Cytotoxicity studies on some traditional greens consumed in Sri Lanka

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Greens play a significant role in the Sri Lankan diet and provide a major source of vitamins and minerals for the local consumers. Sometimes, on account of various reasons, scientific and other, certain herbs have been deleted from the diet and new ones added. Information as well as mis-information plays a major role in this process. Hence, there is a vital need to educate the general public on their choice of greens for consumption which necessitates a scientific evaluation of their nutritional properties as well as potential toxic effects. The present investigation was focused on cytotoxicity studies of greens and culinary herbs to generate the desired information.

Water extracts of traditional greens were tested for cytotoxic activity using brine shrimp (*Artemia salina*) lethality bioassay. As anticipated most of the plant extracts such as *Centella asiatica* (Gotukola), *Ipomoea aquatica* (Kangkung), *Sesbania grandiflora* (Kathuru Murunga), *Murraya koenigii* (Karapincha), *Basella alba* (Nivithi), *Passiflora edulis* (Passion), *Dregea volubilis* (Kirianuga), *Cardiospermum halicacabum* (Pennela), *Solanum nigrum* (Kalukamberiya), *Vernonia cinerea* (Monarakudumbiya), *Acalypha indica* (Kuppameniya), *Asparagus falcatus* (Hathawariya), *Costus speciosus* (Tebu), *Lasia spinosa* (Kohila), *Coriandrum sativam* (Coriander), *Mentha viridis* (Minchi), *Carum petroselinum* (Parsley), *Amaranthus viridus* (Kura) and several others did not show cytotoxic activity. On the other hand, some of the greens which are very popular among local consumers have shown lower LC_{50} values, indicating significant cytotoxicity and suggesting a potential health risks in consuming them. Of them *Alternanthera sessilis*, locally known as Mukunuwenna showed considerable cytotoxicity. This herb is very popular among the Sri Lankans because of its' taste and comparatively low cost and large quantities often being consumed in a single meal. Therefore, there is an important need for more investigations on toxicological aspects to evaluate their potential health risks to human beings. Further water extracts of *Polyscias scutellaria* (Koppa kola) and *Sauropus androgynus* (Malla) which are less popular greens also showed cytotoxic activity. These results indicate that further toxicity studies should be carried out using cell lines and *in vivo* models to investigate their potential health risks.

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