

A comparative study on the efficacy of herbals and biofertilizer as a nutrient source on the growth and yield of cluster bean (*Cyamopsis tetragonoloba* L. var. PNB)

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SUMMARY

The present report is an attempt to study the comparative effects of green leaf manures such as nochi, turmeric, vasambu, kuppaimeni, goose berry and biofertilizer on the germination, biometric, and yield parameters of cluster bean (*Cyamopsis tetragonoloba* L. var. PNB). The experiments were conducted at the Laboratory of Botany, Avinashilingam Deemed University, Coimbatore. The pots having 7 kg capacity were filled with soil and sand in the ratio 1:1. Fifteen seeds were sown in each pot containing red loamy soil and sand admixed with the above ameliorants. The dosage was as per the recommendations of Tamil Nadu Agricultural University, Coimbatore. Each treatment consisting of three replications were used for the experiment. The germination percentage was higher in biofertilizer soil treatment over control. From the investigation it was concluded that the treatment containing biofertilizer (*Rhizobium*), turmeric rhizome powder, vasambu rhizome powder and *Acalypha* leaf powder could be an ideal and suitable potting mixture for better seedling and crop production in cluster bean (*Cyamopsis tetragonoloba* L. var. PNB).

Key Words : Biofertilizer, Biometric, Cluster bean, Green manures, Yield parameters

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In India agriculture is the main occupation of majority of the population. The agricultural development depends on a number of factors like natural, economical and social and sub factors like climate, soil, use of advanced technology, labour factor and fertility status. Biofertilizers are eco-friendly organic agro-input and most cost effective than chemical fertilizers (Vessey, 2003). Instead of chemical fertilizers we can add green manure which provides all the nutrients required for plant growth.

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Green manures increase the percentage of organic matter in the soil, thereby improving water retention, aeration, and other soil characteristics. Hence, there is a great need for minimizing the dependence on chemical inputs by supplementing the plant nutrients with organic residues.

MATERIALS AND METHODS

An experiment was conducted to assess the manurial value of the following botanicals (Nochi, Turmeric, Vasambu, Goose berry, Kuppaimeni) and biofertilizer (*Rhizobium*). The impact of soil treatment on the growth attributes, quality parameters and yield components of cluster bean (*Cyamopsis tetragonoloba* L. var. PNB) was studied.

Collection of various materials:

The red sand loamy soil was collected from