

P179

Quality and antioxidant characteristics of cooked rice the mixture of glutinous rice and cooking methods

Koan Sik Woo^{1*}, Kyung Ha Lee¹, Mi-Jung Kim¹, Jee Yeon Ko², Eun-Yeong Sim¹, Choon Ki Lee¹,
and Yong Hee Jeon¹

¹⁾ *Department of Central Area Crop Science, National Institute of Crop Science, Rural Development Administration, Suwon, Gyeonggi 16429, Korea*

²⁾ *Department of Southern Area Crop Science, National Institute of Crop Science, Rural Development Administration, Miryang 50424, Korea*

Abstract

This study was carried out to compare the cooking and antioxidant characteristics of cooked rice added at various rate of glutinous rice addition and treated with two cooking methods. Cooked rice added with glutinous rice was cooked by general and high pressure cooking method with and without fermented alcohol. Pasting characteristics of cooked rice were decreased as increasing the amounts of glutinous rice. Water binding capacity and swelling power were significant decreased with the amounts of glutinous rice increasing, however water solubility indices were significant increased. Palatability characteristics of cooked rice added with glutinous rice showed similar results to cooked rice without glutinous rice. Total polyphenol contents of cooked rice added with glutinous rice and fermented alcohol were significantly distinct, but there was no significant difference. Total flavonoid contents were increased as increasing the amounts of glutinous rice. Total flavonoid contents by general cooking method of cooked rice added with 20% glutinous rice and fermented alcohol were 23.20 ± 0.61 $\mu\text{g CE/g}$. DPPH radical scavenging activities added with and without glutinous rice were 2.97~5.19 and 3.19~5.45 mg TE/100 g, respectively. ABTS radical scavenging activities by high pressure cooking method of cooked rice added with 20% glutinous rice and fermented alcohol were 19.48 ± 0.63 mg TE/100 g. In this study, cooking and antioxidant characteristics of cooked rice added with glutinous rice were expected to be used as basic data on manufacturing processed products.

Keywords: glutinous rice, water binding capacity, eating quality, flavonoid, radical scavenging activity

Corresponding author*

Koan Sik Woo

Address : 126, Sunro, Gwonseongu, Suwon, Gyeonggido, 16429, Korea

Tel and Fax : +82-31-695-0616, +82-31-695-4085

E-mail : wooks@korea.kr