

## PRODUCTION

Marquis, which is equal to the Red Fife in baking qualities, ripens from five to ten days earlier and is superior in productiveness. It is now rapidly superseding the Red Fife throughout the Northwest.

**Other Experiments.**—Experiments, carried on over a series of years by the Field Husbandry Division, show the advisability of a rotation which includes a cereal crop, a hay crop (including clover) and a root crop. Experience has also shown that the shorter the rotation the greater are the profits, and that the most profitable rotation is one of three years: corn, or other hoed crop, grain, hay. In the Division of Animal Husbandry, extensive breeding experiments are in progress. It has been found that nothing in this line is more profitable to a farmer than investing in a really good pure-bred sire for the grading up of his cattle, care being taken to adhere to one breed. This is true whether as applied to horses, beef cattle, dairy cattle, sheep or swine. So far as production is concerned, the well graded-up animal has been proved to be just as profitable as the pure-bred. Important work has been done in the demonstration of effectively ventilated stables and cow barns. The Division of Horticulture carries out numerous experiments with apples, plums, cherries, grapes, small fruits and vegetables. Many varieties have in past years been tested, and promising seedlings for different latitudes have been recommended to growers. The object of the experiments with apples has been to obtain, by cross fertilization and selection, new varieties that will stand the severe winters of Quebec, of the more northern parts of Ontario and of the Prairie Provinces; also varieties of better-keeping qualities. Experiments were begun in 1915 to test the possibility of growing root and vegetable seeds in Canada instead of importing them from abroad. So far as they have gone, the experiments have proved successful and are being continued. In the Division of Botany, investigations of the diseases of cultivated plants are carried on at Ottawa and at the field laboratories of St. Catharines, Ont., Fredericton, N.B., and Charlottetown, P.E.I. Reports are made on diseased plant specimens sent in, and advice is given as to remedial measures wherever possible. Weeds are identified and methods of eradication recommended. Wild plants from all parts of Canada are received for identification, and information is furnished as to whether they are edible, medicinal or poisonous. Tests are also made as to the suitability of the climate of Canada for the growth of various plants of economic importance, such as fibre plants (flax, hemp), medicinal plants (opium-poppy, anise, etc.), oil-yielding plants (castor oil, soy bean) and miscellaneous plants (mustard, chicory, etc.). Much has been accomplished in arboriculture not only by the setting apart of 65 acres at the Central Experimental Farm for the testing of trees and shrubs from all parts of the world, but also by the encouragement given to tree-planting in the western provinces.

The Division of Chemistry covers a large field, and the Dominion Chemist, who is also Assistant Director of the Farms, controls a staff of nine fully qualified chemists. Investigations have been conducted to determine the nutritive value of fodder plants—Indian corn, grasses, clovers, etc.—by analyses at different stages of their growth. Canadian grown cereals have been analysed to ascertain their quality and nutritive