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Research Article

Influence of integrated organic nutrient management practices on quality parameters of chickpea grown in vertisol of northern dry zone of Karnataka

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Abstract : Field trials were conducted on Vertisols at Agricultural Research Station, Annigeri, UAS, Dharwad during *Rabi* season of 2009-2010 and 2010-2011 to study the influence of integrated organic nutrient management practices on quality parameters of chickpea (*Cicer arietinum* L.) grown in vertisol of northern dry zone of Karnataka. Soil application of various organic manures and foliar spray of liquid organic manures at flower initiation and 15 days after flowering (DAF) significantly improved the quality parametes in chickpea. Among the treatment combinations, application of enriched compost (EC) (1/3) + vermicompost (VC) (1/3) + glyricidia leaf manure (GLM) (1/3) equivalent to 100 per cent RDN and foliar spray of panchagavya @ 3 per cent at flower initiation and 15 DAF has recorded significantly, higher protein yeild (499 kg/ha), higher total chlorophyll content in leaves(2.29 mg/g fr. wt. leaves), compared to other treatment combinations.

Key Words : Chickpea, Organic manures, Panchagavya , Vermicompost

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INTRODUCTION

The chickpea (*Cicer arietinum* L.) as a healthy vegetarian food has an important role in human food and domestic animal feed in India. It is a cheap source of high quality in the diets of millions of people in developing countries, who cannot afford animal for balanced nutrition . Also chickpea play a key role in organic cropping systems. In such agro ecosystem with limited availability of nitrogen, chickpea, potentially constitute both a cash crops and a source of N incorporation into the system via biological nitrogen fixation. To be sustainable, organic farming needs to be self-sufficient in nitrogen (N) through the fixation of atmospheric di- nitrogen (N_2) by legumes, recycling of crop residues (green manures) and the application of farmyard manure, compost, green leaf manure, neem cake , organic liquid manures spray and biofertilizer. Phosphorus is present as mineral deposits, which are a non-renewable natural resource. There is global concern about the energy and costs involved in mining the phosphate rock and its transport to manufacturing sites, as well as in the manufacture of different fertilizers and their transport to farm fields and application to the crops. Photosynthesis and stomatal conductance are reduced by P deficiency and, conversely, increases P increased photosynthesis. Phosphate solubilizing bacteria are also known to increase phosphorus uptake resulting in better growth

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