

3.6 Radical Scavenging Activity of Phenolic Compounds of Coconut Cake

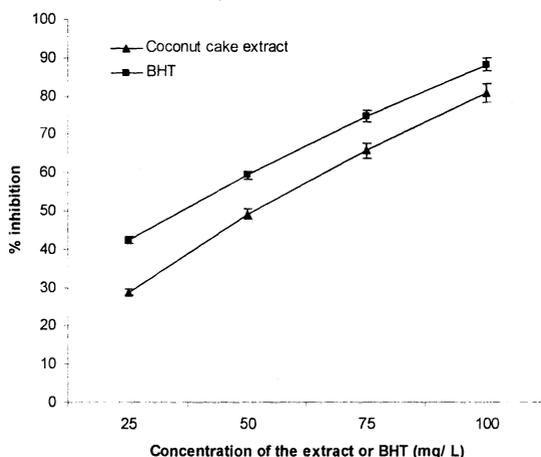
Kapila N. Seneviratne and Chamil D. Hapuarachchi
Department of Chemistry, University of Kelaniya, Sri Lanka

ABSTRACT

2,2-Diphenyl-1-picrylhydrazyl (DPPH) radical has been widely used to evaluate the free radical scavenging activity of natural antioxidants. Antioxidants react with DPPH radical, which is a stable free radical and convert it to 2,2-diphenyl-1-picryl hydrazine. The degree of discoloration indicates the scavenging activity of antioxidant extracts. In the present study, phenolic compounds of coconut cake were extracted using methanol : water (80 : 20 v/v) and the radical scavenging activities of the phenolic extracts and butylhydroxytoluene (BHT) against DPPH radical were determined spectrophotometrically in order to compare the antioxidant potential of the phenolic extracts of coconut cake. The change in color from deep violet to light yellow was measured at 515 nm using a UV/Visible spectrophotometer. Radical scavenging activity of the phenolic extracts was expressed as the percentage inhibition with respect to a control with no added phenolic extract.

Total phenol concentrations of the phenolic extracts measured by Folin-Denis colorimetric method were adjusted to a range of concentrations by suitable dilutions of the extracts with the methanol water solvent system. A similar concentration series was also prepared by suitable dilutions of BHT. Figure 1 compares the DPPH radical scavenging activity of the phenolic extracts of coconut cake with that of BHT.

Figure 1. DPPH radical scavenging activities of the phenolic extracts of coconut cake and BHT



There is lot of interest in recent times about the suitable alternatives for synthetic antioxidants. The above results indicate that the phenolic extracts of coconut cake are potential candidates for nontoxic natural antioxidants.