

Antioxidant Properties of Rice Bran Oil Using Various Heat Treatments

Authors : Supakan Rattanakon, Jakkrapan Boonpimon, Akkaragiat Bhuangsaeng, Aphiwat Ratriphruek

Abstract : Rice bran oil (RBO) has been found to lower the level of serum cholesterol, has antioxidant and anti-carcinogenic property, and attenuate allergic inflammation. These properties of RBO are due to antioxidant compositions, especially, phenolic compounds. The higher amount of these active compounds in RBO, the greater value of RBO is. Thermal process of rice bran before solvent RBO extraction has been found to have a higher phenolic contents. Therefore, the purpose of this study is to using different heating methods on rice bran before the solvent extraction. Then, % yield of RBO, total phenolic content (TPC), and antioxidant property of two white Thai rice; KDML105 and RD6 were determined. The Folin-Ciocalteu colorimetric assay was used to determine TPC and scavenging of free radicals (DPPH) was used to determine antioxidant property expressed as EC50. The result showed that thermal process did not increase % yield of RBO but increase the TPC with 1.41 mg gallic acid equivalent (GAEmg-1). The highest TPC was found in KDML105 by using sonicator. The highest antioxidant activity was found in RD6 using autoclave. The EC50 of RBO was 0.04 mg/mL. Further study should be performed on different pretreatments to increase the TPC and antioxidant property.

Keywords : antioxidant, rice bran oil, total phenol content, white rice

Conference Title : ICC 2017 : International Conference on Chemistry

Conference Location : Osaka, Japan

Conference Dates : March 30-31, 2017