

This backgrounder covers:

- ☀ Wheat production in Canada
- ☀ The milling process
- ☀ Wheat consumption in Canada
- ☀ Wheat products

Wheat production in Canada

If you look at worldwide total wheat production, Canada ranks as the seventh largest wheat-producing country. Yet, Canada is the largest producer of high protein milling wheat in the world. Canada's milling wheat is desired for its superior bread-making abilities.

The majority of wheat is exported to other countries. Canada's annual wheat export revenues reach close to \$5.4 billion ... making wheat the highest earner of all exported agricultural products. Major buyers of Canadian wheat include China, South Korea and Japan.

Wheat is Canada's largest crop in terms of both area seeded and production. All provinces grow wheat, except Newfoundland and Labrador; although the following four provinces are the major producers:

- ✓ Saskatchewan – 48%
- ✓ Alberta – 16%
- ✓ Manitoba – 28%
- ✓ Ontario – 7%

Wheat grown in Canada

Wheat is a hardy plant. Over the years, plant researchers have created new varieties of wheat and improved old varieties in order to produce high-quality, high-yield wheat that adapts well to Canada's growing season.

In Canada, the types of wheat most often grown are:

- Common (non-durum) wheat, which is classified as either hard or soft, *and*
- Durum wheat

Hard Wheat	Includes hard winter wheats and hard spring wheats, which contain more gluten-producing proteins than soft wheat. Used for making bakery flours, bread flours, and all purpose flours.
Soft Wheat	Low in gluten-producing proteins. Usually milled into cake, pastry or cake and pastry flours.
Durum Wheat	Generally high in gluten-producing proteins. Used for making semolina and flours which are made into Indian flat bread, macaroni and other pastas.

Milling process

The kernel is the wheat seed. That's what gets planted and grows to become the wheat plant. Some wheat plants grow as tall as seven feet but most reach a height of two to four feet. The wheat head—the part of the plant harvested for food production—can yield 50-75 seeds. The seeds/kernels are small and dry and well suited for storage and transport.

Wheat seeds get milled into flour. The process follows these basic steps; however, milling is far more complex than this simplified view conveys.

- 1. Preparing the wheat** – where the wheat is weighed, inspected and graded.
- 2. Cleaning** – the removal of impurities like stones, dirt, metals and other seeds.
- 3. Tempering** – during this stage the wheat is soaked in water to make it easier to remove the outer bran layer.
- 4. Gristing** – this involves mixing different wheat to create a specific kind of flour.
- 5. Milling** – involves a number of repeated steps:
 - a. The wheat is ground by a machine equipped with rollers that break it into pieces.
 - b. Then it is put through sifters. The resulting meal starts out coarse and with repeated grinding and sifting becomes fine white flour, wheat bran and wheat germ. The milling process can either produce distinct products—wheat bran, refined white flour, wheat germ—that can be packaged and sold separately, milled together to produce a whole grain flour, or blended to form different flours.
- 6. Blending** – different components are blended back together to form different flours. For example, whole wheat flour is a blend of white flour and wheat bran.
- 7. Enriching & fortifying** – the addition of vitamins and minerals identified in government regulations.

Interesting Fact

A wheat seed begins to sprout in about a week and breaks through the soil a few days later.

When the wheat is golden in colour and the kernels have dried and hardened, the wheat is ripe and ready to be harvested.

Interesting Fact

One bushel of wheat makes enough flour for 73 one-pound loaves of white bread.

Flour that is milled to keep the bran and germ is considered whole grain flour.

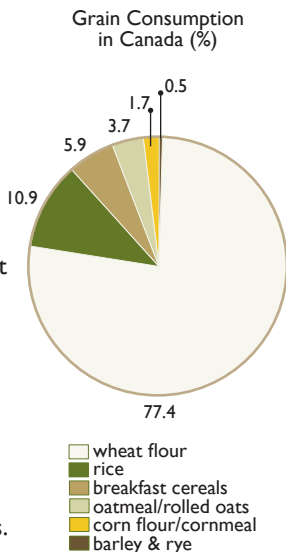
Enrichment and Fortification		
Term	Definition	In Canada
Enrichment	the practice of adding back only those micronutrients that are lost during milling and for which there is good evidence that a deficiency exists within the general population	It is mandatory to enrich white wheat flour with thiamin, riboflavin, niacin and iron. It is voluntary to enrich pasta, cornmeal, pre-cooked rice and breakfast cereals.
Fortification	the addition of nutrients whether or not they are present in the food or the addition of levels that are much higher than the natural content	It is mandatory to fortify white wheat flour, enriched pasta, and enriched corn meal with folate. It is voluntary to fortify breakfast cereals and pre-cooked rice.

Wheat consumption in Canada

In Canada, the grain we consume the most is wheat.

The graph illustrates how our wheat intake compares to that of other grains. Wheat, rice and corn make up 85% of the world grain production and wheat and rice are food staples for most of the world's population.

Canada's Food Guide advises Canadians to eat grain products each day, with an emphasis on whole grains.



Wheat products

We eat wheat in many forms. Wheat is the basis for a vast array of foods which are a regular part of our diet. For example, there are breads, biscuits, rolls, crackers, muffins, pancakes, breakfast cereals, pasta, cookies and cakes made from wheat flour.

Flour

The wheat flour can be white enriched or whole wheat ... and the food label will tell you which it is. We can choose from a range of wheat flours for our cooking and baking needs:

- Enriched white all purpose flour
- Cake and pastry flour (also enriched) that produces a lighter texture—great for cakes
- Whole wheat that is a good source of fibre
- Whole grain wheat flour—contains all three parts of the wheat kernel
- Unbleached white flour
- Bread flour that has a higher gluten content for bread-making
- Self-rising flour that has added baking powder and salt

Bread

Today's grocery shelves are stocked with numerous varieties of bread—enriched white, whole wheat, whole grain, multi-grain, ones with special flavouring such as honey, bran bread, fruit breads, sourdough, soda breads, flat breads, crusty breads, steamed breads and more. There is a bread to satisfy everyone's taste preferences.

Semolina

Semolina is the end product from the milling of durum wheat. High-quality durum semolina is used to make long pasta such as spaghetti. Short pasta can be made from semolina or a combination of semolina and all purpose flour. Couscous is made from steamed durum semolina and is often served with spices, vegetables and meat.

Bulgur

Bulgur is made from wheat kernels that are cooked, dried and cracked. Bulgur is most often made from durum wheat but it can be made from common wheat as well. The most well-known dish using bulgur is tabouli (tabbouleh)—a grain and vegetable salad.

Wheat berries

Wheat berries are the wheat seeds or kernels. They are available as hard wheat or soft wheat berries and are gaining in popularity. Wheat berries are nutty in flavour and offer a crunch to dishes such as salads. They must be soaked and cooked but work as a tasty rice substitute or an added ingredient to a chili or a stew.

Wheat germ and wheat bran

We can add wheat germ to baked goods and casseroles and boost the nutritional value of the food. In addition to vitamins and minerals, wheat germ provides us with naturally occurring antioxidants.

Wheat bran adds fibre to foods. Many recipes are available today that use wheat bran—everything from muffins to blended drinks. The bran is the outer layer of the wheat kernel that is removed during the milling process when refined white flour is made.

Interesting Fact

Gluten is the protein found in wheat that gives bread its distinctive texture and chewiness.

Different wheat plants produce different levels of gluten and the higher gluten types are prized for their bread-making power.

Interesting Fact

Wheat products don't stop with food.

Wheat's gluten and starch content also make it useful in the following products:

- Animal feed
- Concrete
- Paper products
- Adhesives
- Cosmetics
- Plastic film and bags
- Soaps

Companion activities/Resources:

- ✓ From wheat to flour
- ✓ Map of Canada where wheat is grown
- ✓ A look at grain products and labels
- ✓ Growing wheat

Websites worth checking out:

- ✓ Grains-they're essential! Program www.grainsessential.ca/english/grains/
- ✓ Canadian Wheat Board www.cwb.ca/public/en/publications/students_researchers/pdf/wheat-to-bread.pdf
www.cwb.ca/public/en/publications/students_researchers/pdf/durum_to_pasta.pdf
- ✓ The Flour and Grain Education Program (United Kingdom) www.flourandgrain.com/index.asp
- ✓ Wheat Mania – Kansas Association of Wheat Growers www.wheatmania.com/

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