

04

### Phytotoxicity of *Lantana camara* L. (Gandaapana) residues on *Commelina diffusa* L. (Girapala)

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Previous studies have documented phytotoxic ability of weed *Lantana camara* (Gandapana) on rice field weeds, especially on some members of family Commelinaceae. The objectives of the present study were to determine the most effective strength/s of *L. camara* leaf residues (on weight basis) that would inhibit *Commelina diffusa* (Girapala) growing in paddy field soil and to determine the effective way of application of residues either as a top layer or as a mixture into the soil.

Paddy field soil filled into plastic pots was used as the growing medium. *L. camara* leaves were allowed to dry at room temperature, crushed into small pieces (approximately 0.1mm) and either mixed into soil or applied on to the soil in three different weights. 5, 10 and 20 g per pot. Pots without *L. camara* served as the control. Each treatment had 20 replicates.

*C. diffusa* plants raised from nodal cuttings were planted in those pots (two per pot) allowing two weeks for decomposition to initiate. Growth of *C. diffusa* plants were monitored for 12 weeks. Total length of stem and number of leaves per plant were recorded at weekly intervals. After 12 weeks the plants were uprooted and dry weights of roots and shoots of each plant were obtained.

Two way Multiple Analysis of Variance (MANOVA) from Statistica Version 6 was performed for repeated measurements obtained for 12 weeks such as the number of leaves and length of stem. Factorial Analysis of Variance (ANOVA) was used for total dry weight of *C. diffusa* plants.

Statistical analysis revealed that there was a significant suppression of growth of *C. diffusa* plants with respect to leaf production, stem length and dry weight when *L. camara* leaf residues were mixed into the soil than adding as a top layer on to the soil. Application of different weights of *Lantana* residues (5g, 10g, 20g) did not effect the growth of plants. There were no significant difference between the effects observed on the above parameters of the plant for different quantities (5, 10 and 20 g) of *L. camara* residues applied.