



Research Article

Productivity and uptake of NPK by maize (*Zea mays* L.) as influenced by integrated nutrient management practices

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Abstract : A field study was carried out at College of Agriculture, Navile, Shimoga during *Kharif* 2009 to study the productivity and uptake of NPK by maize (*Zea mays* L.) as influenced by integrated nutrient management practices. There were two levels of nitrogen applied through organics (FYM and vermicompost) and inorganics involving nine treatments combinations were treid in a RCBD with three replications. Significantly higher grain (9.50 t ha⁻¹) and stover (11.00 t ha⁻¹) yield and total uptake of N, P and K by maize were recorded by the treatment involving package of practices compared to the treatments which received nitrogen levels in the form of inorganics and organics. However, the integrated treatment did not differ significantly with each other in respect of yield and uptake of NPK by maize.

Key Words : Integrated nutrient management, Yield, Quality soybean and economic returns, FYM

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INTRODUCTION

Maize (*Zea mays* L) is considered as an economically important cereal crop, major ingredient for food, feed and other products. It assumes an important role next to rice and wheat in the farming sector and macro economy of agrarian countries.

Maize has high genetic yield potential than other cereal crops. Hence, it is called as 'miracle crop' and also as 'queen of cereals'. Being a C₄ plant, it is very efficient in converting solar energy in to dry matter. As heavy feeder of nutrients, maize productivity is largely dependent on nutrient management. Therefore, it needs fertile soil to express its yield potential. Ideal soils are rarely found in nature. Hence,

soils have to be improved to suit the crop not only by adding nutrients, but also by other soil amendments, like organic matter for maintaining the activity of 'soil life'.

Intensive cultivation, growing of exhaustive crops, use of unbalanced and inadequate fertilizers accompanied by restricted use of organic manures and biofertilizers have made the soils not only deficient in the nutrients, but also deteriorated the soil health resulting in decline in crop response to recommended dose of N – fertilizer in the region under such situation, integrated plant nutrient system (IPNS) has assumed a great importance and has vital significance for the maintenance of soil productivity. Organic manures, particularly FYM, vermicompost and green manures, not only supply macronutrients but also meet the requirements of micronutrients, besides improving soil health. Boosting yield, reducing production cost and improving soil health are three inter -linked components of the sustainable triangle. Therefore, suitable combination of chemical fertilizer and organic manures cultures need to be developed for particular cropping system and soil.

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