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RESEARCH PAPER

Antioxidant and reducing activities of bael (*Aegle marmelos* Linn.) extracts

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SUMMARY : Bael has been known to India from prehistoric times. A study was undertaken to assess various solvent extracts from different parts of bael for their antioxidant and reducing power activities. The crude extracts of three different parts such as pulp, rind and seed with five solvents namely hexane, chloroform, ethyl acetate, acetone and methanol were examined for the antioxidant activity by DPPH radical scavenging method. It was found that methanol extract has given highest activity when compared to other extracts. Chloroform extracts have shown least activity and hexane extracts have shown no activity. Between the freeze-dried and oven dried extract of methanol, freeze dried extracts showed good activity (53.09%) compared to oven dried extracts (51.09%). IC_{50} value of DPPH radical scavenging activity of methanol extract has showed the highest activity and lowest concentration was found in freeze dried pulp (83.82 µg / ml), rind (109.52 µg/ ml) and seed (121.32 µg/ ml) when compared to oven dried pulp, rind and seed. The crude extracts of ethyl acetate, acetone and methanol which have shown good antioxidant activity were subjected to total reducing power assay. All the extracts have shown increased reducing power when concentration was increased. Among the drying methods *i.e.*, freeze and oven, freeze dried extracts shown good activity.Total reducing power of the methanol extract of oven dried and freeze dried pulp, rind and seed, exhibited increase in total reducing power with increase in concentration. There was no significant difference in total reducing power between oven dried and freeze dried extracts. The total reducing power of these samples could be due to the presence of high poly phenols.

Key Words : Oranges, Bael, Extracts, Antioxidant, Reducing power activity

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Bael (*Aegle marmelos* Linn.) is the underutilized fruit used in India dates back to several thousand years. Mention has been made in Ayurveda for it's therapeutic uses as on astringent and in treatment of diorrhoea, dysentery etc. There has also been ample of evidence in literature proving the efficacy of pulp, leaves, roots, stem bark against diabetes, cancer, ulcers, fertility control etc., The ripe fruit is laxative and unripe fruit is prescribed for diarrhoea and dysentery. Dyspepsia it has a great demand from Indian system of medicine such as Ayurveda (Kirtikar and Basu, 1933 and Satyavati *et al.*, 1976). Bael root was used for its anti diorrhoetic activity (Pitre and Srivastava, 1987). Aqueous decoction of bael root is reported to have hypoglycemic activity (Karunanayake *et al.*, 1987). Root bark of this plant has been used particularly in intermittent fevers and also as a fish poison (Basu and Sen, 1974). The juice of leaves along with black pepper is given for diabetes. The leaves are also given in Jaundice (Chakraborthi, 1988; Alam, 1990 and Ponnachan, 1993). With respect to clinical applications, roots are astringent, bitter and febrifuge. They are useful in diarrhoea, dysentery, dyspepsia, stomachalgia (Shoba and Thomas, 2001), cardioplamus, seminal weakness, vomiting, intermittent fever and swelling. The leaves are useful as laxative

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