Antioxidant activity of fresh and dried *Phyllanthus fraternus* Webster (Euphorbiaceae) plant materials were evaluated using 2,2-diphenyl-1-picrylhydrazyl (DPPH). Antioxidant properties of methanolic extracts from shed dried plant showed strong free radical scavenging activity where inhibition (%) observed in aerial parts was 62.89 ± 0.027. The IC$_{50}$ value of the aerial portions of the plant is 56.12 ± 0.050 where as catechin is 50.51 ± 0.022 at 20µg/ml. Total Phenol and Flavonoid of the methanolic extracts were estimated. Total phenolic content measured by Folin Ciocalteu reagent in terms of catechol equivalent content was 280mg ± 0.035. The total flavonoid content in the *Phyllanthus fraternus* was also determined by spectrophotometrically and calculated as quercetin equivalent content was 75.540.027. Plant phenolics are highly effective for free radical scavengers and exhibit strong antioxidant activity. Result suggests that the plant has great potential in the drug industry as functional drug ingredient.

**Key words:** *Phyllanthus fraternus*, Antioxidant, free radicals scavenging, Phenols, Flavonoids, 2, 2-diphenyl-1-picrylhydrazyl (DPPH).

**INTRODUCTION**

Antioxidant research is an importance topic in the medical field as well as in the food industry. Recent research with important bioactive compounds in many plant and food materials have been received much attention. The oxidation induced by reactive oxygen species (ROS) can result in cell membrane disintegration, membrane damage and DNA mutation, which can further initiate or propagate the development of many diseases, such as cancer, liver injury and cardiovascular diseases (Liao and Yin, 2000). Free radicals and other reactive species present in the body can be generated both endogenously and exogenously. Oxidative damages caused by free radicals to living cells mediate the pathogenesis of many chronic diseases, such as atherosclerosis, Parkinson’s disease, Alzheimer’s disease, stroke, arthritis, chronic inflammatory diseases, cancers and other degenerative diseases (Halliwell & Grootveld, 1987). Under normal circumstances, the free radicals generated in the body can be removed by the body’s natural antioxidant defenses, e.g. glutathione peroxidase, catalase, and superoxide dismutase (Arumugam, 1994). Endogenously produced antioxidants are not enough to protect the cumulative effects of oxidative damage caused by ROS that remained in our system. Adequate antioxidants are required to inhibit the chain reaction of oxidation be supplied as natural or synthetic food additives. However, synthetic antioxidants have many side effects (Madsen and Bertelsen, 1995). Hence, plant based natural antioxidants have been supplied to our system