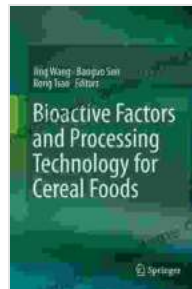


Bioactive Factors and Processing Technology for Cereal Foods: Unlocking the Power of Whole Grains

Cereal foods, such as bread, pasta, and breakfast cereals, are a staple in the diets of people around the world. They are a good source of carbohydrates, fiber, vitamins, and minerals. However, the processing of cereal foods can often remove or damage the bioactive factors that are found in whole grains.



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Bioactive factors are compounds that have a positive effect on human health. They include antioxidants, phytochemicals, and fiber. These compounds have been linked to a reduced risk of chronic diseases such as heart disease, cancer, and diabetes.

The processing of cereal foods can remove or damage bioactive factors in a number of ways. For example, milling can remove the bran and germ, which are the parts of the grain that are richest in bioactive factors. Cooking

can also destroy bioactive factors, especially if it is done at high temperatures.

Bioactive Factors in Cereal Foods

The following are some of the most important bioactive factors found in cereal foods:

- **Antioxidants:** Antioxidants help to protect cells from damage caused by free radicals. Free radicals are unstable molecules that can damage DNA, proteins, and lipids.
- **Phytochemicals:** Phytochemicals are plant-based compounds that have a variety of health benefits. Phytochemicals have been linked to a reduced risk of cancer, heart disease, and diabetes.
- **Fiber:** Fiber is a type of carbohydrate that the body cannot digest. Fiber helps to regulate blood sugar levels, reduce cholesterol levels, and promote regularity.

Processing Technology for Cereal Foods

There are a number of processing technologies that can be used to preserve and enhance the bioactive factors in cereal foods. These technologies include:

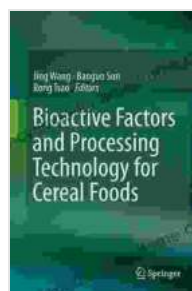
- **Milling:** Milling is the process of removing the bran and germ from the grain. However, there are new milling technologies that can be used to remove the bran and germ without damaging the bioactive factors.
- **Cooking:** Cooking can destroy bioactive factors, but there are new cooking technologies that can be used to minimize the damage. These technologies include microwave cooking and sous vide cooking.

- **Extrusion:** Extrusion is a process that uses heat and pressure to shape and cook cereal foods. Extrusion can be used to create a variety of cereal products, such as breakfast cereals, pasta, and snacks. Extrusion can also be used to enhance the bioavailability of bioactive factors.

The processing of cereal foods can have a significant impact on the content of bioactive factors. However, there are a number of processing technologies that can be used to preserve and enhance the bioactive factors in cereal foods. These technologies can help to promote human health and well-being.

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