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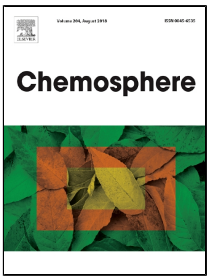

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Supanad Hensawang, Penradee Chanpiwat

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Analysis and Probabilistic Risk Assessment of Bioaccessible Arsenic in Polished and Husked Jasmine Rice Sold in Bangkok

Supanad Hensawang[1], Penradee Chanpiwat[2,3,*]

[1] Hazardous Substance and Environmental Management (Interdisciplinary Program), Graduate School, Chulalongkorn University, Bangkok 10330, Thailand

[2] Environmental Research Institute, Chulalongkorn University, Phayathai Road, Pathumwan, Bangkok 10330, Thailand

[3] Center of Excellence on Hazardous Substance Management (HSM), Phayathai Road, Pathumwan, Bangkok 10330, Thailand

[*] Corresponding author; E-mail: Penradee.C@chula.ac.th; Telephone: +66-2218-8215

16-digit ORCID of the corresponding author: 0000-0001-7625-0952

Abstract

Food is one of the major sources of arsenic (As) exposure in humans. The objectives of this study were to determine the bioaccessible concentration of As in rice grain sold in Bangkok and to evaluate the potential health risks associated with rice consumption. Polished (n=32) and husked (n=17) jasmine rice were collected from local markets. In vitro digestion was performed to determine the bioaccessible As concentrations, which were used for probabilistic health risk assessments in different age groups of the population. Approximately 43.0% and 44.4% of the total As in the grain of polished and husked rice, respectively, was in the form of bioaccessible As. Significantly higher bioaccessible As concentrations were found in husked rice than in polished rice (1.5 to 3.8 times greater). The concentrations of