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# Variation of antioxidant activity in Korea-native weedy rice germplasm

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## Abstract

Brown rice grains are increasingly attended by consumers due to their potential health benefits of antioxidant capacity. Therefore, this research was carried out to evaluate the antioxidant activity of brown rice in Korea-native weedy rice germplasm. Two hundred and twenty one accessions of weedy rice used in this study were received from the National Agrobiodiversity Center of RDA, and were regenerated in the experimental field of Chonbuk National University. The sampled seeds were extracted using methanol and the extracts were analyzed using the 1, 1-dipheny-2-picrylhydrasyl (DPPH) free radical scavenging assay for antioxidant capacity determination. Among the all germplasm, the samples of seed coat in red colour, white colour, red -white mixing colour and brown colour were 171 (81%), 26 (12%), 12 (6%) and 2 (1%), respectively. The antioxidant activity values of all samples were varied in the range from 22.31% to 95.53 % and mean value was 82.09%. Depend on the seed coat colour, the average antioxidant activity of the extract of weedy rice seeds indicated that the following order in seed coat colour: red colour (89.11%) > the red-white mixing colour (70.67%) > brown colour (53.16%) > white colour (45.99%). The antioxidant activity of red coloured weedy rice were significantly higher than those of the others. It is suggested that Korea-native weedy rice accessions with high antioxidant activity could be developed as a potential functional food material by further research of component analysis.

**Keywords**: Antioxidant activity, Korea-native weedy rice, DPPH, Share-rice

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