Evaluation of phenolics, capsaicinoids, antioxidant properties, and major macro-micro minerals of some hot and sweet peppers and ginger land-races of Malaysia

ABSTRACT

There are compelling evidences that oxidative stress plays important role in age-related neurodegenerative diseases and natural food-derived dietary antioxidants appear to be the first line of defence to take care of the oxidative stress. The analysis results of this study showed that Cili Burung of the hot pepper landraces contained the highest amount of TPC (1.00 mg/g DW), TFC (0.17 mg/g DW), capsaicinoids (0.05 mg/g), and the highest FRAP activity (439 mg/g DW). However, DPPH assay revealed the highest DPPH scavenging activity (IC50 = 250 µg/ml) in Halia Bara rhizome. Rhizomes of both landraces of ginger showed a significant amount of capsaicinoids. Hot pepper Cili Ungu (5.50 g/kg) and sweet pepper Cili Kulai had the highest P contents (~5.5 g/kg). Halia Bentong ginger rhizome had the highest content of K (33.84 g/kg); however, Halia Bentong ginger roots had remarkably greater contents of Ca (10.96 g/kg). Ginger rhizomes and roots had greater contents of micro minerals compared to hot and sweet chili peppers. Ginger roots contained good amounts of bioactive compounds and mineral nutrients indicating its commercial value.