# Growth and phytochemical responses of Andrographis paniculata as influenced by different shade levels and prunings

ABSTRACT

Studies on growth and phytochemical responses to light intensities and cultural practices are useful measurements to determine the favorable habitat conditions for the cultivation of medicinal plants. The objective of this study was to determine the effect of shade level and pruning frequency to optimise high dry herbage yield per hectare of Andrographis paniculata with high phytochemical content. A factorial experiment was arranged in split plot design with three replications. The shade levels of 0, 20%, 30% and 50% were the main plots while number of pruning namely none, once and twice were the sub plots. Both factors of shade levels and pruning showed significant interaction effect on total leaf area, shoot fresh weight and shoot dry weight. Root fresh weight and dry weight were not influenced by both factors. Shoot fresh weight and shoot dry weight showed significant increase with the increase in shade levels. The lowest shoot dry weight was recorded for plant grown under full sunlight. Pruning frequency significantly produced higher shoot fresh weight by 18.6% and shoot dry weight by 15.4% compared to unpruned plant. There was a significant interaction effect on total phenolic content, total flavonoid and antioxidant content based on FRAP scavenging assay. It was observed that an increase in shade levels and pruning resulted in decrease of total phenolic and total flavonoid content. A. paniculata grown under shade and that had undergone pruning once showed higher biomass production.

**Keyword:** Andrographis paniculata; Light intensity; Method of pruning; Biomass production; Phytochemical content