Special Issue

Breeding Buckwheat for Nutritional Quality

Message from the Guest Editors

Dear colleague,

Common buckwheat (Fagopyrum esculentum Moench) and Tartary buckwheat (Fagopyrum tataricum (L.) Gaertn) have traditionally been used in human nutrition. Efforts have been made to improve the nutritional value of buckwheat by breeding. Flavonoids and other phenolic substances from buckwheat are important to preserving health; however, they may negatively affect the digestion of protein and starch in common and Tartary buckwheat. Breeding that diminishes the concentration of polyphenols and anti-nutritional substances might have detrimental effects on the resistance of plants to pests, diseases, and UV radiation. Bread and pasta from both species of buckwheat are popular dishes. During dough-making, most of the rutin is degraded to quercetin by rutin-degrading enzymes. The new trace-rutinosidase variety of Tartary buckwheat makes it possible to make bread with a considerable amount of rutin and that preserves the initial amount of rutin in the grains. Breeding common and Tartary buckwheat for embryos with a larger size would make it possible to increase the amounts of protein, rutin, and essential minerals in buckwheat grains.

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