



Research Paper

Article history :

Received : 29.05.2012

Revised : 20.10.2012

Accepted : 20.11.2012

Effect of manures and fertilizers on growth and fruit yield of acid lime cv. KAGZI (*Citrus aurentifolia* Swingle)

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ABSTRACT : A field experiment was conducted to see the effect of manures and fertilizers on growth and fruit yield of acid lime cv. Kagzi (*Citrus aurentifolia* Swingle) during years 1988, 1989 and 1990 at Horticultural Research Farm, B. A. College of Agriculture, Anand Agricultural University, Anand. The experiment was laid out in Randomized Block Design (RBD) with six treatments. The treatment T₆ - NPK 900-750-500 g/tree gave significantly the highest values of growth parameters viz., tree height, stem girth and tree spread as well as fruit yield of acid lime cv. KAGZI. The fruit yield was found significantly higher in treatment T₆ i.e. 54.72 and 57.20 kg/tree during the year 1989 and in pooled analysis, respectively as compared to other treatments.

KEY WORDS : *Citrus aurentifolia* Swingle, Manures, Fertilizers, Yield

HOW TO CITE THIS ARTICLE : Patel, K.M., Patel, H.C., Patel, K.A., Chauhan, V.B. and Patel, J.S. (2012). Effect of manures and fertilizers on growth and fruit yield of acid lime cv. KAGZI (*Citrus aurentifolia* Swingle), *Asian J. Hort.*, 7(2) : 481-483.

Acid lime (*Citrus aurentifolia* Swingle) belongs to family Rutaceae, is one of the most important citrus fruit as a major source of vitamin- C and acitic acid grown throughout the world (Souci *et al.*, 2000). In India, it is being grown in the states of Andhra Pradesh, Karnataka, Maharashtra, Punjab, Rajasthan, Uttarakhand and Gujarat in a total area of 9,87,000 ha from which about 96,38,000 MT of production is obtained annually (Anonymous, 2010). It is grown in tropical, sub-tropical and temperate parts of the world. In Gujarat, total area under kagzilime cultivation is 39,189 ha with total production of 4,09,134 MT. The main kagzi lime growing districts are Mehsana, Bhavnagar, Anand and Ahmedabad in Gujarat. Mehsana is a leading district for kagzi lime cultivation with 10,000 ha area and production of about 91,000 tonnes. (Anonymous, 2011).

RESEARCH METHODS

A field experiment was conducted at the Horticultural Research Farm, Department of Horticulture, B. A. College of Agriculture, Anand Agricultural University, Anand during the years 1988, 1989 and 1990 on loamy sandy soil under middle Gujarat conditions. There were six treatments embedded in a Randomized Block Design with four replications. Details of

treatments were as. T₁ - NPK 200-200-300 g/tree, T₂ - NPK 400-200-300 g/tree, T₃ - NPK 600-200-300 g/tree, T₄ - NPK 800-200-300 g/tree, T₅ - NPK 1000-200-300 g/tree and T₆ - NPK 900-750-500 g/tree (Half of nitrogen was applied in organic and inorganic form). Nitrogen was applied in the form of urea and castor cake in two equal splits in month of June-July and February-March. 50 kg FYM per tree was applied as a common treatment. The tagging was made on two trees for tree height, stem girth, tree spread and fruit yield estimation.

RESEARCH FINDINGS AND DISCUSSION

The results of fruit yield (kg/tree) were influenced by different manures and fertilizers treatments are presented in Table 1. In individual year 1989 the fruit yield was found significantly maximum with T₆ - NPK 900-750-500 g/tree i.e. 54.72 kg/tree as well as 57.20 kg/tree in pooled analysis, while it was found non-significant with years 1988 and 1990. This difference might be due to different quantity of integrated fertilizers levels and half split dose of N through organic manures (castor cakes). Increased synthesis of protein and protoplasm with better availability of nitrogen leading to the quick and better vegetative growth of plant. As the meristamatic tissues have active protein metabolism, photosynthates were