



Effect of organic, inorganic and bio-fertilizers on nutrient uptake and productivity of byadagi chilli

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Abstract : A field experiment was conducted on block soil at Regional Agricultural Research Station, Raichur during *Rabi* 2003, to study the response of chilli (cv. BYADAGI KADDI) to combined application of organic, inorganic and biofertilizers. Results revealed that, chilli nourished with FYM @ 25 t/ha + 100 per cent RDF, gave significantly higher yield (7.42 q/ha.) followed by chilli which was supplemented with FYM @ 75 t/ha + *Azospirillum*+ Phosphate solubilizing bacteria(PSB) +25 per cent RDF(6.25 q/ha.). Similarly, uptake of nutrients viz. nitrogen(101.25 kg/ha.), phosphorus(24.02 kg/ha.) and potassium(126.37 kg/ha.) were found highest when chilli was applied with FYM(25 t/ha)+ RDF(100%). On the contrary, the lowest uptake of nutrients was observed in chilli when it was supplemented with FYM@25 t/ha+*Azospirillum*+PSB.

Key Words : Chilli, Organic, Inorganic, Bio-fertilizers, Nutrient uptake, Yield

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INTRODUCTION

With the dawn of green revolution during the mid sixties in India the use of chemical fertilizers and pesticides has been on rising scale. The detrimental effects of indiscriminate use of these chemicals have been felt in recent past. The lands which have been applied with application of abundant quantity of chemical fertilizers alone have turned out to be less productive.

Now people from all walks of life have realized the importance of organic and bio-fertilizers, as source of nutrient to crop plants. Use of organic and bio-fertilizers with little amount of inorganic fertilizer were found to be most effective to enhance yield and maintaining soil health. Hence, an experiment was conducted to combine organic, inorganic and bio-fertilizer as nutrient supplement, so as to phase out use of inorganic fertilizers.

MATERIALS AND METHODS

The field experiment was laid out in randomized block

design at Regional Agricultural Research Station, Raichur during *Rabi* 2003. *Rabi* chilli was grown with different combination of organic, inorganic and bio-fertilizers consisting of 10 treatments. Soil physical and chemical properties were determined by using standard procedure. Initial soil properties were analysed and given in Table A. The soil was clay-loam in texture and low in available N(245.60 kg/ha), high in P₂O₅ (29.58 kg/ha) and medium in K₂O(278.00 kg/ha) with pH of 7.93. The gross and net plot sizes were 4.8mx4.5m and 3.6mx3.0m, respectively. Five week old chilli (cv. BYADAGI KADDI) seedlings were transplanted on October 25, 2003 at a spacing of 75 cm x 60 cm. Well decomposed FYM was incorporated according to treatment combinations. *Azospirillum* and PSB were used as source of bio-fertilizers for both seed treatment and seedling treatment.

The picking of red chilli fruits was started from 60 days after planting and were dried on the floor, totally four pickings were done. The treatment wise total production obtained from all pickings was expressed on hectare basis.

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