Phytotoxicity of *Lantana camara* on selected rice field weeds

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Lantana camara L. (Gandapana – Family: Verbenaceae) is a woody invasive plant that occurs throughout Sri Lanka. Its potential as a "green herbicide" has been identified in indigenous rice cultivation practices, but phytotoxic effects on weeds have been paid little attention. In this work, phytotoxic effects of *Lantana camara* on selected rice field weeds were quantified. The objectives were, to evaluate the phytotoxic effect of *Lantana camara* leaf residues on germination, vegetative and reproductive growth of selected rice field weeds and to determine the phytotoxicity on a most popular rice variety BG352.

Methodology included germination and growth experiments conducted using plastic trays and pots in green house conditions. Powdered *Lantana camara* was added to paddy soil 10 g/ pot (a pot contained 2 kg of paddy soil) which was used as the growing medium for germination and growth of some rice field weeds that often causes serious threat and yield loss of rice. These included grasses such as *Echinochloa crusgalli, Ischaemum rugosum, Leptochloa chinensis*, broad leaved *Commelina diffusa* and *Eclipta prostrata*. Germination characteristics of *Echinochloa crusgalli, Ischaemum rugosum, Leptochloa chinensis* seeds were monitored for 3 weeks. Two-week old weed seedlings of *Echinochloa crusgalli, Ischaemum rugosum, Commelina diffusa* and *Eclipta prostrata* and rice (variety BG 352) were used for growth experiment and their growth performances were monitored for 12 weeks. The biomass production was also compared at the end.

The germination percentage of *Ischemia rugosum* was significantly decreased by incorporation of *Lantana camara* powder. The growth of *Commelina diffusa* and *Eclipta prostrata* was significantly ($P < 0.05$) suppressed by *Lantana camara* by producing smaller plants, lesser number of leaves per plant and lower biomass. However, the shoot: root ratio of biomass was not affected by allelochemicals in *Lantana camara*. There was no growth suppression of the rice variety BG352 due to the presence of *Lantana camara* residues.

It seems that allelochemicals of *Lantana camara* are active against these weeds that would produce adventitious roots which mostly spread on top soil layers compared to species that would produce relatively deep root masses in rice field soil.

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