

Abstract

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Title of Thesis: Antiradical activity of extracts of *Fagopyrum esculentum* Moench leaves and seeds.

Representatives of the genus *Fagopyrum* (*Polygonaceae*) contain many substances of high nutritive value, such as proteins, dietary fibre, vitamins and flavonoids and therefore buckwheat is often used as food. It is the major dietary source of rutin, flavonoid which is used for treatment of fragility and permeability of blood vessels. The content of rutin in samples of *Fagopyrum esculentum* was determined. The highest amount was detected in buckwheat leaves (4.93%). Significantly lower amount was found in whole and dehulled seeds, hulls, buckwheat flour and chips (0.01%). Buckwheat flakes didn't contain rutin.

Antioxidant activity is an important property of rutin. It is probably responsible for many biological effects of this flavonoid. This activity was evaluated by using free radical 2,2,-diphenyl-1-picryl-hydrasyl (DPPH method). Rutin and hyperoside were used as standards. Antioxidant activity decreased in this order: hyperoside ($IC_{50} = 0.0041$ mg/ml) > rutin ($IC_{50} = 0.0047$ mg/ml) > buckwheat leaves ($IC_{50} = 0.12$ mg/ml) > whole seeds ($IC_{50} = 2.71$ mg/ml) > dehulled seeds ($IC_{50} = 3.11$ mg/ml) > buckwheat flour ($IC_{50} = 4.16$ mg/ml) > hulls ($IC_{50} = 6.71$ mg/ml) > buckwheat flakes ($IC_{50} = 15.94$ mg/ml) > buckwheat chips ($IC_{50} = 22.55$ mg/ml).