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Bio-inoculants and vermicompost influence on yield, quality of *Andrographis paniculata*, and soil properties

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ABSTRACT

Andrographis paniculata is a source of diterpenoids and 2'-oxygenated flavonoids, which are of utility in pharmaceutical industry and ayurvedic formulations. With the aim of producing quality herb, an experiment was conducted with different combinations of bio-inoculants and vermicompost (VC) in controlled condition. It was observed that the highest Leaf:Stem (L:S) ratio, fresh herb yield and andrographolide yield (0.82, 300 g pot^{-1} and 29.8 g kg^{-1} dry herb, respectively) was recorded when the soil was incorporated with VC along with *Azotobacter chrococcum* (T_3). Further there was a significant improvement in all soil fertility parameters. However, when all the bio-inoculants (*A. chrococcum* + *Bacillus megaterium* + *Pseudomonas monteilii* + *Glomus intraradices*) were mixed with VC, there was a significant improvement in soil dehydrogenase, alkaline, and acidic phosphatase activity. A positive correlation coefficient ($p < 0.01$) could be derived amongst plant growth, yield and soil properties ($r = 0.45–0.85$). The study suggests that application of the bio-inoculants and organic fertilizers can enhance productivity while maintaining the desired quality of the herb.