



# Brown rice flour

Introducing the new substitute for wheat flour achieved through wet milling method

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**W**heat is one of the most used grains around the world following corn and soybeans. It is a critical plant as it is the oldest, cheapest and multipurpose crop which is mostly used to make flour. To get wheat flour,

the wheat grain needs to be grinding up in flour. Then it comes three main parts – endosperm, germ and bran parts that contain protein, vitamin and fibre parts, respectively, with endosperm used to make white flour.

On the other hand, brown flour is made from germ and bran

parts. The last one is the whole grain flour that includes all three parts together: endosperm, germ and bran parts and is considered to be the healthiest version of the wheat flour. Wheat is mostly separated into different types by seasons.

Moreover, it can be hard or soft depending on how much protein it contains. You can notice easily from its colours as light golden colour is soft and has less gluten but wheat in bronze colour is the hard type of wheat and contains more gluten.

Wheat flour is widely used as an ingredient to make bread, pasta, baked goods, pancakes, thicken sauces, coating foods and many others. It is the main type of food that feeds people all over the world but now we are facing a shortage of it from the pandemic, war and climate change.

In this article, we gather information about reasons behind the

shortage of wheat, learn more about the brown rice flour and the comparison between wheat flour and brown rice flour.

### Reasons behind the shortage of wheat

More than 80 percent of exporters of wheat around the world, Russia and Ukraine are in the top five. In 2020, the world's largest wheat exporters are Russia, USA, Canada, France, Ukraine, Australia, Argentina and Germany. Russia ranked in the first with 37.3 million tonnes while Ukraine made 18.1 million tonnes of wheat exporting. In fact, only seven countries get a fair share of 86 percent of wheat exporting.

As the conflict between them is still going on, it affects the shortage of wheat especially for countries in North Africa, the Middle East, and Asia such as Egypt, Indonesia, Bangladesh, Turkey, and Yemen. Producing wheat flour is even more challenging as sanctions on Russia are affected by inflated energy prices and fertilisers are even more pricey. Apart from the war since February 2022, this wheat shortage is also the result of climate change due to heatwaves and dryness and the pandemic as well.

As a result, exporting is disrupted, food prices are rising, and poverty is increasing all over the world. Because of this, people are worried about the security of food and start to think about what we can use as a substitute for wheat? Thereafter rice is coming on the way as another option.

### Wheat flour VS brown rice flour

Wheat flour is used widely in the bakery and food industries. The process to make wheat flour uses a dry milling method. So, wheat grain does not require to be cleaned in the first stage. Moreover, the dry milling system has no control with the high temperature at the







end of the line. Thus, this type of process can cause impurities mixed up in the product or even include toxins along the process.

Brown rice grains are in the transforming process by soaking in pure water as good as the quality of drinking water. This process is to separate impurities through the drainage system before feeding to the milling process.

The key factor for the drying process of brown rice flour is to bake it at the suitable high temperature to kill the bacteria and disinfect. At the end of the line production will be the finest brown rice grain as a premium wellness product.

### Pros & health benefits of brown rice

Brown rice can be used as a substitute for wheat among many other types of crops. It is a type of grain that contains lots of fibre and is also gluten free. It can be processed as brown rice flour and used to bake as well.

It also has fibre, calcium and protein that benefit your health. People can just use brown rice flour to bake both cake and other types of baked food. Brown rice flour works best in bread, muffins and cookies.

This is also a type of flour that is derived from brown rice can help to reduce the risk of some diseases. It has phenolic acids that have the potential to reduce obesity and cancer in some cases as such acids contain chemo-preventative properties for breast and colon cancers.

Another pro is that brown rice flour through a wet milling method contains no unhealthy fats. whole grains reduce the risk of coronary heart disease and cardiovascular disease as its ability to lower cholesterol. It will also make your digestive process better as it contains high fibre. With all of this coming together, this type of grain can also assist with weight dieting in some cases.

### A good substitute

In summary, the key difference between wheat flour and brown rice flour is that brown rice flour is gluten-free while wheat flour contains it. Many people have problems with gluten, with gluten being a wheat protein that can cause an allergic reaction as it irritates the digestive system.

Brown rice flour can definitely be a good substitute as it can be used as the main type of ingredients for westerners and Asians which are bread, pasta, rice and noodle. If wheat shortage really becomes a problem in the future, at least we have an alternative for it there.

In today's world, nutritionists and developers in food technology are researching and developing brown rice flour by wet milling method in terms of rheology by deforming of the viscosity, starching the stabilisation and improving the variety of recipes for using brown rice flour as a substitution of wheat flour in bakery and food industries. On top of that, the consumers can get the benefits from this kind of premium wellness product as well.

### Advantage of brown rice flour in the wet milling method

- It is a premium wellness product.
- Brown rice flour from the whole brown rice grain contains lots of properties and nutritious ingredients including bran, fibre, fat, carbs, protein, sugar, high calories but low sodium.
- Brown rice flour in the wet milling method makes the finest size of brown rice flour in 150 microns which has soft and high-quality texture.