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Relationships among polyphenol oxidase activity, total polyphenol and chemical composition from Korean Wheats.

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Polyphenols were once briefly known as Vitamin P and may have antioxidant characteristics with potential health benefits. But oxidation of phenolic compounds to o-quinones, which condense and react with other phenolic compounds and amino acids, produces discoloration. This study was carried out to determine the discoloration potential of Korea wheat, and to evaluate the relationship between discoloration potential of wheat and chemical composition, polyphenol content, and PPO activity. Flour color was 86.82~91.47 in L*, -0.88~-1.57 in a*, 7.49~11.15 in b*, respectively. Color of noodle dough sheet was 77.31~82.36 in L*, -1.55~-3.37 in a* and 15.84~21.56 in b*. PPO activity performed with L-DOPA assay and L-tyrosine was 0.086~0.445, 0.070~0.447 in A₄₇₅. In L-DOPA assay, Dahongmil, Namhaemil, and Alchanmil showed lower (<0.100) PPO activity than others. In L-tyrosine assay, Dahongmil and Chungkyemil showed lower (<0.100) PPO activity. The mean value of total polyphenol content was 1030.7 ug/g, ranged from 797.5~1357.6 ug/g. Cu and Fe ion content was 1.89~4.68 ug/g and 18.48~45.81 ug/g. Total polyphenol and Cu ion content significantly correlated with the discoloration potential of wheat.

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Cytotoxic Activity of Triterpenoids from Soybean Leaves (*Glycine max* (L.) Merr.)

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Phytochemicals study from the leaves of soybean (*Glycine max* (L.) Merr.), one of Korean edible plant materials were investigated through various chromatographic procedures. The methanolic leaves extract of soybean yielded sixteen phytochemicals, including two phenolic compounds **1** and **2**, two phytosterols **3** and **4**, and one sugar alcohol **5**. The structures were fully characterized by analysis of physical and spectral data and were defined clearly as 4-hydroxybenzoic acid (**1**), methyl-4-hydroxybenzoate (**2**), soyasapogenol B (**3**), stigmasterol (**4**), and D-mannitol (**5**), respectively. These components **1-5** were reported for the first time on the isolation and confirmation from the leaves of this plant. Especially, compound **3** showed cytotoxic activity against HT-59 human cancer cell line with IC₅₀ value of 62.9 ± 1.99 μM. It is suggested that soybean leaves may possess possible health related benefits to humans due to isolated components having potential effects on chronic diseases.

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