found to be the best forage for summer feeding. Where no silo is available or where green forage is preferred, a combination of the three and four-year rotations will be found satisfactory. The four-year rotation should include about three-fourths of the arable land and the three-year rotation the other fourth.

The four-year rotation land would then provide forage for winter and spring, and pasture for spring and summer. The three-year rotation land would supply feed for summer and autumn and a small amount of pasture. A glance at the following diagram will indicate what might be the arrangement of the fields and the crops thereon in the case of a 100-acre farm where in addition to orchards, gardens, etc., about 60 acres could be brought under the plough. Fields F1, F2, F3, and F4 would be under the four-year rotation and would be cropped as indicated. Fields T1, T2, and T3 would be under the three-year rotation and would be cropped as indicated.

ROTATION "A" (five years' duration).

First year.—Hoed crop. When corn is the hoed crop used apply manure at rate of 15 tons per acre and shallow plough shortly before planting time, turning under both clover and manure. For roots plough previous autumn.

Second year.—Grain. Seed down with 8 pounds red clover, 2 pounds alsike and 8 to 10 pounds timothy per acre.

Third year.—Clover hay. Cut two crops if possible. Top dress in autumn with barnyard manure at rate of 10 tons per acre.

Fourth year.—Timothy hay or pasture. Plough field shallow in August, top work at intervals and ridge up in autumn in preparation for grain.

Fifth year.—Grain. Seed down with 10 pounds red clover per acre, which allow to grow to be turned under following spring when the hoed crop is corn.

This rotation has proven an excellent one on the Central Experimental Farm, Ottawa. When carefully followed, and when cultural operations are well performed weeds have been kept under fair control, and crop yields have been maintained. One-fifth of the land is in hoed crop, two-fifths in grain, one fifth in clover hay and one-fifth in timothy hay or pasture. It supplies a relatively larger proportion of grain to roots and hay than the ordinary three or four-course rotation, and for that reason would be preferable where considerable grain is called for.

ROTATION "B" (five years' duration).

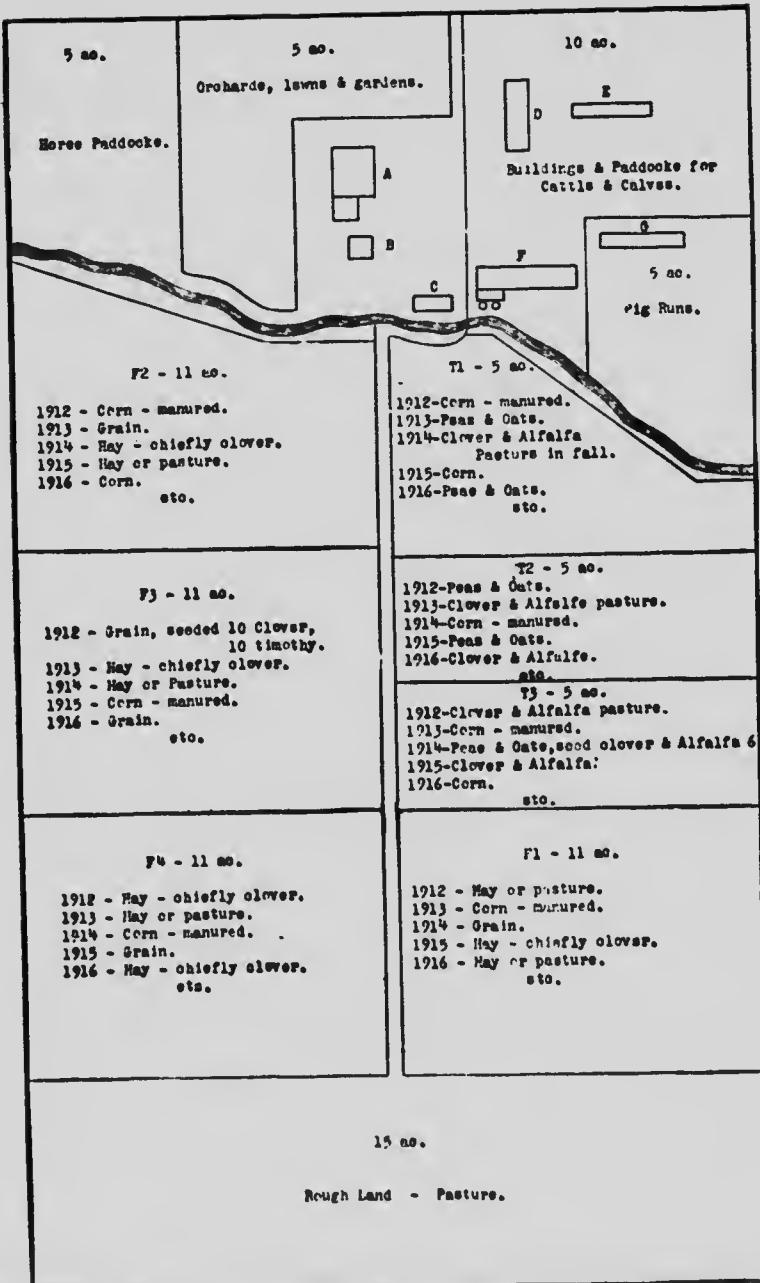
First year.—Hoed crop. When corn is the hoed crop used apply manure at rate of 15 tons per acre and shallow plough shortly before planting time turning under both clover and manure. For roots plough previous autumn.

Second year.—Grain. Seed down with 10 pounds red clover, 2 pounds alsike and 5 pounds timothy per acre. Top dress in autumn with barnyard manure at rate of 10 tons per acre.

Third year.—Clover hay. Cut two crops if possible. Second crop might be used for seed. Plough late autumn.

Fourth year.—Grain. Seed down with 10 pounds red clover, 2 pounds alsike and 5 pounds timothy per acre.

Fifth year.—Clover hay. Cut two crops if possible. Second crop might be used for seed.



Explanation of Signs on Diagram.—A.—Dwelling house. B.—Shed. C.—Poultry house. D.—Horse stable. E.—Implement shed. F.—Cow barn, feed room and silos. G.—Pig pens.

Though the arrangement is different, this rotation is very similar to "A" in the relative amounts of the different crops it supplies. In "A" both clover and timothy hay are provided whereas in "B" clover hay only is grown. "B" has maintained crop yields, and has given profits equal to "A" in the tests so far conducted, but, as indicated does not answer the purpose where a certain proportion of timothy hay is called for. It can, however, be very easily extended into a six or seven-year rotation to include timothy hay or pasture.

ROTATION "L" (six years' duration).

First year.—Hoed crop. Apply manure at rate of 12 tons per acre previous autumn, winter or spring.

Second year.—Grain. Seed down with 10 pounds red clover, 2 pounds alsike and 5 pounds timothy per acre.

Third year.—Clover hay. Cut two crops if possible. Second crop might be used for seed, or for pasture if needed. Plough late autumn.

Fourth year.—Grain. Seed down with 8 pounds red clover, 2 pounds alsike and 8 to 10 pounds timothy per acre. Top dress in autumn with barnyard manure at rate of 12 tons per acre.

Fifth year.—Clover hay. Cut two crops if possible. Second crop might be used for seed or for pasture if needed.

Sixth year.—Timothy hay or pasture. Plough field shallow in August, top work at intervals and ridge up in autumn in preparation for hoed crop.

This rotation differs from "B" in that land is left in hay for two years instead of one after seeding down with 'Fourth year.—Grain.' It is not likely to prove as profitable as the shorter ones mentioned above, but would serve very well the farmer who wished to change gradually from no particular rotation to a short one of proved merit.

ROTATION "K" (six years' duration)

First year.—Hoed crop. Apply manure previous autumn, winter or spring at rate of 24 tons per acre.

Second year.—Grain. Seed down with 8 pounds red clover, 2 pounds alsike and 10 pounds timothy per acre.

Third year.—Clover hay. Cut two crops if possible. Second crop might be used for seed.

Fourth year.—Timothy hay or pasture.

Fifth year.—Pasture.

Sixth year.—Pasture.

This rotation is left too many consecutive years in hay and must compare unfavourably with such rotations as "T," "F," "A" and "B," in respect of yield produced per acre, but might do fairly well where manual labour is abundant to preclude the adoption of a shorter and better one.

ROTATION "M" (*seven years' duration*).

First year.—Hued crop. Apply manure previous autumn, winter or spring at rate of 16 tons per acre.

Second year.—Grain. Seed down with 8 pounds red clover, 2 pounds alsike and 8 to 10 pounds timothy per acre.

Third year.—Clover hay. Cut two crops if possible. Second crop might be used for seed.

Fourth year.—Timothy hay or pasture. Plough field shallow in August, top work at intervals and ridge up late autumn in preparation for grain.

Fifth year.—Grain. Seed down with 8 pounds red clover, 2 pounds alsike and 8 to 10 pounds timothy per acre. Top dress in autumn with barnyard manure at rate of 12 tons per acre.

Sixth year.—Clover hay. Cut two crops if possible. Second crop might be used for seed.

Seventh year.—Timothy hay or pasture. Plough field shallow in August, top work at intervals and ridge up late autumn in preparation for hoed crop.



