Phenolic Compound Analyzation of Thai Pigmented Rice

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Abstract: There are many rice varieties in Thailand and some varieties were ignored to consume especially the pigmented rice while it may contain some healthy compound. This research was aimed to analyze phenolic compound in four local pigmented rice varieties in Thailand. Four varieties of pigmented rice (*Oryza sativai* L.) including Sung-Yod rice (SYR), black jasmine rice (Hom-Nil rice, HNR), red jasmine rice (Hom-Dang rice, HDR) and black glutinous rice (Kum rice, KR), were studied for the phenolic compound. The non-polished grains of each varieties were extracted by acidic methanol (85% methanol: 15% 0.1 N HCl) mixture for 2 h. The pallets of each samples were extracted repeatedly then two parts of extracted solutions were combined. Each extracted solutions were evaporated and the crude extract were kept at 4 °C. Total phenolic content of the samples were analyzed by Folin-Ciocalteu assay and the phenolic compound for each crude extracts were identified by using reverse phase C-18 column chromatography with high performance liquid chromatography (HPLC). Vanillic acid, caffeic acid, syringic acid, *P*-coumaric acid, gallic acid and ferulic acid were used as standard phenolic compound for HPLC analysis. Total phenolic content, from Folin-Ciocalteu assay analyzation, in crude extracts showed minimum of 578 µg gallic acid/g and maximum 2,346 µg gallic acid/g on dry-weight basis. The HPLC analysis results revealed that different rice varieties are composed of different major phenolic compound. The major phenolic compound of SYR and HDR rice varieties were ferulic acid, HNR rice varieties were vanillic acid and KR rice varieties was *P*-coumaric acid. Among the four pigmented rice varieties, KR varieties contain the highest phenolic compound followed by HNR, HDR and SYR, respectively.

Key words: Pigmented rice, phenolic compound, Thai rice, high performance liquid chromatography (HPLC).