

Title           Antioxidant activity of Japanese pepper (*Zanthoxylum piperitum* DC.) fruit  
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#### **Abstract**

Antioxidants were extracted from Japanese pepper (*Zanthoxylum piperitum* DC.) fruit and characterized. The antioxidant activity of the methanol extract from Japanese pepper fruit was found to be equal to that of  $\alpha$ -tocopherol and stable under heat treatment. The main compounds that gave a significant antioxidant activity from the methanol extract were identified to be hyperoside (quercetin-3-*O*-galactoside) and quercitrin (quercetin-3-*O*-rhamnoside) as determined by HPLC, mass spectrometry, UV/Vis spectroscopy, and TLC. Radical-scavenging activities of hyperoside and quercitrin from Japanese pepper fruit were evaluated using the 1,1-diphenyl-2-picrylhydrazyl (DPPH) method. As a result, hyperoside and quercitrin scavenged DPPH radical strongly with  $IC_{50}$  values of 16 and 18  $\mu$ M, respectively. These observations show the presence of strong antioxidants, namely hyperoside and quercitrin in Japanese pepper fruit.