

Antioxidant Activity in Aqueous Extracts of Fruit of *Phyllanthus Emblica* Stored for Six Months in Different Storage Condition.

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Free radicals contribute to more than one hundred disorders in humans including atherosclerosis, arthritis, and ischemia reperfusion injury of many tissues, central nervous system injury, gastritis, cancer and AIDS. Under physiological conditions, a widespread antioxidant defense system protects the body against the adverse effects of free radical production. Indigenous systems of Medicine, the fruits of *Phyllanthus emblica* are widely used in preparation of drugs. It is widely used as Kayakalpam (Anti ageing). The objective of this study was to evaluate the Antioxidant activity of the Fruits of *Phyllanthus emblica*. The cold and hot extracts were prepared from the powder of *Phyllanthus emblica* stored at room temperature (37 °C) and at 4°C in monthly interval for six months. The free radical scavenging of Fruits of *Phyllanthus emblica* extracts (Duplicates) evaluated by DPPH assay according to the method described by Blois (1958). The absorbance measured at 517nm with uv- vis spectrophotometer. The initial TAC of cold and hot water extracts IC 50 value was 17.8, 14.1 µg/ml dry weights respectively. When the powder was stored at room temperature for a month and the TAC was analyses, the cold and hot water extracts contained IC 50 value 29.9, 24.41 µg/ml dry weights respectively. TAC of cold and hot water extracts contained IC 50 value was 240.1, 188.1, µg/ml dry weight respectively, when the powder was stored at room temperature for 6 months, While the TAC of cold and hot water extracts of the *Phyllanthus emblica* powder stored at 4°C for six months respectively IC 50 value was 209.5, 163.1 µg/ml dry weight. Extraction of antioxidant activity was better with hot water than with cold water. When compared with the cold extracts, hot extracts contained higher DPPH radical scavenging activity. DPPH radical scavenging activity was retained better at 4°C than at Room temperature. DPPH radical scavenging activity decreased with the storage period at both temperatures, but decrease in DPPH radical scavenging activity was higher at room temperature than at 4°C. This study showed that the *P. emblica* powder could be used for 'Chooranam' preparation immediately after the preparation of the *P. emblica* powder. Under emergencies, the powder stored for three months at room temperature could be used, but not the powder preparation stored for more than three months. However freshly prepared powder is recommended for the preparation of the 'Chooranam'.

Keywords: DPPH radical scavenging activity, *Phyllanthus emblica*, Total antioxidant capacity, Siddha medicine