



## Growth performance of *Wedelia trilobata* in Matara District and its competition and allelopathic effect on *Axonopus compressus*

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Invasive alien plants have caused extensive economic and ecological damages throughout the world. Many coconut cultivated lands which dominated with grasses in Southern Sri Lanka have been invaded by recently introduced ornamental ground cover plant, *Wedelia trilobata*, and now it has become a big problem for the cattle feeding. Enough attention has not been focused yet to understand its vigorous growth and competition and hence the relevant information is not available in existing literature. A study on this weed is therefore very much important. No seed germination of *W. trilobata* was observed under laboratory conditions and therefore the rapid invasiveness was investigated throughout the vegetative propagation. Competitive ability of *W. trilobata* with the grass *Axonopus compressus* was studied under the green house conditions keeping the total plant density constant while changing the densities of the two components. Covering effect and allelopathic effect of *W. trilobata* on the grass and growth rate of each species was also studied. Fresh weight, dry weight, length of the stem and root, root/shoot ratio were taken as the measurements. With the increase of *W. trilobata* density, shoot length and root length of *A. compressus* were gradually decreased. Covering rate of *W. trilobata* varies in different locations. It spreads 62.86cm<sup>2</sup> month<sup>-1</sup>/m<sup>2</sup> in Deniyaya area compared to 51.71cm<sup>2</sup> month<sup>-1</sup>/ m<sup>2</sup> in Devinuwara. Considering allelopathic effect, 50gL<sup>-1</sup> of *W. trilobata* leaf extraction significantly affected the growth of *A. compressus*. These physiological parameters are advantageous to implement successful and efficient management programs for *Wedelia trilobata*.

**Keywords:** allelopathic effect, *Axonopus compressus*, *Wedelia trilobata*, competition

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