

## **Growth and morphological responses of *Andrographis paniculate* to varying shade and nitrogen fertilization**

### **ABSTRACT**

*Andrographis paniculata* (Burm. f.) Nees is a traditional medicinal plant with valuable phytochemical and pharmacological potential. Growth and morphological responses to light and N can be useful measurements to determine favorable growing conditions for *A. paniculata*. Despite numerous findings on other medicinal and aromatic plants, there is little information about how light and N affect growth and morphology *A. paniculata*. The objective of this study was to determine the effects of shade and N on growth and morphological responses of *A. paniculata*. Plants were grown under two shade levels, 0% and 40%, and fertilized with five N rates, 90, 135, 180, 225 and 270kg ha<sup>-1</sup> in a nested design. Shaded plants grew taller with greater total leaf area, specific leaf area, leaf area ratio and net assimilation rate than sun-grown plants. Fertilizing plants with increasing rate of N has increased their height, leaf area index, total leaf area, shoot and root dry mass, leaf mass ratio and root shoot ratio. There was a quadratic relationship between N rate and total dry mass of plants. The goal in commercial *A. paniculata* cultivation is to produce high yielding high quality plants. Results showed that *A. paniculata* could adapt to varying levels of shade and N by altering its growth and morphology. Shading at 40% and fertilizing with 225kg N ha<sup>-1</sup> can increase growth and yield of *A. paniculata*.