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EXTRACTS OF JAPANESE QUINCE SEEDS – POTENTIAL SOURCE OF ANTIOXIDANTS

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Japanese quince (*Chaenomeles japonica*) is a minor fruit crop in Latvia and Lithuania; it is used for production of juice, aroma and fruit fibers. The seeds are by-products of food processing that could be used further for different purposes.

The seeds of Japanese quince contain about 10 to 20% of oil. The composition of this oil is quite unique: nearly 90% of it is formed by two fatty acids - linoleic (52.4%) and oleic (35.6%). We have also found out that the extracts of Japanese quince seeds can be used to improve stability of vegetable oils; 10% additive of ground seeds to rapeseed oil and 5% additive to hempseed oil can increase the oxidative stability of these oils about 2.0 and 1.6 times, respectively.Unfortunately, the seeds of Japanese quince contain also amygdalin - toxic cianogenic glycoside. Due to this compound the usage of seeds of Japanese quince are very limited, especially in case of their hydrophilic extracts.

Our research was focused on hydrophilic extracts of seeds in order to find out both the best method to prepare polyphenols rich extracts, as well as to determine the amount of toxic amygdalin in the ethanol/water extracts of seeds and in the extracted seeds. We have found out that the largest amount of total polyphenols can be obtained when whole seeds are extracted with the mixture of ethanol and water under reflux. The antioxidant activity of the prepared hydrophilic extracts were characterized by DPPH test.

Keywords: Japanese quince, seeds, antioxidants, polyphenols, amygdalin.

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