

Antioxidant Activity of Crude Polyphenol Extract from Microwave Roasted Cocoa Bean

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Abstract

Microwave heating is faster than the conventional way, therefore it is interesting to apply this technology for cocoa roasting. This research aimed to analyze the effect of microwave roasting of ground cocoa nib on the antioxidative properties of the crude polyphenol extract from the product. The results indicated that microwave roasting of ground cocoa nib for 5 min, adjusted at 20% of the full power (900W) gave no significant difference in the inhibition of linoleic acid oxidation and scavenging of DPPH radical activity of the crude polyphenol extract compared to that of the conventional roasting at 140 °C for 40 min. But the product showed higher reduction of ferric ion activity and lower chelating ferro ion activity. The crude polyphenol extract inhibited linoleic acid oxidation and scavenged DPPH free radical. The inhibition was lower than that of either BHT or α -tocoferol at concentrations lower than 400 ug/ml for linoleic acid oxidation and lower than 40 ug/ml for DPPH free radical scavenging. The crude polyphenol extract reduced ferric ion, though lower than BH.

Key words : Cocoa bean, microwave, roasting, polyphenol, antioxidant activity.