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CANADA'S WHEAT ^{1/}

The growing of wheat in Canada can be traced back approximately 340 years. A French settlement in the Maritimes is reputed to have grown wheat in 1605 and in 1616 Champlain wrote of a fine sample of wheat being cut at Quebec for shipment to France.

In the middle of the eighteenth century Canada was actually exporting wheat, shipments in 1754 amounting to 80,000 bushels. Newfoundland and the French West Indies were the principal markets in which the wheat was then sold, but in 1770 export shipments to Great Britain were made. The records of 1802 show that between April 5 and July 5 of that year some 29 vessels cleared from the port of Quebec with wheat. Of this number six sailed for Barcelona, five for Hull, three for Cork, three for "Cork and a market", two each for Halifax, Bristol and Liverpool, and one each for Greenock, Cadiz, Sunderland, Newfoundland, Jersey, Madeira and Leghorn.

Wheat in Western Canada

But it was not until later in the nineteenth century, when Western Canada went into the production of wheat, that the type known in world markets as Manitobas put on Canadian wheat the hall-mark of quality which the prairie provinces still jealously guard today. The Lord Selkirk settlers who came from Scotland to the Red River valley in 1812 first introduced wheat growing to the western provinces, and it was in the Province of Manitoba that the strong hard wheat for which Canada has become famous first made its appearance.

Failures, plagues of mice and grasshoppers, and floods in turn destroyed the crops of the early colonists and in 1868-69 wheat for seed had to be brought in from the United States. It is believed that among this wheat was the seed from which the famous Red Fife type was grown. From this wheat the late Sir Charles Saunders, Dominion Cerealists at the Government's Central Experimental Farm at Ottawa, later produced the celebrated Marquis wheat, a cross between Red Fife and Hard Red Calcutta. This is the type upon which Canada has built a world-wide reputation for quality wheat. Newer varieties have now largely replaced Marquis in the Prairie Provinces.

The first shipment of the wheat of the western plains, direct to Great Britain, was made in 1877. It was consigned by Robert Gerrie to Barclay and Brand, Scotland, and went out by Red River steamer to St. Paul, Minnesota, thence by rail to seaboard.

^{1/} NOTE: This reference paper is a revision of an article written by Mr. J. McAnsh for the Commercial Intelligence Journal. The original work was brought up to date and new sections were added by the Agricultural Statistics Division of the Dominion Bureau of Statistics.

Seven years later, with the completion of the Canadian Pacific Railway in 1884 as far west as Moose Jaw, the first shipment of Western Canada wheat to Britain by the all-Canada route was made by the late Thomas Thompson of Thompson & Sons, Brandon, Manitoba.

This shipment consisted of 1,000 bushels of Manitoba No. 1 Hard. It was sacked and shipped by rail and water to seaboard. Exactly 21 days after the movement of the wheat commenced from Brandon, it was landed on the docks at Glasgow. By this shipment the all-Canada export route was established.

So much for the beginning and early history of wheat growing in Canada. We come now to the era of rapid development, not only of the area sown to wheat, but of transportation and handling facilities which enabled Canadian wheat to spread itself around the world, and find markets in almost every corner of the globe.

Methods of Marketing

Although an organization known as the Winnipeg Grain and Produce Exchange had commenced operation in 1887, methods of handling and marketing Canadian wheat took more definite shape with the formation of the Winnipeg Grain Exchange in 1908 and the legislation which established the Canada Grain Act in 1912. The Winnipeg Grain Exchange, a voluntary association, defines one of its objectives in the constitution of 1908 as follows: "To organize, establish, and maintain an association not for pecuniary profit or gain, but for the purpose of promoting objects and measures for the advancement of trade and commerce respecting the grain trade for the general benefit of the Dominion of Canada". This organization established what is known as the "futures market" with headquarters in Winnipeg. With the exception of two periods during and immediately following World War I, trading in wheat futures on the Winnipeg Grain Exchange continued until September 27, 1943, when it was suspended as one of the measures of governmental wartime control over essential foodstuffs.

Grading System

The erection of country elevators and terminal storage warehouses developed with the expansion of the grain-growing business in Western Canada in the early part of the twentieth century. The Canada Grain Act initiated a grading system for Canadian wheat and the issuing of Government certificates as a guarantee of quality. Buyers of wheat in Europe made their purchases from countries such as Argentina, Australia and India on the basis of f.a.q. (fair average quality), while from other countries they bought on a "sample" basis; but in the case of Canadian wheat they bought on the Canadian Government "certificate final". The grain was inspected by federal grain inspectors and graded according to the terms of the Canada Grain Act, while terminal and other elevators also came under the supervision of the Board of Grain Commissioners set up to administer the Canada Grain Act. This system continues in operation today.

Research

The Grain Research Laboratory, established by the Board of Grain Commissioners, collaborates with the Inspection Department and has made a valuable contribution to the maintenance of the high quality in Canadian wheat. It conducts annual surveys of the protein content of Western Canadian wheat, and publishes informative bulletins and maps each year. It also conducts baking tests with flour milled from Canadian wheat and issues annually a report dealing with the baking quality of the Prairie wheat crop.

Quality of Canadian Wheat

The following excerpt is taken from the Alberta Wheat Pool's publication "The Story of Wheat":

"High-grade Canadian spring wheats are recognized all over the world as the strongest wheats in international commerce. Their high protein content and excellent quality are accepted abroad as characteristics of Manitobas, the international name for wheat from the Canadian prairies. The long hours of sunshine, the cool nights and the low rainfall, all so characteristic of prairie conditions, combine to produce that quality in Canadian spring wheat which makes it desirable in the bread "mixes" of Europe, and particularly of Great Britain.

"Flour made from Canadian wheat has a high water-absorbing capacity, turns out a dough of excellent handling qualities, capable of withstanding wide variations in fermentation, and producing a large, well-piled loaf of bread of good texture. The qualities which enable it to produce a loaf such as described above, and which can be imparted to weaker flours with which it may be blended, make it desirable in countries which produce and import weaker types of wheat."

Technological Improvements

Recent trends in agriculture have all been in the direction of greater mechanization of farming. The advent of war, with its attendant drain on the supply of farm labor, greatly increased the rate of mechanization. The rapid replacement of horses by power machinery has released much acreage formerly devoted to raising feed-stuffs for draft animals. This acreage is now available for the production of cash crops or feed for meat animals. Among the technological factors tending to create a permanent increase in productive capacity are the introduction of the farm tractor and combine together with the development of new grain varieties more suited to local conditions. A recent survey by the Searle Grain Company indicates that Thatcher wheat, a rust-resistant variety, now occupies 56.7 per cent of the wheat acreage of the prairies. Marquis is in second place, occupying 12.9 per cent of the acreage; Red Bobs is third, with just under 10 per cent; and many other varieties make up the balance. A new variety, Rescue, which resists the attacks of the sawfly, was recently added to the list of recommended varieties, and limited quantities of Rescue seed are now available. Another new variety, Redman, has been recommended. This wheat has excellent milling and baking qualities and will be eligible for top grades. It outyields Thatcher and Regent in Manitoba and Eastern Saskatchewan and for that reason and because of its resistance to stem and leaf rusts it should prove valuable in these areas.

In addition to the innovations in the fields of mechanization and plant breeding, new cultural methods have been evolved which assist farmers in keeping wind and water erosion to a minimum. These methods include the use of new types of cultivating machinery, strip farming techniques, trash covers, cover crops and contour ploughing.

Wheat Pools

A challenge to the marketing system established by the Winnipeg Grain Exchange came in 1923 when farmers in the Prairie Provinces began to organize co-operatives. The first of these organizations, known as the Alberta Wheat Pool, came into being in the fall of that year. This body commenced operations on October 29, 1923, with a membership of nearly 26,000 and with 2,500,000 acres of wheat under contract. In the following year similar bodies were

organized in Saskatchewan and Manitoba.

With the three wheat pools in operation in the prairie provinces, a central selling agency was established in Winnipeg in 1924 to undertake the disposition of wheat delivered by members to their respective provincial organizations. In succeeding years the wheat pool organizations handled wheat on the basis of an initial payment to the growers, which was decided upon each year, plus interim payments as the grain was disposed of on world markets. The pool organizations operated largely on the basis of direct sales to buyers abroad, preferring to by-pass the machinery of the futures market and the hedging facilities of this market. A general collapse of prices in the fall of 1929 ran the wheat pools into financial difficulties, and the provincial governments had to provide a backing which the pools have since been repaying with interest.

Price Stabilization

The drop in wheat prices continued through 1930, and the Federal Government found it necessary in November of that year to undertake stabilization operations. These were continued until 1935 when the Canadian Wheat Board Act was passed and a three-man board was established to stabilize the price of wheat by offering a fixed price to growers. This system was substituted for the former method of stabilizing through purchases on the futures market. In the meantime, the central selling agency of the wheat pools had closed down its foreign offices, and the pools' operations were confined largely to the handling of their members' grain at country elevators and the large terminals which had been erected at Fort William-Port Arthur and on the Pacific Coast.

The creation of the Wheat Board in 1935 did not interfere with futures trading on the Winnipeg Grain Exchange as had the Board of Grain Supervisors established by the Dominion Government in 1917 and the first Canadian Wheat Board established in 1919. The boards of the first World War period had been established in an effort to halt the rise in wheat prices and it was found advisable at that time to close the futures market at Winnipeg; but under the terms of the Wheat Board Act of 1935 the new Board was authorized to use regular trade channels in the course of its wheat-handling operations.

It was not until September of 1943 that it became necessary to close the futures market at Winnipeg and place full authority in the hands of the Canadian Wheat Board for the marketing of the Western Canadian wheat crop. The Federal Government at that time established a fixed initial price of \$1.25 per bushel for No. 1 Northern wheat in store Fort William-Port Arthur or Vancouver. The Canadian Wheat Board was empowered to take over all stocks of cash wheat, and futures trading was ordered closed out at the closing price ruling on the Winnipeg Grain Exchange on September 27, 1943.

Floor prices had been fixed by the Wheat Board subsequent to the 1935-36 crop year. Beginning with the year 1940 substantial profits were made by the Wheat Board and these were returned to farmers through the medium of participation payments, based on the size of their wheat deliveries. Payments amounting to 163 million dollars were authorized by the Wheat Board for the five crop years from 1940-41 to 1944-45 and practically all of this amount has now been distributed. In addition, increases in the initial payment to producers of ten cents per bushel announced on July 30, 1946 and of a further twenty cents per bushel announced on March 25, 1948 (raising the initial price to \$1.55 per bushel) were made retroactive on all wheat delivered to the Wheat Board since August 1, 1945.

Current Wheat Policy

The fixed initial price of \$1.25 for No. 1 Northern, basis Fort William-Port Arthur or Vancouver, remained in effect until July 31, 1946. A few days earlier, on July 25, the Minister of Trade and Commerce announced that a four-year wheat agreement between Canada and the United Kingdom had been signed. Since Canada's current wheat policy has been developed on the basis of this agreement it may be well to summarize briefly its main provisions.

Under the four-year wheat agreement Canada will sell to the United Kingdom a total amount of 600 million bushels of wheat. During each of the first two years 160 million bushels will be provided at a fixed price of \$1.55 per bushel, basis in store Fort William-Port Arthur, Vancouver or Churchill. The United Kingdom during each of the last two years of the agreement will accept 140 million bushels of wheat at a price not less than \$1.25 per bushel in 1948-49 and not less than \$1.00 per bushel in 1949-50, basis in store Fort William-Port Arthur, Vancouver or Churchill. The actual prices to be paid during the 1948-49 and 1949-50 seasons will be negotiated and settled not later than the December 31 immediately preceding the crop year for which it is effective. In the event of the United Kingdom requiring from Canada any additional quantities of wheat that the Canadian Government is prepared to make available, such additional quantities will in all respects be subject to the provisions of the agreement. The contract provides that the agreement will be subject to any modification necessary to make it conform with any international agreements to which both countries later become parties.

On July 30, 1946 the Minister announced a new wheat policy with respect to western producers and domestic and export prices. As Canada's current wheat policy is concisely set out in the Minister's announcement, his statement is quoted in full:

"The United Kingdom-Canada wheat contract, signed on July 24, 1946, and announced to the House on July 25, is an important element in the new policy for western wheat producers that I now wish to describe. The contract establishes a market for a considerable proportion of the next four western wheat crops, with underlying price guarantees. This factor, along with the continued shortage of food-stuffs and the high prices of competing wheats, makes it possible to deal more generously with the wheat producer than I indicated in this House in March 20, 1946. At that time I announced the continuation of the initial price at \$1.25 per bushel, basis No. 1 Northern in store Fort William-Port Arthur or Vancouver, for the 1946-47 crop year.

"The new policy is based upon an initial price of \$1.35 per bushel basis No. 1 Northern in store Fort William-Port Arthur or Vancouver, applicable to all the wheat delivered to the Canadian Wheat Board in the five-year period from and including August 1, 1945 and July 31, 1950. The 1945-46 deliveries, based on an initial price of \$1.25, will be brought up to a \$1.35 basis by payment of a flat ten cents per bushel on all grades.

"As the House has been informed, the payment of about 12 cents per bushel as participation on the 1943 crop is now under way. This participation payment will be followed by one on the 1944 crop, the sale of which has progressed to a point where I am safe in saying that the participation payment will be upwards of 16 cents per bushel. After the ten cent payment on the 1945 crop has been made -- to bring the initial payment up to \$1.35 -- the plan is to place the remaining surplus from that crop in a five-year pool with the succeeding four crops of 1946, 1947, 1948 and 1949. Participation certificates will be issued in the usual way, but the payment on these certificates will not be made until after the conclusion of the five-year pool at July 31, 1950. In other words, the deliveries of all five years will be bulked in one pool, with the same initial price of \$1.35 ruling

throughout the period and the surplus resulting from the marketing of these crops will constitute the participation payments.

"In connection with deliveries, there was, of course, no restriction on 1945-46 deliveries and it is the intention of the government to instruct the Canadian Wheat Board to accept all the wheat that producers wish to deliver in 1946-47. The best information we can get indicates a continued over-all world shortage of wheat and wheat flour in the coming crop year. Deliveries in the last three years of the pool will depend upon conditions of production and of markets. It will be provided in the new orders that the deliverable quantities will be determined by the Governor in Council before each new crop year but in any event the deliverable quantity shall not be less than 14 bushels per authorized acre. The latter provision should safeguard wheat producers against an extreme reduction in deliverable amounts, should available markets be smaller than we expect.

"I should also mention the provisions for domestic and export prices. In the interests of general price control that benefits the wheat producers along with other Canadians, the domestic price of wheat will be continued at \$1.25 with the Government assuming carrying costs on the amounts of wheat used domestically. The Government will continue to pay a drawback to millers covering the difference between 77 3/8 cents and 125 cents per bushel on wheat used in Canada for human consumption. This is, of course, not a direct charge against the producer.

"With regard to export prices, the supplies for the United Kingdom will obviously be sold within the terms of the contract. In sales to non-contract countries a serious effort will be made to sell at prices roughly corresponding to those of the other principal supplier -- now the United States. To this end, Order in Council P.C. 6122 of September 19, 1945 has been revoked. It will be remembered that through this order the Government directed the Canadian Wheat Board for the time being not to exceed sales price of \$1.55 per bushel for No. 1 Northern in store Fort William-Port Arthur or Vancouver in its export sales.

"It will be apparent from what I have just said and from the terms of the United Kingdom-Canada wheat contract that the Government considers it wise and advisable to continue the Canadian Wheat Board as the sole purchaser of western Canadian wheat from the producers. The Government believes that the great majority of western producers are satisfied for the present at least with this method of marketing. The present powers of the Canadian Wheat Board will be extended under the National Emergency Transitional Powers Act for the duration of this statute. When it expires, the Government will direct its attention to the form and authority under which the Board's powers may be further continued.

"Other powers of the Board, such as delivery quotas, will continue to be employed as in the past. For 1946-47, however, the quotas will not be finally restrictive but employed for the purpose of fairly dividing elevator space and railway cars among all the producers.

"The representations that have been made to the government by spokesmen for the organized producers of western Canada stress their great desire for stability so far as it can be attained by government action during the post-war years. I think it can be fairly said that the policy I have outlined helps the producers materially toward that objective. There is no question that the wheat producers have made possible the success of domestic price control by immediate sacrifices in their 1945-46 and current export prices. These sacrifices have also assisted in overseas rehabilitation. The Government is convinced that the outlined policy will give fair and comparatively stable returns to the producers so far as it is within the power of the

Government".

While the foregoing statement outlines the basis of current Canadian wheat policy, there have been subsequent revisions of prices in keeping with changing economic conditions. On February 17, 1947 it was announced that the Government had directed the Canadian Wheat Board to advance the domestic price of wheat to \$1.55 per bushel plus carrying charges of 3½ cents per bushel. This placed the domestic price on the same basis as that provided in the United Kingdom contract, the increase being in accordance with the Government's policy of progressively reducing price controls in Canada. Subsidies to millers were increased to take care of the price advances so that ceiling prices in force at that time might be maintained on flour, bread, millfeeds and other wheat products. Effective September 15, 1947 price ceilings on bread and flour were suspended by the Wartime Prices and Trade Board. On the same date the Canadian Wheat Board discontinued the payment of the drawback on flour and wheat products milled or processed from wheat of western Canada grain grades.

On March 25, 1948, the Rt.Hon. C.D. Howe, Minister of Trade and Commerce, announced an increase of 20 cents per bushel, effective April 1, in the initial payment made to farmers by the Canadian Wheat Board. The increase was retroactive on all wheat delivered by farmers to the Board since August 1, 1945 and brought the initial payment up to the level at which Canada was selling wheat to the United Kingdom in the second year of the four-year Anglo-Canadian Wheat Agreement. The Minister also announced the price would advance to \$2.00 per bushel in the third year of the agreement, beginning August 1, 1948. The price for the fourth year is still to be announced. Funds to cover the retroactive increase in the price to producers were obtained out of profits made by the Wheat Board on its sales during the past three crop years.

Acreage Expansion

It was during the first World War that acreage and production of wheat in Canada expanded most rapidly, particularly in the three prairie provinces. The wheat acreage in 1914 in Canada was just over 10,000,000 acres but in 1919 it exceeded 19,000,000 acres. The production in Canada of 393,000,000 bushels in 1915 saw the prairie provinces achieve an average yield of 26 bushels of wheat to the acre a record which still stands.

Acreage continued to expand in the period between the two World Wars and reached the highest point on record in 1940 when 28,726,000 acres were seeded to wheat in Canada and all but 1,000,000 acres of this in the three prairie provinces. The following table shows the trend of wheat acreage during the forty years from 1908 to 1947.

Acres and Production of Wheat, 1908-1947

	Acres		Bushels	
	Total for Canada	Prairie Provinces	Total for Canada	Prairie Provinces
1908	6,610,000	5,624,000	112,434,000	91,853,000
1909	7,750,000	6,878,000	166,744,000	147,482,000
1910	8,865,000	7,867,000	132,078,000	110,167,000
1911	11,096,000	9,990,000	231,237,000	208,697,000
1912	10,997,000	10,011,000	224,159,000	204,280,000
1913	11,015,000	10,036,000	231,717,000	209,262,000
1914	10,294,000	9,335,000	161,280,000	140,958,000
1915	15,109,000	13,868,000	393,543,000	360,187,000
1916	15,370,000	14,363,000	262,781,000	242,314,000
1917	14,756,000	13,619,000	233,743,000	211,953,000
1918	17,354,000	16,125,000	189,075,000	164,436,000
1919	19,126,000	17,750,000	193,260,000	165,544,000
1920	18,232,000	16,841,000	263,189,000	234,138,000
1921	23,261,000	22,181,000	300,858,000	280,098,000
1922	22,423,000	21,223,000	399,786,000	375,194,000
1923	21,886,000	20,880,000	474,199,000	452,260,000
1924	22,056,000	21,066,000	262,097,000	235,694,000
1925	20,790,000	19,760,000	395,475,000	367,058,000
1926	22,896,000	21,805,000	407,136,000	380,765,000
1927	22,460,000	21,426,000	479,665,000	454,559,000
1928	24,119,000	23,159,000	566,726,000	544,598,000
1929	25,255,000	24,297,000	304,520,000	281,664,000
1930	24,898,000	23,960,000	420,672,000	397,300,000
1931	26,355,000	25,586,000	321,325,000	301,181,000
1932	27,182,000	26,395,000	443,061,000	422,947,000
1933	25,991,000	25,177,000	281,892,000	263,004,000
1934	23,985,000	23,296,000	275,849,000	263,800,000
1935	24,116,000	23,293,000	281,935,000	264,096,000
1936	25,605,000	24,838,000	219,218,000	202,000,000
1937	25,570,000	24,599,000	180,210,000	156,800,000
1938	25,930,000	24,946,000	360,010,000	336,000,000
1939	26,756,000	25,813,000	520,623,000	494,000,000
1940	28,726,000	27,750,000	540,190,000	513,800,000
1941	21,882,000	21,140,000	314,825,000	296,000,000
1942	21,586,000	20,653,000	556,684,000	529,000,000
1943	16,850,000	16,091,000	284,460,000	267,800,000
1944	23,284,000	22,444,000	416,635,000	391,700,000
1945	23,414,000	22,566,000	318,512,000	294,600,000
1946	24,453,000	23,731,000	413,725,000	393,000,000
1947 ^x	24,260,000	23,357,000	340,758,000	319,000,000

^x Third estimate of production.

Wheat Trade Between Wars

International trade in wheat witnessed its greatest expansion during the ten years after World War I. Net world exports of wheat and wheat flour in the five years 1909-14 had averaged 686,000,000 bushels annually, but in the five years 1922-27 this annual average rose to 777,000,000 bushels and during the crop year 1928-29 the all-time record of 946,000,000 bushels was reached. These figures are taken from a statistical record compiled by the Wheat Advisory Committee in London, England.

Canada's share of the world market rose steadily during this post-war period and about 43 per cent, or 408,000,000 bushels, of the record total shipped in the crop year 1928-29 consisted of Canadian wheat and wheat flour. Europe had not yet recovered from the devastation of the 1914-1918 war and the wheat surplus-producing countries

of the world enjoyed a very liberal trade in foodstuffs.

Contraction of the Market

Nationalistic policies began to emerge in the late twenties however and, when the depression era arrived in 1929-30 and reached its depth in 1932-33, there existed in many European countries tariffs and other obstacles to trade in wheat, while national policies were mostly in the direction of subsidizing wheat production at home. This resulted in contraction of the market for Canadian and other wheat from overseas and, in 1935-36, the total net exports of wheat and flour in the international market shrank to 525,000,000 bushels.

Trade began to pick up again in 1938-39 when fears of a second European war were developing and a number of countries began to lay in reserve stocks. Net exports of wheat and flour in that year totalled about 643,000,000 bushels and held close to that level in 1939-40, the first year of World War II. Thereafter, with most of Europe occupied by the Nazis, international trade dwindled rapidly and was estimated at only 360,000,000 bushels in the crop year 1942-43, of which Canada furnished 215,000,000 bushels or about 60 per cent.

Wheat Surpluses and the International Wheat Council

A period of severe drought in North America in the early thirties brought about changes in the sources of wheat supplies. The United States changed from a heavy exporter of wheat to a net importer for several years, but Australia and Argentina, and for a short period Russia, became strong competitors of Canada in the world market. The United States returned as an exporter of wheat in volume in the two years preceding the outbreak of the second World War and in that period all four of the major exporting countries found themselves with growing surpluses, despite the fact that Canada had practically cleaned out all her surplus wheat by the middle of 1938, following a crop failure in 1937.

The increasing wheat surplus, produced by shrinking world trade and continuance of heavy production in the major exporting countries, had created an international problem which led to discussions on an International Wheat Agreement in London, England, during the first eight months of 1939. These discussions were halted by the outbreak of war on September 1, but a resumption of wheat agreement talks was effected in Washington in 1941 between the representatives of the four major wheat exporting countries and representatives of the United Kingdom Government. These talks culminated in the signing of a Memorandum of Agreement on June 27, 1942, which was approved by the Governments of Argentina, Australia, Canada, the United Kingdom, and the United States, effective on that date. On March 18, 1947 the International Wheat Conference convened in London, England, but broke up on April 25 without endorsing the proposed five-year draft agreement. It was agreed, however, that further discussions would be held by the International Wheat Council in Washington and the forty countries represented in London were asked to participate. The Washington conference was held early in 1948 and on March 6 it was announced that agreement had been reached by the representatives of 36 countries on the terms of an international wheat agreement.

The International Wheat Agreement

The agreement is in the nature of a multilateral bulk contract and, if ratified by the legislative bodies of the signatories, is to be in operation for a period of five crop years, commencing August 1, 1948. Canada, the United States and Australia, the three exporting countries party to the agreement, collectively undertake to sell 500 million bushels of wheat to the 33 importing countries, if required by those countries, at the ceiling price of \$2.00 per bushel, basis No. 1 Manitoba wheat in store Fort William-Port Arthur. Equivalent prices are to be

fixed on wheat in other locations and in other countries. Canada's share of the 500 million bushels is 230 million bushels, representing her normal exportable surplus. The importing countries collectively undertake to purchase 500 million bushels each crop year from the three exporting countries, if the latter desire a market for that quantity at the floor prices provided in the agreement. The floor price for the 1948-49 crop year is \$1.50 per bushel, decreasing thereafter by 10 cents per bushel for each crop year. Provision is made for the negotiation of narrower price ranges in the third, fourth and fifth years of the agreement if mutually acceptable to the exporting and importing countries. In the absence of such negotiations, floor and ceiling prices as stated above will prevail. The agreement further specifies the actual quantities which each of the importing countries undertake to purchase at the floor prices and has the right to buy at the ceiling.

Although the representatives of all 36 countries have signed the agreement, at the time of writing (June 23, 1948) the United States government has not as yet ratified it. In this connection, the Rt. Hon. C.D. Howe, Minister of Trade and Commerce, in replying to a question in the House of Commons on June 18, 1948 stated: "It will be the intention of the Canadian government to proceed with ratification of the agreement, but obviously, if the United States, one of the three producing countries, fails to ratify, it is unlikely that the agreement can come into effect. Our information is that Australia has ratified the agreement with the proviso that, unless Canada and the United States do the same, the agreement will not become effective as far as it is concerned." On motion of the Minister, the Canadian Government gave formal approval to the International Wheat Agreement on June 21, 1948.

Conditions During World War II

The second World War produced many changes in the wheat situation. Stocks of surplus wheat were heavy in the fall of 1939, but for the greater part of the first year of war international movement of wheat was on a fairly liberal scale. The invasion of Norway, Denmark and the Low Countries in the spring of 1940, and later the conquest of France, eliminated markets to which Canadian wheat had been sold in substantial quantities prior to the war, but this was offset by larger exports to Great Britain.

The shipping situation had greatly curtailed the movement of wheat from Australia and Argentina, and the entry of Japan into the war further aggravated Australia's position as a wheat exporter. As a result, Canada became the principal source of wheat supplies, particularly for the United Kingdom market, and has continued in that role up to the present time.

Wartime Shifts in Acreage

The first major change in wartime wheat policy in Canada was made in 1941, when the Dominion Government encouraged a reduction in the acreage seeded to wheat by direct payments to farmers. The growing demand for Canada to supply live-stock and live-stock products was largely responsible for the shift away from wheat to the production of feed grains. The existing reserve stocks of wheat were large enough to permit a drastic reduction in wheat acreage, and Canadian farmers responded to the new policy by reducing the acreage planted to wheat in 1941 by nearly 7,000,000 acres. Continuation of these payments into 1943 saw the wheat acreage in Canada fall to its lowest level since 1918 but, in 1944, when acreage reduction payments were discontinued, a sharp increase in wheat acreage took place. Further increases occurred in 1945 and 1946.

Wartime Rise in Demand

The crop year 1943-44 witnessed a phenomenal use of wheat for live-stock feed, particularly in the United States where feed grain supplies were insufficient to maintain the greatly increased live-stock population. It became necessary to substitute wheat for corn maize and other feed grains, and eventually Canada had to ship very large quantities of wheat to the United States for use there as live-stock feed. At the same time the use of wheat for animal feed in Canada also increased to a record level of more than 100,000,000 bushels. Preliminary figures for the twelve months ending July 31, 1944, indicated that a total of 570,000,000 bushels of wheat was fed to live-stock and poultry in North America or about the same quantity as required to feed the human population. Substantial quantities of wheat were also used for the production of industrial alcohol in both the United States and Canada.

Exports of wheat and flour during the first five years of the war showed an increase of more than 35 per cent over the years immediately preceding the war, but the distribution of these exports changed radically in the war period for reasons already mentioned. During the last year of the war and in the period since the cessation of hostilities, requirements for wheat in war-devastated areas have pressed sharply on available supplies. During the crop years 1944-45 and 1945-46 over 680 million bushels of wheat and wheat flour in terms of wheat were exported from Canada. All of this, with the exception of about 53 million bushels consigned to the United States was cleared to overseas destinations.

Post-War Trends in Exports

In the crop year 1945-46, the first following the cessation of hostilities, Canada's exports of wheat and flour amounted to 340 million bushels, approximately the same as for the preceding two crop years. In 1946-47, however, there was a decrease of almost 100 million bushels in exports of wheat and flour. This reduction was largely attributable to the exhaustion of reserve stocks by the heavy export movements of the three previous years. With only two months of the 1947-48 crop year remaining at the time of writing, indications are that wheat and flour exports for the current crop year will be about 200 million bushels. Exports for the first ten months of the 1947-48 crop year are 163 million bushels, as compared with 184 million bushels for the same period of the 1946-47 crop year. Because of unfavourable weather conditions and late seeding on the prairies, substantial quantities of deliverable wheat remained on western farms in the spring of 1948. Farmers were urged by the Wheat Board to do everything possible to expedite delivery of this wheat so that domestic and overseas commitments might be met.

The first year of the project was spent in the field collecting data on the behavior of the birds. The second year was spent in the laboratory analyzing the data. The third year was spent in the field collecting data on the behavior of the birds. The fourth year was spent in the laboratory analyzing the data. The fifth year was spent in the field collecting data on the behavior of the birds. The sixth year was spent in the laboratory analyzing the data. The seventh year was spent in the field collecting data on the behavior of the birds. The eighth year was spent in the laboratory analyzing the data. The ninth year was spent in the field collecting data on the behavior of the birds. The tenth year was spent in the laboratory analyzing the data.

The results of the project show that the birds exhibit a strong seasonal pattern in their behavior. The birds are most active during the breeding season, which is from May to July. The birds are least active during the non-breeding season, which is from August to April. The birds are most active during the day, and least active at night. The birds are most active in the open areas, and least active in the wooded areas. The birds are most active in the areas with the highest food availability, and least active in the areas with the lowest food availability. The birds are most active in the areas with the highest predation risk, and least active in the areas with the lowest predation risk.

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