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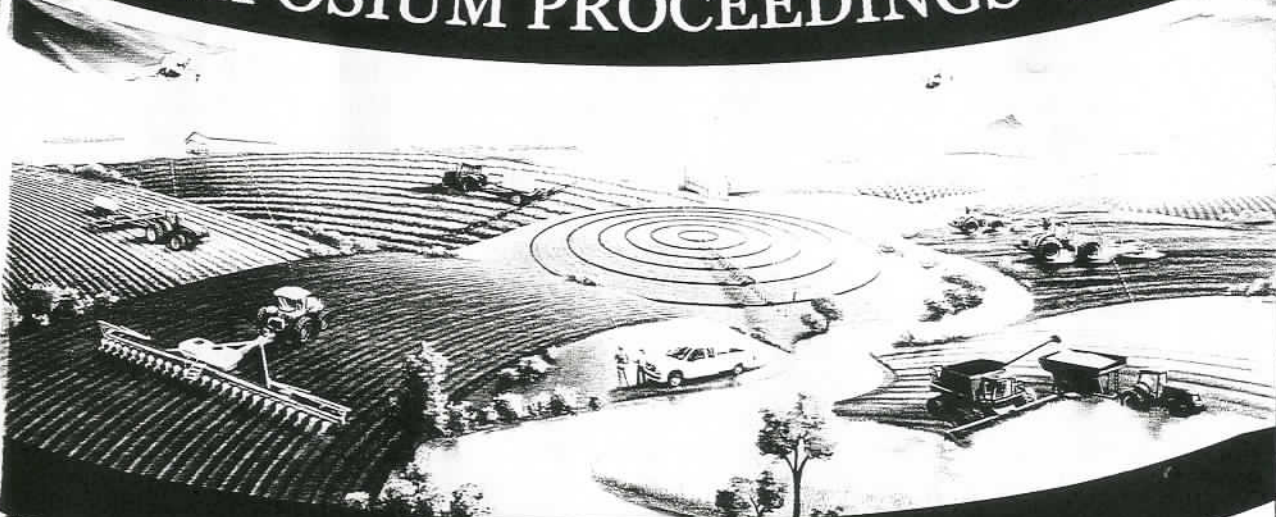


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Effect of compost and EXPERT™ fertilizer on the vegetative parameters of bush beans (*Phaseolus vulgaris* L.)

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ABSTRACT

A pot experiment was laid out in complete randomized design with seven treatments and three replications to evaluate the vegetative parameters of bush beans cv top crop. Treatments included applications of compost (1-2 kg/m² as basal) and expert™ fertilizer (20-30 g/m² (topdressing) at different levels. After 40 days of seeding, fresh and dry weights of leaves, roots and shoots, number of nodules and leaf area were measured and recorded. All the collected data were subjected to statistical analysis. The results revealed that 2 kg/m² compost with 30 g/m² expert fertilizer treatment had higher values in leaf area and plant biomass than other treatments and showed significant differences in most of vegetative parameters. This treatment was statistically similar in its effect on leaf area and plant biomass with 1.5 kg/m² compost and 30 g/m² expert fertilizer treatment. Nodulation was high in 1.5 kg/m² compost than that in 2 kg/m² compost along with 30 g/m² expert fertilizer. Therefore, it would be concluded that 1.5 kg/m² compost with 30 g/m² expert fertilizer application would increase vegetative and reproductive growth of beans than NPK fertilizer alone.

Key words: Compost, Expert Fertilizer, Nodulation, Vegetative growth

Introduction

In conventional agriculture, declining soil fertility is one of most important limitations to crop production (Cheminingwa *et al.*, 2004). NPK fertilizers mainly nitrogen fertilizer are commonly applied by the farmers to increase their crop production but this leads to greater environmental degradation (Tilman, 1999). Further, they apply excess amount of chemical fertilizers which is often associated with decrease of crop yield, nutrient imbalance and pollution of groundwater under intensive crop cultivation (Sridhar and Adeoye, 2003; Ayoola and Adeniyen 2006). Sufficient amount of macro and micro nutrients in the soil is required for better plant growth and development. Among micronutrients, Zinc and Boron play an important role in plant growth and development. Their deficiency can cause drop in seed formation and crop yield (Ziaeyan *et al.*, 2009).

Beans (*Phaseolus vulgaris* L.) are important vegetable in Sri Lanka. It can be grown vigorously if adequate amount of macro and micro nutrients are supplied to the crop. Animal manures and compost are commonly used to enhance soil fertility (Kimani *et al.*, 1998) and they can improve the water holding capacity and cation exchange