

New vegetarian food with several benefits

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A new vegetarian food that boosts the uptake of iron and offers a good set of proteins. This could be the result of a doctoral dissertation by Charlotte Eklund-Jonsson at the Department of Food Science, Chalmers University of Technology, in Sweden.

The food, called tempe, is moreover a whole-grain product with high folate content. It is generally accepted in medicine that whole-grains reduce the risk of cardiovascular diseases, and it is also believed that it protects against age-related diabetes and certain forms of cancer. The B vitamin folate is the natural form of folic acid and, among other things, is necessary for normal fetal development.

“Tempe is designed for vegetarians, but also for people who want to eat less meat for environmental reasons, for example,” says Charlotte Eklund-Jonsson. “We also had the environment in mind when we chose to base it on barley and oats, which are suitable to cultivate in Sweden and therefore do not require long transports.”

Tempe is produced through fermentation with the aid of the micro fungus *Rhizopus oligosporus*. Tempe fermentation originates from Indonesia, but soybeans are used as the raw material there.

In her work, Charlotte Eklund-Jonsson developed methods to preserve the high fiber content of the cereal grains and at the same time to enhance their content of easily accessible iron. Normally these two considerations work against each other.

The findings show that the uptake of iron doubled after a meal of barley tempe compared with unfermented barley. In other studies both oat and barley tempe moreover produced low blood sugar responses and insulin responses, which is typical of whole-grain products.

The dissertation is titled “Nutritional properties of tempe fermented whole-grain barley and oats - Influence of processing conditions on the retention and availability of iron, starch and folates”.

Source: Swedish Research Council

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