

Retention of Physicochemical and Antioxidant Properties of Dehydrated Bael (*Aegle marmelos*) and Palmyra (*Borassus flabellifer*) Fruit Powders

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Present study was carried out to evaluate the effect of various dehydration techniques such as sun drying, solar drying, drying after freezing (Freeze for one hour followed by mechanical drying at 55°C), vacuum drying and drying using lab scale air oven on proximate composition and retention of antioxidants in different fruit powder prepared from Bael (*Aegle marmelos*) and Palmyra (*Borassus flabellifer*). Moisture content, Total Ash, Crude fiber %, Fat %, Crude protein %, total phenolic content, β -Carotene and antioxidant activity were tested. The antioxidant activity was measured based on the ability of fruit extract to scavenge 1, 1-diphenyl-2-picrylhydrazyl (DPPH). Among different drying treatments the highest fat percentage recorded by the solar dried palmyra fruit powder and there is no significant difference ($\alpha=0.05$) between sun drying and vacuumed drying. Higher concentration of β -Carotene and total phenolic content were recorded in vacuum dried samples both in bael and Palmyra fruit powders and it significantly different ($\alpha=0.05$) from other treatments. The scavenging activity of bael fruit powder in vacuum drying was ranged from 65.36% to 81.33% of the concentration 200 $\mu\text{g/ml}$ to 1000 $\mu\text{g/ml}$ and the palmyra fruit powder was recorded 57.32% to 83.25% of the concentration 200 $\mu\text{g/ml}$ to 1000 $\mu\text{g/ml}$. Vacuum dried fruit powders of palmyra and bael were given highest radical scavenging activity and the scavenging activity of palmyra fruit powder is higher than the bael. Therefore vacuum drying can be recommended as the most effective drying method to protect chemical characteristics and retention of antioxidant properties of fruit powders.

Keywords: *Antioxidant activity, Dehydration, Palmyra, Proximate compositions, Total phenolics*