

Assessment of allelopathic potential of naturally growing *Lantana camara* L. varieties

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Abstract

The weedy nature of *Lantana camara* L. is partly attributed to its allelopathic potential that reduces germination and growth of many crops and weeds. In Sri Lanka six naturally growing varieties of *L. camara* have been reported. They are varieties; camara, splendens, aculeata, mista, varia and alba. The present study aims to assess the allelopathic potential of *L. camara* varieties camara, splendens, aculeata, mista and alba through a laboratory bioassay using crude extracts of the test varieties and fresh Lettuce (*Lectuca sativa* L.) seeds. The objectives were to compare the final germination %, shoot and root development of Lettuce seeds exposed to extracts of test varieties prepared by soaking air dried leaves for 7 days at 10° C. Treatments included moistening of Lettuce seeds with equal volume of 1:5, 1:10, 1:20 *L. camara* extracts and distilled water (control). The experiment was conducted according to completely randomized design using 20 replicates for each treatment per test variety. Each replicate contained 10 Lettuce seeds kept on filter paper on 90 mm petri plate. Statistical analysis was conducted using Analysis of Variance (ANOVA) using SPSS software. Means were compared using Least Significant Difference (LSD) at 0.05 probability level. *Lectuca sativa* responded differently in the presence of crude extracts of different varieties of *L. camara*. The ANOVA identified significant differences among treatments, *L. camara* varieties and their interactions. The 1:5 w/v concentration of extracts obtained from all Lantana varieties totally inhibited Lettuce seed germination and the seed germination was increased by the 1:20 concentration of the extract obtained from all varieties. The 1:10 *L. camara* extract had the most suppressive effect on root and shoot development of Lettuce seedlings. The study indicated that almost all naturally growing varieties of *L. camara* possess strong allelopathic properties and their effects on Lettuce seed germination and seedling development significantly varied reflecting their genetic variability.