

A study on allelopathic effect of *Lantana camara* L. (Gandapana) on seed germination and cotyledon expansion of *Ludwigia decurrens* Walt. and *Ludwigia hyssopifolia* (G. Don) Exell (Wel Karabu)

T M S S De Silva* and S M W Ranwala

Department of Plant Science, Faculty of Science, University of Colombo, Colombo 3

Gandapana (*Lantana camara* L.) is an invasive shrub belonging to Family Verbenaceae. However, it is used as mulch in paddy fields. Allelopathic effect of *L. camara* on agricultural crops have been reported but its effects on weeds have been poorly investigated. The objective of the present study is to determine the effect of allelochemicals in a crude extract of *L. camara* on germination and cotyledon expansion of *L. decurrens* and *L. hyssopifolia* seeds.

Composite samples of mature leaves of *L. camara* were used to prepare an aqueous extract of 1:5 (w/v) by soaking ground leaves in distilled water for 7 days at 10 °C. A portion of this solution was diluted using distilled water and a 1:10 v/v extract was obtained. Half of each extract was boiled. All solutions were stored at 10 °C. Distilled water was used as the control. Mature seeds were obtained from *L. decurrens* and *L. hyssopifolia*, separately. The experiment was arranged in a completely randomized design with 20 replicates. Ten seeds of each weed species were placed separately on

filter papers in separate petri plates which were moistened daily with *L. camara* extracts (boiled and unboiled) of different strengths given above. Germination was recorded and expansion of cotyledons of the seedlings was also observed for both species. Results were analysed separately for germination and cotyledon expansion of each species using a one way Analysis of Variance (ANOVA).

L. hyssopifolia was more sensitive to allelopathic effects of *L. camara* than *L. decurrens* since both the germination and cotyledon expansion of *L. hyssopifolia* were affected by the allelochemicals of *L. camara*. Among the high and low concentrations of *L. camara* extracts, the higher concentration of 1:5 w/v (boiled extract to a greater extent) was significantly found to be inhibitory for cotyledon expansion in both species affecting the seedling establishment of *L. decurrens* and *L. hyssopifolia* species.

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* colombolady@yahoo.co.uk

Tel: 011-2715072 (R)