

**The Wheat That Won The West:
The Impact of Marquis Wheat Development**

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“Winning the Prairie Gamble: The Saskatchewan Story”
May 11, 2004**

1. Introduction

Saskatchewan production accounts for approximately half of the 20 million tonnes of wheat produced in Canada each year. Wheat is Saskatchewan's leading crop, of which the hard red spring varieties produced in the province are considered to be the world's finest bread wheats.¹ Saskatchewan is synonymous with wheat, and one might assume from the previous statements that wheat and Saskatchewan were a natural fit from the outset. Today, varieties of spring wheat ripen before the onset of fall frosts in most grain growing regions, but prairie farmers were not always so lucky.²

There are several essential ingredients for successful crop production. Fortunately, Saskatchewan has a resource of fertile soil, and a lack of heat and sunshine is seldom an issue for prairie farmers. It is also fortunate that most of the rain which falls each season in the grain-growing areas of the province occurs during the spring and summer months when it is needed most. However, one final ingredient is necessary for a successful recipe - the length of the growing season. The length between the last frost of spring and the first frost of autumn varies across the province, from an average of 115 days in the southern portion of the province, to 100 or less days in the more northern crop-producing regions.³ In the early days of settlement, "Too often development of an otherwise fine crop was abruptly arrested by fall frosts striking when plants were still green, leaving the grain kernels shrunken and light, and good for nothing better than pig feed," wrote Grant MacEwan.⁴

Dr. William Saunders, Director, Dominion Experimental Farms, recognized the need to develop an earlier maturing variety of wheat in Bulletin No.4 of the Central Experimental Farm, Ottawa dated March, 1889:

The question of early ripening varieties of grain and especially of wheat, is one of the utmost importance to the future of Canada. The Provinces of Prince Edward Island and New Brunswick, the northern portions of Quebec and Ontario, and the great plains of the North-West, all have a short season, and the immense advantages which would accrue to the farmers in all of these sections of our country from the introduction and dissemination of early ripening sorts of wheat, barley and oats, and the annual saving this would effect would be difficult to over-estimate. ...it is to the needs of the North-West settlers that we would at this time direct special attention. The soil of the great plains of Manitoba and the North-West Territories is stored with such an abundance of fertility that the capacity for production can scarcely be estimated provided that the difficulties associated with a short season can be partially or wholly overcome by the introduction of early ripening sorts.⁵

¹Saskatchewan Wheat Pool, From Field To Market (Canada, 1998), 12.

²Agriculture Canada, One Hundred Harvests. Agriculture and Agri-Food Canada website <<http://collections.ic.gc.ca/agrican/pubweb/hs270102.asp>>, August, 2002.

³Saskatchewan Wheat Pool, 8-9.

⁴Grant MacEwan, Harvest of Bread (Saskatoon: Western Producer Prairie Books, 1969), 73.

⁵Wm. Saunders, "Importance of obtaining early ripening varieties," Experimental Farms Reports 1889 in Experimental Farms Reports 1887-8-9 (Ottawa: Brown Chamberlain, 1889), 109-110.

2. The Search for a Suitable Wheat

Red Fife wheat, a high-yielding spring wheat with superb baking qualities, was the prominent variety of wheat grown by prairie settlers. *Red Fife's* hard kernel and strong flour quality were satisfactory to the settlers. However, the time required to mature the crop was often too long, resulting in frosted crops which affected the income derived from the harvest.⁶ Seager Wheeler, the famous farmer from Rosthern, Saskatchewan, nearly lost his farm in the early days due to the continuous freezing of the *Red Fife* wheat he planted.⁷ The need for an earlier ripening wheat was exacerbated by the rapid influx of settlers attracted by cheap land, and the development of the railroad. Wheat could not be successfully grown in more northerly areas with a shorter growing season, therefore, these areas were not being settled.⁸

Dr. William Saunders, Director, Dominion Experimental Farms, imported wheat varieties from Russia, India, Japan, Australia and the USA to be tested alongside *Red Fife*. Dr. Saunders would eventually come to the conclusion that his answer for an earlier-ripening wheat with superior baking qualities, to fill the niche of the prairies, would lie in improving the maturity of *Red Fife*. Some varieties, like *Ladoga* from Northern Russia, had shown promise in their earliness, but lacked good bread making qualities.⁹ The large distance between prairie farmers, and the major wheat markets demanded that only the highest quality wheat varieties, which commanded high prices, be grown on the prairies to ensure that the transportation costs were not crippling. Dr. Charles Saunders, Dominion Cerealist, summarized his father's next course of action in his 1909-10 report:

To meet this need, early ripening varieties of wheat were imported from various countries by the Director of the Experimental Farms and, at as early a date as possible, experiments in cross-breeding were begun for the purpose of combining in one sort all the desired qualities. Naturally, *Red Fife* was used as one of the parents in the majority of the crosses which were effected, for, from a commercial point of view, this wheat possesses perhaps more good qualities than any other well-known kind.¹⁰

Dr. Saunders' elder son Percy was sent to make crosses at the three western Experimental Farms

⁶Charles E. Saunders, "Report of the Cerealist," Experimental Farm Reports 1910 (Ottawa: C.H. Parmelee, King's Printer, 1910), 161.

⁷Rupert D. Ramsey, "Grand Old Man of Saskatchewan Agriculture, Seager Wheeler, Looks Back on Rich, Full Life," Saskatoon Star Phoenix March 14, 1961 . Saskatchewan News Index Online <<http://library.usask.ca/sni/stories/her11.html>>. February, 2002.

⁸National Research Council, Charles Edward Saunders (1867-1937). Canadian Science and Engineering Hall of Fame website <http://www.nrc.ca/corportae/english/hall/u_i24_e.html>. February, 2002.

⁹Agriculture Canada, Origin of Marquis Wheat. Agriculture and Agri-Food Canada website <<http://res2.agr.ca/ecorc/marquis.htm>>. April, 2002.

¹⁰Charles E. Saunders, "Report of the Cerealist," Experimental Farms Report 1910, 161.

during the summer of 1892. The cross which would eventually give rise to the famed *Marquis* wheat was between *Red Fife* and a variety from India known as *Hard Red Calcutta*. *Hard Red Calcutta* gave low yields and was of poor quality; however, the wheat matured roughly 20 days prior to *Red Fife*. It is believed that this cross was made by Percy Saunders during the summer of 1892 at the Indian Head Experimental Farm located in Indian Head, Saskatchewan.¹¹

An important development in the search for a wheat suitable for the west, was the appointment of Dr. Charles Saunders to the position of Dominion Cerealists in 1903. Charles began by re-examining the cross-bred strains of previous years, filed away in musty bottles on shelves at Ottawa's Central Experimental Station. Charles' attention was caught by the variety known as *Markham*, a cross between *Red Fife* and *Hard Red Calcutta*, made by Charles' brother Percy in 1892. Four heads were selected from a plot of *Markham* in 1903. The superior strain selected from *Markham*, due to its earliness and strength, was named *Marquis*. During the winter of 1903-04, Charles determined the probable quality of the selected strains by effective, yet low-tech methods as explained in Symko: "During the winter of 1903-04 he did not have a proper laboratory, a mill for grinding wheat, or an oven for baking bread. However, he would take a few grains from each stalk, chew them and decide on their probable flour and bread quality on the basis of the dough created in his mouth." Laboratory tests in 1906-07 confirmed Charles' preliminary assessment of *Marquis* with excellent results in regards to milling and baking quality.¹²

Dr. Charles Saunders sent 23 pounds, of the 40 precious pounds in existence, of *Marquis* grain from Ottawa to the Indian Head Experimental Farm for a field trial in 1907. It was time to test *Marquis*' strength under the conditions of the West, where it would have to grow successfully to be of any value. Charles carefully chose the site of his first western trials as explained by Grant MacEwan, "To whom should he entrust the responsibility for the test? He considered carefully and decided that the hard-to-convince Scot, Angus Mackay at Indian Head, would be the best referee." Angus Mackay, Superintendent, Indian Head Experimental Farm, took his assignment to test *Marquis* very seriously. Unfortunately, not everyone realized how precious the 23 pounds of seed really was. Prior to planting in 1907, the sample of *Marquis*, stored away on a granary shelf at the Indian Head Farm, went missing, "stolen no doubt, by somebody interested in feed for his pigeons or hens." Mackay was beside himself with worry, and issued a written plea to the workers at the Experimental Farm, emphasizing the fact that the sample of grain might be the variety that western farmers were so desperately searching for. To Mackay's relief, the sample made its way back on the granary shelf by the next morning, not a pound missing.¹³

¹¹Agriculture Canada, Origin of Marquis Wheat. Agriculture and Agri-Food Canada website <<http://res2.agr.ca/ecorc/marquis.htm>>. April, 2002.

¹²A.H. Reginald Buller, Essays on Wheat (New York: The McMillan Co., 1919), 155-156 as cited in Stephan Symko, From a single seed - Tracing the Marquis wheat success story in Canada to its roots in the Ukraine. Agriculture and Agri-Food Canada website <<http://res2.agr.ca/research-recherche/business/wheat/026.html>>. April, 2002.

¹³Grant MacEwan, Harvest of Bread, 75-76.

3. The Superiority of *Marquis*

Marquis' superiority was proven over the summers to follow under the growing conditions of the prairies. The variety produced high yields, was earlier in maturity and had shorter straw than *Red Fife*.¹⁴ *Marquis* was not resistant to rust, but because it ripened earlier and was ready for harvest before rust became problematic, it was said to "avoid rust."¹⁵ Significantly earlier maturity and a 40 percent yield increase over *Red Fife* is illustrated in tabular form in Buller, based on data compiled for the 1907-1917 growing seasons at the Indian Head and Brandon Dominion Experimental Farms.¹⁶

Marquis proved its worth as a better alternative to *Red Fife*. "Late in 1909, MacKay advised Saunders that he had complete confidence in the wheat and believed the time had come to share it with the western farmers," wrote Grant MacEwan.¹⁷ Four hundred samples of *Marquis* wheat were distributed to farmers throughout Western Canada in the spring of 1909.¹⁸ Saunders expressed his approval in his 1909-10 Report of the Cerealists: "Taking all points into consideration, *Marquis* wheat is recommended as the most promising sort at present available for farmers who require a hard, red wheat of high baking strength and ripening earlier than *Red Fife*." Saunders expressed his approval in his 1909-10 Report of the Cerealists, reporting on Several successful crops of *Marquis* grown in Saskatchewan during the 1909 season were also included in Saunders' 1909-10 report:

The best sample which reached the Cerealists' office was grown by Mr. E.B. Cay of Beatty, Sask., and showed the phenomenal weight of 66¹/₄ pounds to the measured bushel. Other fine samples were received from Mr. Martin Dornian, of Disley, Sask. (65 pounds per bushel), and from Mr. L.T. Symonds, of Marshall, Sask. (64³/₄ pounds per bushel).¹⁹

4. The Impact of *Marquis* Wheat

Initially the demand for *Marquis* outweighed the supply, and was soon in demand across Canada

¹⁴Agriculture Canada, Origin of Marquis Wheat. Agriculture and Agri-Food Canada website <<http://res2.agr.ca/ecorc/marquis.htm>>. April, 2002.

¹⁵A.H. Reginald Buller, Essays on Wheat (New York: The McMillan Co., 1919), 255-256 as cited in Stephan Symko, From a single seed - Tracing the Marquis wheat success story in Canada to its roots in the Ukraine. Agriculture and Agri-Food Canada website <<http://res2.agr.ca/research-recherche/business/wheat/026.html>>. April, 2002.

¹⁶**A.H. Reginald Buller**, Essays on Wheat, 174-75.

¹⁷Grant MacEwan, Harvest of Bread, 76.

¹⁸A.H. Reginald Buller, Essays on Wheat (New York: The McMillan Co., 1919), 157 as cited in Stephan Symko, From a single seed - Tracing the Marquis wheat success story in Canada to its roots in the Ukraine. Agriculture and Agri-Food Canada website <<http://res2.agr.ca/research-recherche/business/wheat/021.html>>. April, 2002.

¹⁹Charles E. Saunders, "Report of the Cerealists," Experimental Farms Report 1910, 171.

and into the northern United States. By 1920, *Marquis* wheat accounted for 90 percent of the 6.9 million ha seeded to hard red spring wheat on the Canadian prairies.²⁰ Grain production in Saskatchewan nearly doubled between 1906 and 1920.²¹ The introduction of *Marquis* allowed farmers to grow wheat further north, where the growing season is shorter, with greater success. The production of cereals exploded in Canada. The acreage devoted to wheat in Canada grew from 5,096,053 acres in 1906 to 16,125,451 by 1918. The development of *Marquis* encouraged the expansion of the wheat growing areas, the influx of large numbers of new immigrants to the southern areas of the prairie provinces, and contributed to northward expansion.²² The increased supply of grain was also important to supply the extra food required to meet the needs of the First World War. The increased wheat prices during the First World War and “[R]evenues from sales of *Marquis* filled the pockets of Canadian farmers with million of dollars for many years.” The taxes collected on the large volume of wheat sales aided the federal government’s ability to build schools, agricultural colleges and universities in the prairie provinces.²³ Agriculture Canada’s history states, “During its period of popularity it was responsible for the creation of millions of dollars worth of new wealth that would not have been possible without it.”²⁴

5. The Wheat Wizard of Rosthern

The beginning of something wonderful for Canadian agriculture happened in 1911. Dr. Charles Saunders sent a sample of *Marquis* to a dedicated and experimental farmer named Seager Wheeler, who operated a small farm near Rosthern, Saskatchewan. From the five pound sample sent to Wheeler, he produced four bushels and thirty-five pounds of stellar *Marquis* seed.²⁵ Amazingly, this bountiful harvest was grown on a tiny plot of land roughly one-nineteenth of an acre in size.²⁶ Grant MacEwan summarized Wheeler’s first experience with cultivating *Marquis*:

With almost parental devotion he watched tender shoots break through the soil, then stool, head, and ripen. Growth was about as high as Wheeler’s head, and that little man knew what it was to become lost in wheat as he walked to remove weeds; it was like being lost in the woods. At threshing time he had the satisfaction of seeing golden grain pouring from the threshing machine spout,

²⁰Agriculture Canada, The First Hundred Years. Agriculture and Agri-Food Canada website <<http://collections.ic.gc.ca/agrican/pubwebs/hs10012.asp>>. August, 2002.

²¹Agriculture Canada, Indian Head Experimental Farm 1886-1986. Agriculture and Agri-Food Canada website <<http://collections.ic.gc.ca/agrican/pubweb/hs230006.asp>>. August, 2002.

²²Stephan Symko, From a single seed - Tracing the *Marquis* wheat success story in Canada to its roots in the Ukraine. Agriculture and Agri-Food Canada website <<http://res2.agr.ca/research-recherche/business/wheat/026.html>>. April, 2002.

²³A.H. Reginald Buller, Essays on Wheat (New York: The McMillan Co., 1919), 255-256 as cited in Stephan Symko, From a single seed - Tracing the *Marquis* wheat success story in Canada to its roots in the Ukraine. Agriculture and Agri-Food Canada website <<http://res2.agr.ca/research-recherche/business/wheat/026.html>>. April, 2002.

²⁴Agriculture Canada, The First Hundred Years.

²⁵Hopkins Moorhouse, “Seager Wheeler: Champion Grower of Grain,” Seager Wheeler’s Book on Profitable Grain Growing (Winnipeg: Grain Growers’ Guide Limited, 1919), 24-25.

²⁶Elsie Pomeroy, William Saunders and His Five Sons, 143.

plump, clean, heavy, red, and hard. It was the best wheat he had ever seen...²⁷

Neighbours, impressed by Wheeler's bountiful harvest of Marquis, encouraged him to enter the Provincial Seed Fair. The farmer from Rosthern, who had been reluctant to enter the competition, came out victorious, and from then on, Wheeler no longer needed coaxing to enter competitions. He painstakingly selected his finest two bushels of Marquis and entered the 1911 New York Land Show. When J.J. Hill, Great Northern Railway President, resisted opening up the competition for the best hard red spring wheat beyond the boundaries of the United States, Sir Thomas Shaughnessy, C.P.R. President, challenged Hill by offering \$1000 in gold for the best hard red spring wheat grown anywhere on the continent. The unknown little farmer won this prize in his first venture onto the international stage, and the \$1000 prize was enough "to pay with C.P.R. money for his C.P.R. farm." Seager and his Rosthern farm would soon be world famous. As the countless newspapers, magazines and photographers clamored to get his story, it was surely "the biggest advertisement Canada had had." The world's championship brought attention to Marquis, to the province, the country and to Wheeler himself. He would go on again to win with Marquis in 1914 at Kansas, and in 1915 at Denver.²⁸

Canada's bumper crop of 1915 helped to further the grain growing reputation of the nation, and particularly the province of Saskatchewan. The Canadian harvest of over 300,000,000 bushels, most of which was grown in Saskatchewan, was predominantly very high quality *Marquis* wheat. The bumper crop of 1915, in conjunction with Seager Wheeler's third world wheat championship, solidified Saskatchewan's reputation as the "wheat province."²⁹

6. Conclusions

Marquis helped to establish Canada's reputation as a great grain producing nation.³⁰ *Marquis'* outstanding flour and baking quality became the standard against which all other hard spring wheats were judged for half a century.³¹ Seager Wheeler's achievements with *Marquis* on the world stage put Saskatchewan on the map as a producer of superior quality bread wheat. Charles Saunders predicted, in a 1929 speech to the Royal Society, that *Marquis'* successor as king wheat would likely be a descendant of the *Marquis* line. *Marquis* was eventually replaced by rust-resistant varieties like *Thatcher*, *Apex* and *Renown*, but *Marquis* was in their pedigrees.³²

²⁸Hopkins Moorhouse, "Seager Wheeler: Champion Grower of Grain," 26-28. Seager Wheeler is often hailed as the most famous farmer in the history of the Prairie Provinces. His book entitled Seager Wheeler's Book on Profitable Grain Growing, published in 1919, was the most complete synopsis of the application of scientific agricultural techniques to dry-land farming of the day.

²⁹Grant MacEwan, Harvest of Bread, 91.

³⁰Government of Canada, Charles E. Saunders. Heirloom Series website http://collections.ic.gc.ca/heirloom_series/volume4/242-245.htm. April, 2002.

³¹Grant MacEwan, Harvest of Bread,----.

³²Government of Canada, Charles E. Saunders. Heirloom Series website

Marquis' excellent qualities spread through its use as a parent in wheat breeding programs worldwide, and thus, the legacy of *Marquis* continues today.³³

7. References

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http://collections.ic.gc.ca/heirloom_series/volume4/242-245.htm. April, 2002.

³³ Agriculture Canada, Origin of Marquis Wheat. Agriculture and Agri-Food Canada website <<http://res2.agr.ca/ecorc/marquis.htm>>. April, 2002.

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Wm. Saunders, "Importance of obtaining early ripening varieties," Experimental Farms Reports 1889 in Experimental Farms Reports 1887-8-9 (Ottawa: Brown Chamberlain, 1889), 109-110.

Appendix A: Quotable Quotes Relating to *Marquis* Wheat

“One way or another, its contribution to the economy of the nation was beyond calculation.”
Grant MacEwan, *Harvest of Bread*, 1969.

“The Dominion, especially the Prairie Provinces, has good reason to be proud of Dr. Charles Saunders; for his is the triumph of Marquis wheat.”
Seager Wheeler, *Profitable Grain Growing*, 1919.

“As fast as seed could be supplied, it swept over the prairies, east into Manitoba, west to the Foothills, south to cross the International Boundary, and north to force back the limits of wheat production...”

Grant MacEwan, *Between the Red and the Rockies*, 1952.

“He added more wealth to his country than any other man. Marconi gave power. Saunders gave abundance. Great lives, these.”

Charles Saunders’ obituary, *London Daily Express*, 1937.

"Marquis which, owing to its earliness in ripening and its high yield, is more suited to conditions in western Canada than its predecessor, has done much to encourage the breaking of new land on farms already established and also to increase the number of new farms by stimulating the immigration of experienced farmers. This effect of Marquis is imponderable and cannot be expressed in bushels or dollars per annum..."

A.H. Reginald Buller, *Essays on Wheat*, 1919.

“In very deed, that first handful of Marquis grains has brought naught but increased prosperity in its wake and by its influence has made farming on the broad prairie-land a more attractive industry.”

A.H. Reginald Buller, *Essays on Wheat*, 1919.

