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EFFECT OF SOLVENT POLARITY AND EGGPLANT VARIETIES ON PHYTOCHEMICALS COMPOUNDS AND ANTIOXIDANT ACTIVITY OF PEEL EXTRACTS

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ABSTRACT

The effect of solvent polarity on the amount and type of phenolic and flavonoid compounds extracted from eggplant peel varieties as well as its antioxidant activity were studied. Three different solvent; n-hexan (P: 0.0), propan-2-ol (P: 3.9) and methanol (P: 5.2) and three eggplant peel (EPP) varieties; round black, long black and long purple were used in this study. The highest yield extracts were obtained by methanol compared with propan-2-ol and n-hexan in all three EPP varieties, but the total phenolic (TP), were 54.45-57.45 mg/g. as gallic acid equivalent (GAE)/g and total flavonoid (TF), were 81.02-88.43 mg/g. as catechin equivalent (CE/g) content in propan-2-ol extract higher than those in methanol extract (46.30-55.64 mg GAE/g and 47.76-71.08 mg CE/g, respectively); the difference being significant only in TF content. Phen-1,3-diol,4,5,6-trimethoxy-2-propionyl (1.43-15.16%) and 1-Naphthalenol (1.58-14.73%) were the major compounds identified by GC/MS/MS in propan-2-ol and methanol extracts, respectively. Both methanol and propan-2-ol extracts exhibited higher antioxidant activities, DPPH radical scavenging activity and ferric reducing power (FRP), than n-hexan extract, whereas propan-2-ol extract exhibited FRP higher than methanol extract. Among eggplant varieties, TP and TF compounds obtained from peel of round black were higher than these obtained from long black and long purple varieties in all three solvents. Therefore, it could be concluded that the recovery of phytochemicals compounds as well as its antioxidant activity depend on the solvent polarity and eggplant peel varieties. Methanol extract of round black eggplant peels was the best source for the phytochemicals compounds.

Key words: antioxidant activity, eggplant varieties, Solvent polarity, phenolic compounds.