EFFECT OF FYM, N P K AND MICRONUTRIENTS ON GROWTH, YIELD AND FRUIT QUALITY OF TOMATO (*Lycopersicon esculentum* Mill.) Cv. HEEMSOHNA UNDER PROTECTED CULTIVATION

**ABSTRACT**

The experiment was carried out in vegetable Research Farm, during mid-November to 8-May in the year 2011-12 and 2012-13 with 18 treatments in 3 replications in split plot design, the treatments ranged from $T_1$ (control), $T_2$ (FYM 1.5 kg / m$^2$), $T_3$ (FYM 2.5 kg / m$^2$), $T_4$ (30.86 g N, 18.51 g P and 18.51 g K / m$^2$), $T_5$ (30.86 g N, 18.51 g P and 18.51 g K / m$^2$ + FYM 1.5 kg / m$^2$), $T_6$ ((30.86 g N, 18.51 g P and 18.51 g K / m$^2$ + FYM 2.5 kg / m$^2$), $T_7$ (46.29 g N, 37.02 g P and 37.02 g K / m$^2$), $T_8$ (46.29 g N, 37.02 g P and 37.02 g K / m$^2$ + FYM 1.5 kg / m$^2$) , $T_9$ (46.29 g N, 37.02 g P and 37.02 g K / m$^2$ + FYM 2.5 kg / m$^2$), $T_{10}$ (Micronutrient 2.5ml/l), $T_{11}$ (FYM 1.5 kg / m$^2$ + Micronutrient 2.5ml/l), $T_{12}$ (FYM 2.5 kg / m$^2$ + Micronutrient 2.5ml/l) , $T_{13}$ (30.86 g N, 18.51 g P and 18.51 g K / m$^2$ + Micronutrient 2.5ml/l), $T_{14}$ (30.86 g N, 18.51 g P and 18.51 g K / m$^2$ + FYM 1.5 kg / m$^2$ + Micronutrient 2.5ml/l), $T_{15}$ (30.86 g N, 18.51 g P and 18.51 g K / m$^2$ + FYM 2.5 kg / m$^2$ + Micronutrient 2.5ml/l), $T_{16}$ (46.29 g N, 37.02 g P and 37.02 g K / m$^2$ + Micronutrient 2.5ml/l), $T_{17}$ (46.29 g N, 37.02 g P and 37.02 g K / m$^2$ + FYM 1.5 kg / m$^2$ + Micronutrient 2.5ml/l) and $T_{18}$ (46.29 g N, 37.02 g P and 37.02 g K / m$^2$ + FYM 2.5 kg / m$^2$ + Micronutrient 2.5ml/l). The cultivar of tomato was "Heemshona" from Syngenta company. Different types of observations like plant height, stem diameter, number of leaves per plant, leave area, dry weight, No. of clusters/plant, No. of flowers/cluster, No. of fruits/cluster, Number of fruits/plant, fruit weight, yield/plant, early yield, total yield, T.S.S. (Total soluble solids) °Brix, ascorbic acid, chlorophyll content in leaves, lycopene pigment and economics of different treatments were also worked out. The highest fruit weight (73.17 g) was recorded in $T_{17}$ (46.29 g N, 37.02 g P and 37.02 g K / m$^2$ + FYM 1.5 kg / m$^2$ + Micronutrient 2.5ml/l). The treatment $T_{18}$ (46.29 g N, 37.02 g P and 37.02 g K / m$^2$ + FYM 2.5 kg / m$^2$ + Micronutrient 2.5ml/l) was found to be the best in both years – wise performance and pooled analysis with respect to all parameters under observation. The treatment $T_{18}$ was obtained the highest total yield (3.172 tonnes in 220 m$^2$).