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Studies on allelopathic activity and weed suppression by leaf litter leachates of three invasive weed species

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Allelo chemicals leached from certain plants suppress the growth of other plants. The action of the leaf litter of three invasive weeds *Lantana camara*, *Wedelia trilobata* and *Clidemia hirta* on establishment of common weeds was tested to find out their allelopathic effect on other weeds. Surface soil collected from a weedy area put into aluminium trays were enriched with two rates of leaf litter (20g/tray and 40g/tray) of each invasive weed species and were incubated under net house conditions for the establishment of common weeds. Untreated control was maintained without addition of any leaf litter. Randomized complete design was used with four replicates. The number of weeds in each tray was counted at 2, 3, 4 and 8 weeks after initiation of the experiment. The allelopathic activity of leaf litter was expressed in terms of percentage reduction of the weed count when compared to the control. Both rates of leaf litters of three invasive weeds significantly reduced ($p=0.01$) the weed population compared to the control. Low rate and high rate of *Wedelia trilobata* reduced the weed population averagely by 47% and 81% respectively while *Lantana camara* reduced by 62% and 86% respectively during the period of 8 weeks. Low rates of *Clidemia hirta* reduced the weed population averagely by a slightly higher percentage (92%) than that of higher rates (83%). Leaf litters of three invasive weeds have negative impact on the natural weed flora. Further investigations on allelopathic effect using not only the leaf litters but also the other parts of more invasive and common weeds may help to develop a proper detection method of invasive weeds.

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