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Research Paper

Effect of organic manures and biofertilizers on quality of tomato fruits

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ABSTRACT

The present investigation was carried out at Mahatma phule Kristi Vidyapeeth, Rahuri (M.S) during *Kharif* 2004. to study the effect of organic manures with biofertilizer on fruit characters of tomato hybrid RTH-2. The experiment consisted of eleven treatments with three replications in Randomized Block Design. FYM, cotton seed cake and poultry manure were applied in combination at 25,50 and 75 per cent level as N source. Vermiphos and sulphate of potash were used as source of phosphorus and potassium, respectively. The important fruit quality parameter such as pericarp thickness, TSS, acidity, ascorbic acid, lycopene were found to be better in the treatment with organic fertilizers in combination biofertilizer. it could be concluded that, organic sources with use of biofertilizers had a beneficial effect in tomato production and can be practiced for better quality fruits.

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Key words : Organic manures, Biofertilizer, Cotton seed cake, Tomato

Tomato (*Lycopersicon esculentum* Mill.) is an annual vegetable crop of wide spread culture and popularity. It is the most popular vegetable all over the world and ranks second. Tomato is mostly grown for vegetable purpose, yet it is widely consumed as salad or in processed from in fact it ranks first in processing. It is used in preparation of products of products like puree, ketch-up, etc nutritionally it is equally important food owing to the appreciable contents of vitamins A, B and C (Arora *et al.*, 1993).

In India, tomato is mostly grown in the plains over an area of 5.35 lakh ha with annual production of 93062 lakh metric tones(Anonymous, 2008). In Maharashtra the area under tomato is about 0.36 lakh ha with an estimated production of about 11.83 lakh tones (Anonymous, 2003). The prices of chemical fertilizer have gone up tremendously and the marginal farmers can not afford such costly fertilizers. About 50 per cent of applied inorganic fertilizers are lost either through leaching or volatization, under this situation use of organic manures and biofertilizers could be the key to sustain soil fertility and obtained the desired level of yield and quality. Organic fertilizers positively affected and also improve keeping quality at room tempreture and in storage of vegetable (Vogtmann *et al.*, 1993)

The nutrient management in organic farming is done through materials like farm yard manure, neem cake, organic manure, poultry manure, vermicompost, green manures and crop residues. These can substitute for inorganic fertilizer to maintain the environmental quality and safety. Biofertilizers are natural fertilizers containing carried based micro-organisms which help to enhance productivity by biological nitrogen fixation or solubilization of phosphate or producing hormones, vitamins and other growth factors required for plant growth (Bhattacharya *et al.*, 2000).

MATERIALS AND METHODS

The present investigation was carried out at Mahatma Phule Kristi Vidyapeeth, Rahuri during *Kharif* 2004 to study the effects of organic manures and biofertilizers on growth and yield of tomato hybrid RTH-2. The experiment consisted of 11 treatment *viz.*, T_1 FYM (75%N) + Cotton seed cake(25%N)+ Vermiphos + Sulphate of potash + Package, T_2 FYM (75%N) + Poultry manure (25%N) + Vermiphos + Sulphate of potash + Package, T_3 FYM (50%N) + Cotton seed cake(50%N) + Vermiphos + Sulphate of potash + Package, T_4 FYM (50%N) + Poultry manure(50%N) + Vermiphos + Sulphate of potash + Package, T_5 FYM (25%N)+ Cotton seed cake(75%N) + Vermiphos + Sulphate of potash + Package, T_6 FYM (25%N) + Poultry manure(75%N) +