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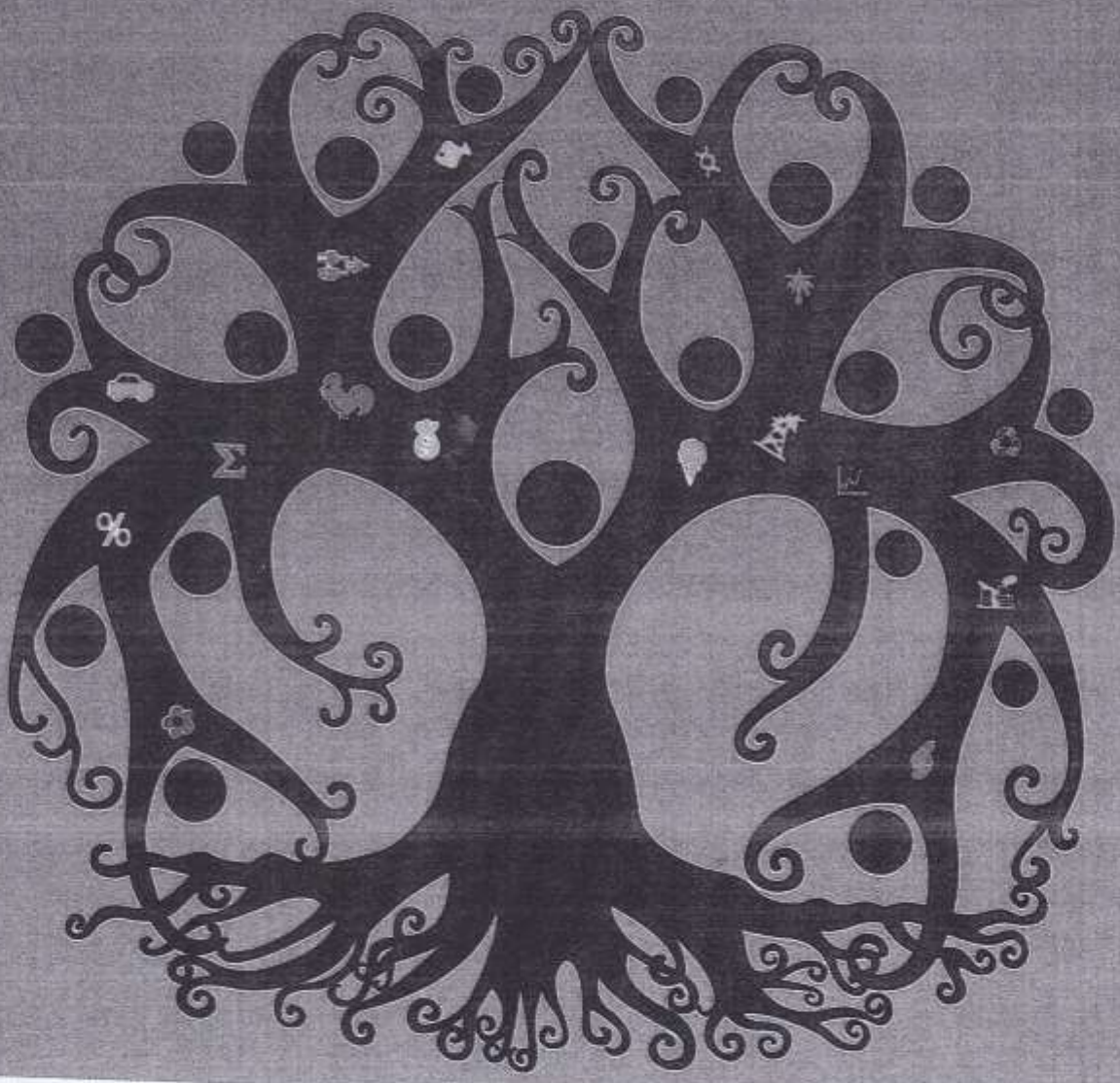
Managing systems from source to sink: current theories and applications



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Antioxidant activity of aqueous extracts of *Murrya koenigii* stored for six months at room temperature and at 4 ° C

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The leaves, barks and the roots *of Murrya keonigii* are used as a tonic, stomachache, stimulant and carminative. The objective of this study was to determine antioxidant activity of aqueous extracts of leaves of *M. koenigii*. Leaves were dried under shade at room temperature to constant weight, powdered and sieved. Antioxidant activity was estimated in the cold and hot aqueous extracts of the *M. koenigii* leaf powder stored at room temperature and at 4 °C in monthly interval for six months. The cold and hot aqueous extracts using stored powder were prepared at monthly interval.A 100 mg of dry powder of the leaves of *M. keonigii* were dissolved in 10 mL of distilled water and one part was kept in room temperature and other part was kept in water bath at 100 ^{0}C for 5 minutes. Then these were centrifuged at 10,000 rpm for 10 minutes. Supernatant was taken from the centrifuged extract for analysis. The free radical scavenging activity of plant extracts was evaluated by 1, 1- diphenyl-2-picrylhydrazyl (DPPH) assay. The cold and hot aqueous extracts of the dried powder possess antioxidant capacity. When compared with the cold extracts of leaves of *M. keonigii* powder with hot extracts, hot extracts contained higher antioxidant capacity than cold extracts. The cumulative loss of antioxidant capacity at room temperature on 3rd and six months IC 50 values were (IC 50 inversely proportional to antioxidant activity) (1738.5, 1404.2), (7040.1, 5918.3) *µg*/ml dry weight respectively in cold and hot aqueous extracts. The cumulative loss of antioxidant capacity at 4° C on 3rd and 6th months IC 50 values were (1308, 1083.1), (5907.8, 5229.1) *µg*/ml dry weights, respectively in cold and hot aqueous extracts. 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. With the storage period, the DPPH radical scavenging activity decreased from first month to 6th month at both temperatures, but decrease in DPPH radical scavenging activity was higher at room temperature than at 4 °C.

Keywords: Antioxidant activity, DPPH radical scavenging activity, *Murrya keonigii*