



Effect of drying temperature on antioxidant and antimicrobial activity of coffee pulp extract

Kotchakorn Limungkoon¹, Vorachote Duanghom¹, and Niramol Punbusayakul^{2*}

¹*School of Agro-Industry, Mae Fah Luang University, Thailand*

²*Department of Food Science, Faculty of Science, Burapha University, Thailand*

*e-mail: niramolp@buu.ac.th, pniramol2@gmail.com

The aim of this study was to investigate the effect of tray drying on antioxidant and antimicrobial activities of coffee pulp extract (CPE). Coffee pulp (CP) was dried at 70°C, 80°C and 90°C using tray dryer until the moisture content of sample reached 13 %. Then, the CP was extracted with water to obtain CPE70, CPE80 and CPE90, respectively. Bioactive compounds, antioxidant and antimicrobial activities against some pathogenic bacteria of the CPEs were determined and compared to those of the freeze dried sample. Total phenolic content of the CPE90 (2.45 ± 0.02 gallic acid equivalent (GAE) /100 g CPE db) was higher than that of the freeze dried (2.18 ± 0.04 GAE/ 100 g CPE db) and CPE80 (1.77 ± 0.02 GAE/ 100 g CPE db) and CPE70 (1.72 ± 0.02 GAE/100 g CPE db), respectively. The antioxidant activity of CPE90 (1300.59 ± 56.07 g trolox equivalent (TE)/ 100 g CPE db) was higher than that of the freeze dried sample (729.99 ± 30.82 g TE /100 g CPE db) and the CPE80 (568.54 ± 41.10 g TE /100 g CPE db) and CPE70 (545.68 ± 31.93 g TE/ 100 g CPE db), respectively. CPE80 (200 mg/ mL) exhibited the highest inhibitory effect against *Staphylococcus aureus*, followed by CPE70 and CPE90, respectively.

Keywords: Total phenolic compounds; Inhibitory effect; Pathogenic bacteria