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# Allelopathic activity of some edible fruit extracts against *Lactuca sativa*

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Both synthetic herbicides and fertilizers can exert harmful effects on the environment and consequently affect the health of humans and other animals. Therefore, the focus is on environmental friendly, cost effective, toxicologically safe and biodegradable alternatives to synthetic herbicides and fertilizers. Hence, this study was designed to find out the allelopathic activity of some popular edible fruit extracts. Edible parts of five popular edible fruits of Sri Lanka: *Citrullus lanatus, Limonia acidissima, Nephelium lappaceum, Passiflora edulis and Phyllanthus emblica* were separately crushed or blended and filtered. Residue was sequentially extracted into n-hexane (RH), ethyl acetate (RE) and methanol (RM) by sonication for 30 minutes. Sonication was triplicated. Filtrate was successively partitioned with n-hexane (JH) and ethyl acetate (JE). The resulting aqueous phase was freeze-dried (JW). Ten Lactuca sativa seeds were placed on each 90 mm Petri plate lined with a filter paper. Then the filter papers were moistened with 3 mL of extract in 1%DMSO/distilled water and labeled respectively. Seeds were allowed to germinate and grow at dark for 5 days at room temperature. Number of germinated seeds was counted and percentage germination inhibition was calculated with respect to negative controls. If germination was not inhibited, the length of shoots and roots of germinated seeds were measured and percentage growth inhibition was calculated. 1% DMSO/ distilled water was used as the negative control. Seed germination was inhibited by JH extract of *C. lanatus* and JE extracts of *C. lanatus* and *L. acidissima*. Their $IC_{50}$ values were 395, 498 and 766 ppm respectively. Significant inhibition of root elongation was showed by RE and JW extracts of *P. edulis*, RE, JE and JW extracts of *P. emblica* with respective $IC_{50}$ values of 635, 804, 929, 1008 and 984 ppm. Apart from above, other extracts did not show promising effects on germination or growth. Fruit pulp of *C. lanatus, L. acidissima P. edulis,* and *P. embelica* contain phytotoxins. It is worth to subject these extracts to activity guided fractionation to isolate phytotoxic constituents.

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