Click www.researchjournal.co.in/online/subdetail.html to purchase.

RESEARCH PAPER International Journal of Agricultural Sciences, Vol. 7 Issue 2 (June, 2011) : 366-369

Organic production of greengram through nitrogen management using different sources of compost

P.R. DADGALE*, A.B. CHOREY AND M.R. THAKUR
Department of Agronomy, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, AKOLA (M.S.) INDIA
Email : pankaj.dadgale@gmail.com; aabchorey@rediffmail.com; dr.mangesh_thakur@rediffmail.com

ABSTRACT

The field experiment to evaluate the response of green gram to different sources of compost was conducted at farm of Department of Agronomy, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola during *Kharif* season of 2007-08. The results of experiment indicated that application of recommended dose of fertilizer significantly improved growth attributes, yield and consequently resulted in highest monetary gain which was followed by application of recommended dose of nitrogen through soybean straw compost. However, application of recommended dose of nitrogen through FYM favourably influenced on soil physic chemical properties.

Dadgale, P.R., Chorey, A.B. and Thakur, M.R. (2011). Organic production of greengram through nitrogen management using different sources of compost. *Internat. J. agric. Sci.*, **7**(2): 366-369.

Key words : Compost, Greengram, Growth, Nitrogen management, Soil properties, Yield

INTRODUCTION

Use of organic manures in soil plays vital role in maintenance of native soil fertility. It not only increases the moisture holding capacity of the soil but also plays an important role in soil and water conservation by their binding and aggregation properties. Moreover, they also help in balancing the nutrient availability to growing as well as succeeding crop plants and boost up the production and quality of crop. Organic manures supplies substantial amounts of humus substances. Humus improves the structure, drainage, aeration of the soil, water holding capacity, buffer and exchange capacity and solubility of soil minerals. One of the important features of sustainable agriculture is less dependence on chemical fertilizers, which can be achieved by recycling of on-farm wastes to maintain and improve fertility of the soil (Parr *et al.*, 1990). Any strategy facilitating recycling of organic materials in these soils through application of organic manures, could prove as panacea to the soil related constraints. Indian subcontinent, which feeds more than a billion people, generates huge quantity of recyclable crop residues. If these organic wastes are not recycled appropriately, it may pose serious environmental problems. Organic materials can easily be converted to a high quality manure in combination with other farm based organic materials such as sorghum stubbles, wheat straw, soybean straw, weed biomass and cattle dung using efficient strains of earthworms. Biofertilizers in combination with fertilizers are very effective for increasing crop productivity (Singh, 2007). Vermicomposting is particularly effective when measured in terms of fertilizer equivalent, because it produces castings of high fertilizer value. Barley and Jennings (1959) showed that a vast portion of non available nitrogen present in organic matter became available to the plant through the process of vermicomposting. Greengram [*Vigna radiata* (L.) Wilczek] is one of the most important pulse crop in India. It is highly nutritious and easily digestible and it is also used as green manuring crop. It has the capacity to fix atmospheric nitrogen and also helps in preventing soil erosion. Greengram has been cultivated in almost all states of India. It is the most important crop next to pigeonpea among the *Kharif* pulses in Vidarbha cultivated on an area of 0.309 million ha which accounted 46.67 per cent of total green gram growing area of Maharashtra.

MATERIALS AND METHODS

A field experiment was conducted at farm of Department of Agronomy, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola during *Kharif* season of 2007-2008. The soil of experimental field was clayey, having pH 7.8 with electric conductivity 0.25 dSm^{-1}, organic carbon 0.40% and available N, P_2O_5 and K_2O 234.58, 20.86 and 322.94 kg ha^{-1}, respectively. The experiment comprised of nine treatments *viz*., T_1- Recommended dose of fertilizer (20:40:00 NPK kg ha^{-1}), T_2- Recommended dose of N (RDN) through FYM (2.47 t ha^{-1}), T_3- RDN through vermicompost (1.61 t ha^{-1}), T_4- RDN through soybean straw compost (1.87 t ha^{-1}), T_5- RDN through wheat straw compost (3.70 t ha^{-1}), T_6- RDN through

* Author for correspondence.