

## Tartary Buckwheat in Human Nutrition

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Tartary buckwheat (*Fagopyrum tataricum* Gaertn.) originates in mountain areas of western China, and it is mainly cultivated in China, Bhutan, northern India, Nepal, and central Europe. Tartary buckwheat shows greater cold resistance than common buckwheat, and has traits for drought tolerance. Buckwheat can provide health benefits due to its contents of resistant starch, mineral elements, proteins, and in particular, phenolic substances, which prevent the effects of several chronic human diseases, including hypertension, obesity, cardiovascular diseases, and gallstone formation. As buckwheat does not contain the gluten proteins, it is used as food for people with celiac disease. The balanced amino-acid composition of buckwheat proteins represents an important source of dietary protein for people who maintain vegetarian or vegan diets. The contents of the flavonoids rutin and quercetin are very variable among Tartary buckwheat samples from different origins and parts of the plants. Quercetin is formed after the degradation of rutin by the Tartary buckwheat enzyme rutinoidase, which mainly occurs after grain milling during mixing of the flour with water. High temperature treatments of wet Tartary buckwheat material prevent the conversion of rutin to quercetin.

Tartary buckwheat is a low-input plant, feasible to be grown as an organic and organic and ecological crop, with little need for addition of artificial fertilizers, or of chemical treatments. The possibility to develop new food products, based on old culinary traditions, is under re-evaluation through contemporary scientific knowledge of the quality and potential of Tartary buckwheat.

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