

Prairie Grain Portal

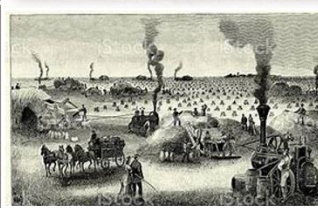
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Canadian Wheat Export Prospects

History of wheat in Canada

- Wheat was introduced to Canada in the early 1600s, first grown in Nova Scotia, then in Quebec and Ontario, by early 1800s also Manitoba. With new settlements across Prairies, wheat became the region's staple-crop.
- Early winters, droughts, and disease posed challenges, but more resilient seed-varieties and advanced farming-methods paved the way for yield-improvements to turn the Prairies into a prime wheat-growing region.
- The territory was vast, 3000 km from Great Lakes to Pacific Ocean with limited inland waterways; getting crops to end-markets was a huge challenge, but railways and country-elevators were quick to be built.



Early R&D efforts

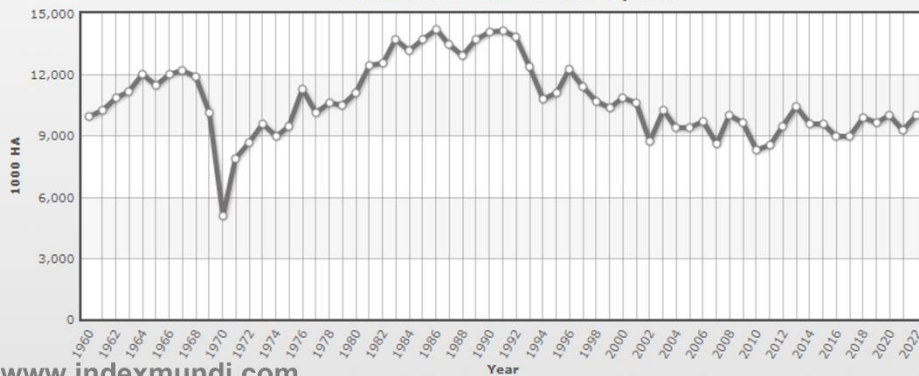
- The importance of agriculture was recognized in the early Confederation days with the establishment of *Dominion Experimental Farms (DEF)* in 1866 to focus on new-seeds as well as advancement in farming-methods.
- First achievement was the highly-resilient *Red Fife* introduced in Ontario, but real breakthrough came in early 1900s with faster-maturing *Marquis*, followed by the ultimate remedy *Thatcher* introduced in the 1930s.
- With multiple branches and stations across the country DEF came under the *Department of Agriculture*, embracing and funding continuous R&D programs in partnership with universities and special-purpose labs.



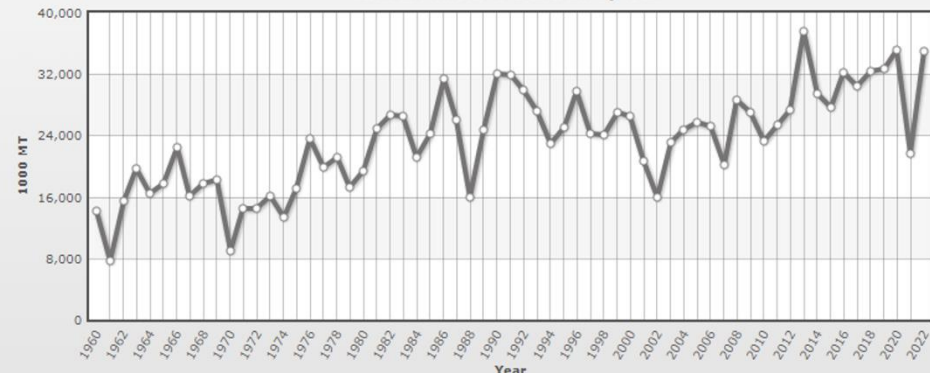
Our wheat yields and output

- Land area harvested with wheat across Canada increased steadily as the Prairies were settled, reaching about 10 million hectares in 1960. After a peak at 14 million in the 1980s, it has been steady at about 10 million.
- Wheat output increased to 35 MT in 2020, 2.5 times higher than in 1960 on about the same land-area – remarkable yield increase driven by seed-varieties and farming-methods, agronomy and technology in action.
- There were, of course, fluctuations along the way, like severe droughts in 1988 and 2002, when output was as low as 16 MT. But in the last 2021-drought output was down to only 22 MT, 35% higher than in 2002.

Canada Wheat Area Harvested by Year



Canada Wheat Production by Year

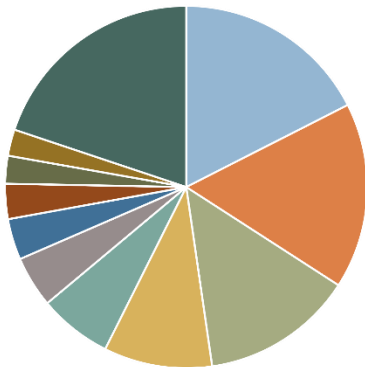


Global wheat production

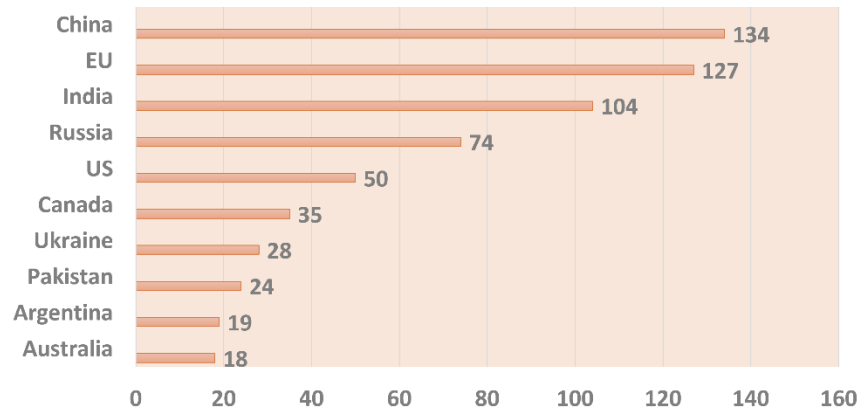
- In 2020 global wheat production was 765 MT – among other grains much less than corn (1200 MT) but more than rice (510 MT). At 613 MT, the top-10 wheat producers represented 80% of total global production.
- Top-5 wheat producers were China (134 MT), EU (127 MT), India (104 MT), Russia (74 MT), and US (50 MT). Our output (35 MT) represented less than 5% of the global total, but we still ranked 6th in the world.
- Behind Canada in the top-10 were Ukraine (28 MT), Pakistan (24 MT), Argentina (19 MT), and Australia (18 MT) – France and Germany would also be in these ranks, but they are reported as part of the EU total.

Wheat Production 2020
765 MT

■ China
 ■ EU
 ■ India
 ■ Russia
 ■ US
 ■ Canada
 ■ Ukraine
 ■ Pakistan
 ■ Argentina
 ■ Australia
 ■ Other

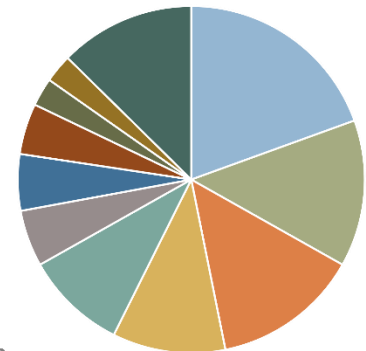


Top 10 Wheat Producers 2020 MT



Wheat Exports 2020
190 MT

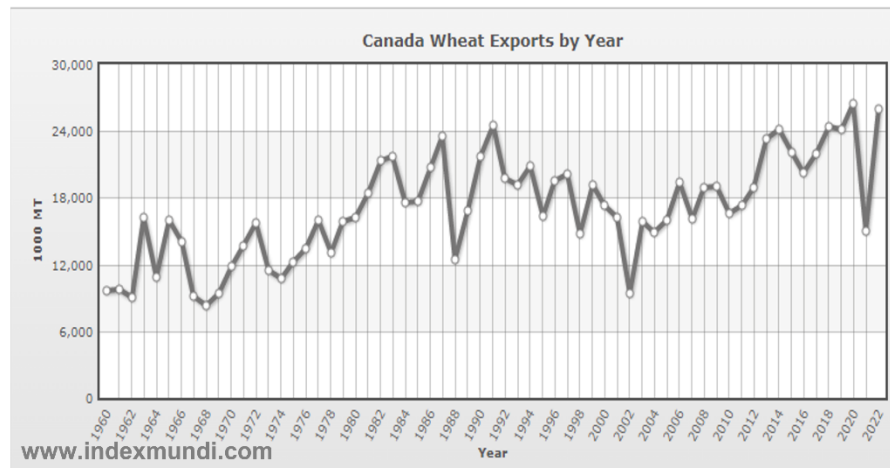
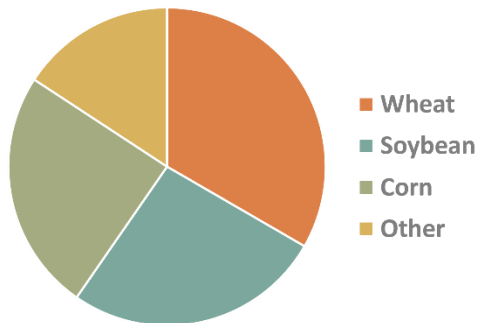
■ Russia
 ■ US
 ■ Canada
 ■ France
 ■ Ukraine
 ■ Australia
 ■ Argentina
 ■ Germany
 ■ Kazakhstan
 ■ Rest of EU
 ■ Other



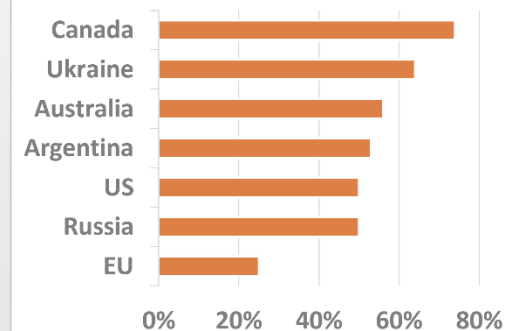
Global wheat trades

- Wheat ranks 2nd in production-volume but with 190 MT of annual exports it is 1st in trading-volume, one-third of all grain trades – followed by soybean in 2nd place with 150 MT and corn in 3rd with 140 MT.
- About 25% of all the wheat grown worldwide is exported, lower than soybean with a 40% export-to-production ratio, but higher than others, most in the 10-15% range – rice, corn, other coarse-grains, and oilseeds.
- Among top wheat-producers in the world, in 2020, Russia, US, Argentina, and Australia exported 50-55% of their wheat output, Ukraine higher at 64%, while Canada had the largest export-share in the world at 74%.

Global Grain Trades



Wheat Export/Production

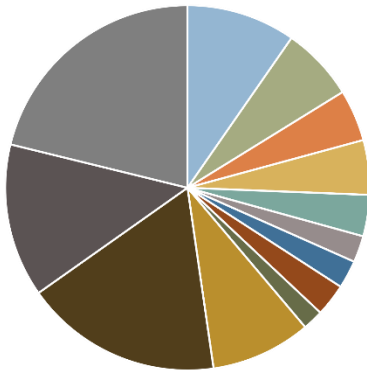


Handful of wheat exporters

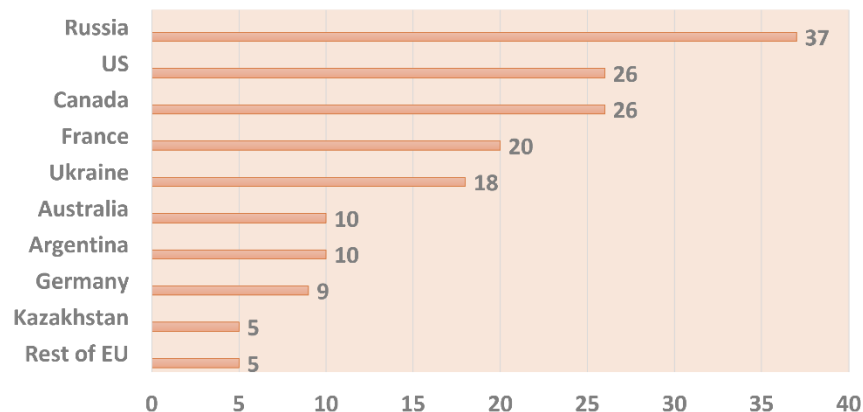
- In 2020 Russia was the top wheat-exporter with 37 MT, followed by US and Canada with 26 MT each, France 20 MT, and Ukraine 18 MT in the top-5 – together representing two-thirds of all global wheat exports.
- Next 5 ranks were Australia (10 MT), Argentina (10 MT), Germany (9 MT), Kazakhstan (5 MT), and rest of EU (5 MT) – bringing the share of top-10 to 88%, leaving only 12% of wheat exports for others to fulfill.
- Top-10 wheat exporters represented less than 50% of global wheat production. Though 2nd largest producing block EU was among them, not 1st and 3rd, China and India, with a combined production-share of 31%.

Wheat Production 2020
765 MT

- Russia
- US
- Canada
- France
- Ukraine
- Australia
- Argentina
- Germany
- Kazakhstan
- Other EU
- China
- India
- Other

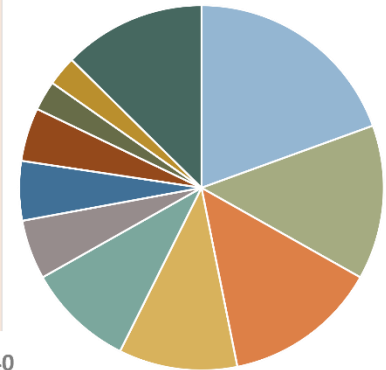


Top 10 Wheat Exporters 2020 MT



Wheat Exports 2020
190 MT

- Russia
- US
- Canada
- France
- Ukraine
- Australia
- Argentina
- Germany
- Kazakhstan
- Rest of EU
- Other

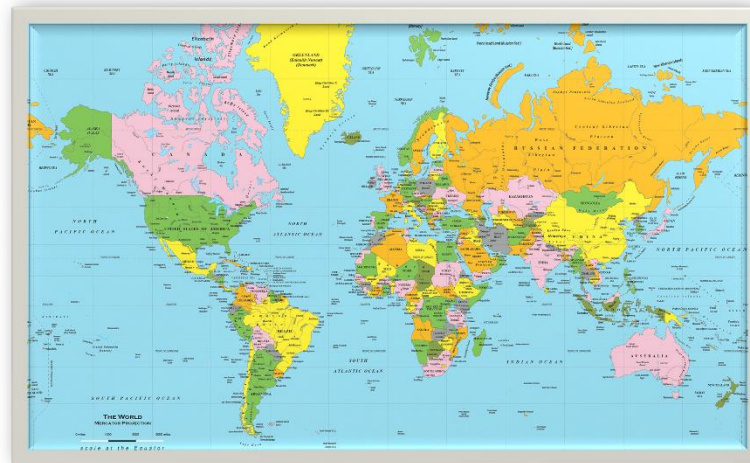
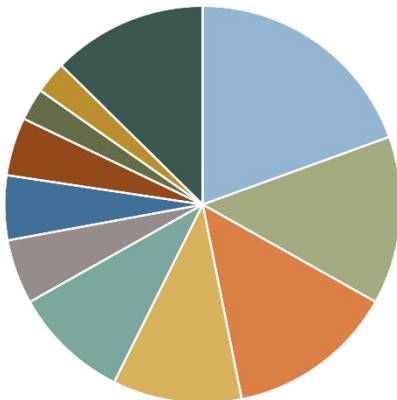


Rest of the world must import

- Outside the small group of major exporters, most other countries must import wheat. Largest are Egypt and Indonesia, each importing 10-11 MT, followed by Brazil and Algeria 7-8 MT, India and Japan 5-6 MT.
- These leading importers take up about 50 MT annually; the remaining 135-140 MT of wheat imports are shared by other countries, but each importing less than 5 MT annually to feed their respective populations.
- Thus, most of the world face an import-imperative; there are only a handful of wheat-producers with a surplus to be net-exporters, but global grain trades (190 MT in 2020) still function quite competitively.

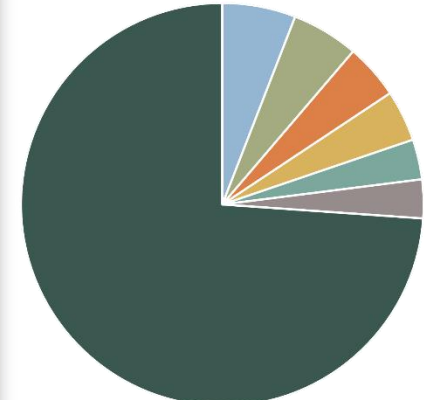
Wheat Exports 2020

- Russia
- US
- Canada
- France
- Ukraine
- Australia
- Argentina
- Germany
- Kazakhstan
- Rest of EU
- Other



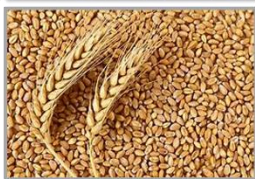
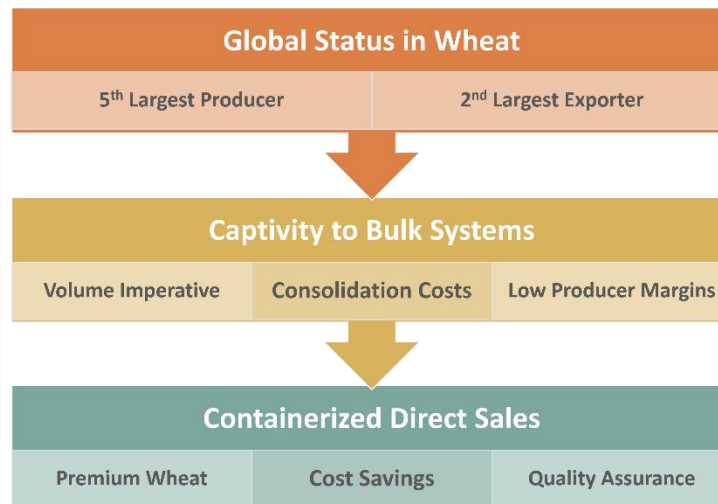
Wheat Imports 2020

- Egypt
- Indonesia
- Algeria
- Brazil
- India
- Japan
- Other



Canada's global position

- We are among the lucky ones with a surplus, in fact the largest surplus from what we produce, three-quarters of our output, and this year we may rank the 2nd or 3rd largest behind Russia and perhaps EU as well.
- We can be proud of our record in the seeds we have cultivated, and the yield increases we have achieved. But as advanced as our production systems are, we should not forget that we are a high-cost producer.
- We cannot afford to focus on volume alone, as we do by consolidating and exporting in bulk, thereby failing to get value commensurate with the quality of numerous wheat varieties we grow for specific end-uses.



Classification systems

- Over the last century, we placed as much emphasis on developing the world's most advanced classification/grading systems, as we had on achieving yield-increases through new seed-types and farming-methods.
- Grain classification is not just a theoretical exercise based on agronomic traits, but a process driven by end-user requirements, in the case of wheat dictated by results achieved in flour-milling or food-processing.
- Grades relate to a grain's end-use quality, how grain characteristics affect performance during processing (e.g., how much flour is produced during milling) or the quality of the end-product (e.g., texture of cooked pasta).



Our wheat-varieties

Over the years wheat classes evolved, and continue to do so, to meet the needs of end-users, and to guide wheat-growers to adapt to market trends. Now there are 5 milling-classes in Eastern Canada, and 9 in Western Canada.

Class	Characteristics	End Uses
CNHR-Canada Northern Hard Red	Red spring wheat, medium to hard kernels, very good milling quality, medium gluten strength, 3 milling grades	Hearth breads, flat breads, steamed breads, noodles
CPSR-Canada Prairie Spring red	Red spring wheat, medium hard kernels, medium dough strength, 2 milling grades	Hearth breads, flat breads, steamed breads, noodles
CPSW-Canada Prairie Spring White	White spring wheat, medium dough strength, 2 milling grades	Flat breads, noodles, chapatis
CWAD-Canada Western Amber Durum	Durum wheat, high yield of semolina, excellent pasta making, 4 milling grades	Semolina, couscous
CWES-Canada Western Extra Strong	Hard red spring wheat, extra strong gluten, 2 milling grades	Ideal for blending, specialty products that need high gluten content
CWHWS-Canada Western Hard White Spring	Hard white spring wheat, superior milling quality producing flour with excellent color, 3 milling grades	Bread and noodle production
CWRS-Canada Western Red Spring	Hard red spring wheat, superior milling and baking quality, 3 milling grades, various guaranteed protein levels	High volume pan bread, alone or in blends with other wheat for hearth, bread, steamed bread, noodles, flat bread, common wheat pasta
CWRW-Canada Western Red Winter	Hard red winter wheat, very good milling quality, 3 milling grades	French breads, flat breads, steamed breads, noodles
CWSWS-Canada Western Soft White Spring	Soft white spring wheat, low protein content, 3 milling grades	Cookies, cakes, pastry, flat breads, noodles, steamed breads, chapatis

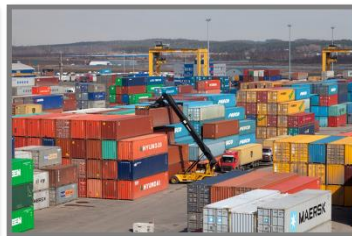
Impediment: bulk-systems

- Despite our quality-standards and classification-systems, second to none in the world, neither our grain-economy at large nor individual producers receive value commensurate with what's grown and exported overseas.
- Biggest impediment we face in this regard is the captivity of our grain-exports to bulk-systems – 85% of all grains and even a higher share of wheat that comes in all different classes and grades for specific end uses.
- We delude ourselves that bulk-systems are highly compartmentalized, preserving crop quality-and-integrity – even if this were to be true in consolidation, we have no way of ensuring the same in distribution.



Salvation: containerization

- Specific classes of wheat, and their grades, are meant for specific end-use attributes, be it for bread-varieties, noodles-pastas, or cakes-cookies, and tend to fetch higher prices than all-purpose wheat varieties.
- End-users require specialty wheat varieties in relatively small quantities – even large flour-mills buy them in small quantities to blend with other varieties or all-purpose wheat to produce the desired flour attributes.
- End-users of wheat of all kinds can receive what they need delivered to their doorsteps in multiple containers with crop integrity intact, identity-preserved, in volumes to meet their production requirements/schedules.



Cost savings in containers

- Though rail-costs in bulk (by unit-trains) are lower, containerization at or near production sources eliminates the need for consolidation, thus bypassing both inland and coastal terminals, highly costly operations.
- On a per-ton basis, container-rates across the Pacific are lower than bulk-vessel charter-rates – large volumes of containers return empty to Asia that can take up grain exports as back-haul (currently as much as 10 MT).
- Also, there are significant cost savings at the receiving end – no need for coastal-terminals and inland distribution-systems. End-users can lower storage-inventory costs by receiving what they need at regular intervals.

BULK-GRAIN LOGISTICS CHAIN



CONTAINERIZED-GRAIN LOGISTICS CHAIN



Our platform's mission

- Prairies have a huge variety of high-grade wheat available for export. Instead of bulk-systems, producers are eager to sell direct to overseas buyers, end-users of wheat, like they already do across North America.
- Overseas buyers have little visibility into the Prairies to know what is available to meet their specific processing needs. Also, they are deterred by procurement, consolidation, servicing, and shipping challenges.
- Our mission is to reach out to overseas buyers, understand their needs, prepare procurement/consolidation plans, and make servicing/shipping arrangements to deliver what they need to their doorsteps in containers.

