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Research Article

Effect of INM on growth, yield and economics of garland chrysanthemum

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Summary

An experiment was conducted during 2009-2010 to study the effect of integrated nutrient management on growth, yield and economics of garland chrysanthemum. The present experiment consisted of nine treatments and three replications. Among all treatments, T_9 (*Azospirillum* + PSB + 50% vermicompost equivalent to RDN + 50% recommended NPK) recorded significantly higher plant height (87.00 cm), number of branches/ plant (39.61), plant spread (35.77 cm), total dry matter production (22.77 g/plant) and early flower bud initiation (25.13 days after transplanting) while the control recoded lowest growth and yield attributes. The treatment T_9 also obtained the highest net income and benefit:cost ratio (Rs. 1,95,135/ha and 4.23, respectively) which is closely followed by treatment (T_7) than compared to control.

Key words : *Azospirillum*, Garland chrysanthemum, PSB, RDF, Vermicompost

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Introduction

Garland chrysanthemum (*Chrysanthemum coronarium* L.) is a dicot annual herb and a popular winter season flowering annual crop. It is different from florist chrysanthemum in many aspects. The crop is relatively shorter in duration and photo-insensitive under Dharwad conditions thus, capable of coming up throughout the year. The plants are bushy with numerous erect stems bearing multitudes of cheerful yellow or white flowers. The flowers assumed economic importance on account of their varied uses such as cut flowers for vase decorations, loose flowers for making garlands and religious functions.

The quality of flowers is greatly influenced by the quantity of nutrients and sources of nutrients. Chemical fertilizers have become very costly and its indiscriminate use has led to deterioration of soil health. The uses of organic manures in conjugation with fertilizers not only enhances the efficiency of fertilizers but also partly supply nutrients, at the same time improve the soil physical, chemical and biological properties. A very few attempts have been made so far to study the efficiency of integrated nutrient management in flower crops particularly in garland chrysanthemum; hence the present study was carried out. Use of different sources of nutrients in an integrated manner helps to produce sustainable yields with good quality flowers and also maintains soil health.

Resources and Research Methods

The experiment was carried out at Floriculture unit of New Orchard, Dept. of Horticulture, University of Agricultural Sciences, Dharwad during *Kharif* 2009-2010. The experiment was laid in Randomized Completely Block Design (RCBD) with three replications. There were nine treatments *i.e.* T_1 (Absolute control), T_2 [100% RDF + FYM (20 t/ha)], T_3 (50% VC equivalent to RD'N' + 50% RDF), T_4 (Azo + 75% RD'N' + 100% RD'P' and 'K'), T_5 (PSB + 75% RD'P' + 100% RD'N' and 'K'), T_6 (Azo + 50% VC equivalent to RD'N' + 50% RDF), T_7 (PSB + 50% VC equivalent to RD'N' + 50% RDF), T_8 (Azo + PSB+ 50% RD'N' and 'P' + 100% RD'K') and T_9 (Azo + PSB+ 50% VC equivalent to RD'N' + 50% RDF).

One month old seedlings of garland chrysanthemum with uniform growth were transplanted at a spacing of 30 x 30