

No. 13. Crop Rotation for Western Canada

AST month I endeavored to explain what is meant by rotation of crops, and to show why it was desirable that crop rotation should be used wherever the best results in farming are to be obtained. Let us now try to apply this more particularly to conditions in Western Canada.

For a number of years experi mental work has been conducted on the experimental farms on the prairies in trying out different rotations. These experiments have not continued long enough to give very conclusive results as vet, but nevertheless they are about the only definite work on the subject and are showing some interesting results right from the outset.

On each of the experimental farms, a strictly grain-growing rotation is used in comparison with several mixed farming rotations. The one used at Brandon is the following:

- 1st year-Wheat.
- 2nd year-Wheat.
- 3rd year-Oats.
- 4th year-Summer fallow.

This rotation represents typical grain farming in Manitoba. At the experimental farms in the drier territory in Saskatchewan and Alberta, only two crops of grain are grown in succession between summer fallows. These rotations systematize the operations on a grain farm, bring the summer fallow around to each part of the farm at regular intervals and are a great improvement over a hit-and-miss system. In fact, they are necessary for success in straight grain growing in the districts where they are used. However, they are not mixed farming and have none of the benefits which mixed farming brings.

The following rotation, used on the Brandon farm will illustrate the use of hay crops in a rotation :

- 1st year-Wheat or flax. 2nd year-Oats or barley.
- 3rd year-Summer fallow.
- 4th year-Wheat (seeded
- down)
- 5th year-Hay.
- 6th year-Pasture (manured and plowed up in midsummer)

The wheat or flax of the first year is sown on the sod land from the sixth year, which has been got into good shape by early plow-

ing and good cultivation. Oats follow after the land has been either fall or spring plowed. Then the land is summer fallowed. Following the summer fallow, a crop of wheat is grown and with it is seeded a mixture of clover and grasses. At Brandon, red clover, timothy, and Western rye grass are used for this purpose with great success. A crop of hay is cut next year and the aftermath in the fall is pastured. The next year the land is pasture until August when it is plowed up and prepared for the grain crop of year one. This rotation provides hay and pasture for live stock : by the use of clover and manure it

With it, a mixture of clover and grasses like in the previous rotation, is sown. A crop of hay, in which clover predominates, is taken off. The aftermath of the hay year is pastured, and the next year it is pastured until August. It is then manured and plowed up and got in shape for corn. Corn is sown the next spring after the land is thoroughly cultivated. The corn is frequently cultivated during the season, so that the land is as clean as a good summer fallow in the fall, and ready for the wheat of the first year which is sown the next spring.

It will be observed that this rotation eliminates the summer fal-



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keeps up the fertility and physical condition of the land; summer fallow and midsummer plowing of sod keep down the weeds; and it is giving an average yearly profit of about thirty per cent more than the straight grain growing rotat'on first quoted.

- Another type of rotation used at Brandon is the following:
 - 1st year-Wheat.

2nd year-Wheat.

- 3rd year-Oats or barley (seeded down).
- 4th year-Hay.
- "th year-Pasture.
- 6th year-Corn (manured).

The wheat of the first year is sown on the corn stubble land without plowing; the land is simply disced or harrowed. As good a crop is produced this way at Brandon as on summer fallow land. After fall plowing, a second crop of wheat is grown, and after fall or spring plowing again, a crop of oats or barley follows. low entirely. This is found to be quite practical, and no poor crops have resulted from its absence at Brandon. Of course, such would not be the case in drier localities. This rotation has all the advantages named in connection with the preceding one and, in addition, substitutes corn for summer fallow, and in that way produces a much larger quantity of fodder for live stock and cuts out the idle season of summer fallow. In actual practice this rotation gave a profit per acre at Brandon this year (1914), a hard year, of \$9.32 per acre, while the previous mentioned one gave \$5.24 per acre and first mentioned straight grain rotation gave a profit of \$4.10 per These figures are obtained acre. after allowing for interest on investment in land and machinery, labor of men and horses and all other cost. Revenues are based on average prices and not on war prices.

For drier territory than Cen Manitoba, the following rotation used at the Indian Head, Rosthern and Scott Experimental Farms worth considering:

- 1st year-Summer fallow.
- 2nd year-'Wheat.
- 3rd year-Wheat.
- 4th year-Summer fallow. 5th year-Hoed crop or gumes (manured)
- 6th year-Barley (seeded down with rye grass, red clove
- and alfalfa).

7th year-Hay. 8th year-Pasture.

This rotation should be a good mixed farming rotation for districts where the summer fallow necessary. It gives two fallow and a hoed crop in eight years which should provide for conser vation of moisture and control a weeds. It gives hay, corn or root and pasture for live stock, and y has a fair proportion of land under grain. At Indian Head in 191 (the last year of which reports a available), this rotation gave profit of \$12.94 per acre, as cop pared with \$3.84 per acre from summer fallow, wheat, oats. Rosthern the same year this ro tion gave a profit of \$7.65 acre as compared with \$3.89 fro summer fallow, wheat, oats.

For the very driest parts of the West, the following rotation under test at Lethbridge Experi mental Station illustrates what may be done:

1st year-Summer fallow. 2nd year-Wheat. 3rd year-Oats or barley 4th ye r-Summer fallowe May. Seed to alfalfa late June in rows 28in. apart.

- 5th year-Alfalfa, hay or seed
- 6th year-Alfalfa, hay or seed 7th year-Alfalfa, hay or pa
- ture.
- 8th year-Summer fallow
- 9th year-Hoed crop.
- 10th year-Wheat, manure plied on stubble.

It will be observed that great attention is paid in this rotati to giving plenty of opportun for conservation of moisture, a yet none of the essentials of go mixed farming are lost. There plenty of fodder for stock a alfalfa and manure to keep up t soil, as well a fair proportion grain crop.

The above rotation uses alfal as an important feature, and Continued on page 20

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