



## Effect of organic and inorganic fertilizers on growth, yield and quality of garlic cv GG.-1

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### ABSTRACT

A field experiment was conducted on effect of organic and inorganic fertilizers on growth, yield and quality of garlic cv. GG-1 and from the results, it is seen that 25 per cent RDF + 75 per cent through FYM produced more average bulb weight. In case of quality parameters 25 per cent RDF + 75 per cent through FYM was showing maximum TSS and ascorbic acid over all other treatments. The 50 per cent RDF + 50 per cent through FYM also showed beneficial effect over all other treatments with control in respect to growth, yield and quality parameters of garlic. In general, it is seen that application of organic manures with their different level of combination with reduced doses of inorganic fertilizer significantly influenced the growth characters.

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**Key words :** Bulb, Garlic, FYM, Inorganic, Yield

**G**arlic (*Allium sativum*, Family-Alliaceae) is one of the most important bulbous spice crop. It is mainly used for flavouring and seasoning vegetables and meat dishes. The important garlic growing states in India are Madhya Pradesh, Gujarat, Orissa, Rajasthan, Maharashtra and Uttar Pradesh. Garlic production percentage in different states is around in Madhya Pradesh (29.41%), Gujarat (17.96 %), Rajasthan (11.68 %), Orissa (10.62 %), Maharashtra (9.65 %) and in Uttar Pradesh (9.56 %). Thus, 45 per cent production is from Madhya Pradesh and Gujarat only. In India the main reason for lower productivity in garlic is due to inadequate and improper adoption of agronomic practices, pest and disease management, market support, etc. Among the cultural practices, nutrient plays an important role in deciding the yield of any crop. The interactive advantage of inorganic and organic sources of nutrients generally proved superior to the use of each component applied separately. The role of farm yard manure (FYM) in enhancing efficient use of chemical fertilizers is well documented. Singh and Attrey (2002) reported that the organic farming makes positive contribution not only to the soil and environment but human health also. So, to eliminate all these bad effects, integrated plant nutrient farming is best alternative. Now a day, vegetables production with minimum or no use of inorganic fertilizers is preferred in export market.

Organically grown food is expected to fetch higher price and this can offset any loss due to lower yields. Organic market analysis has forecasted 20 to 30 per cent growth in global demand for \$ 100 million in the ensuing decade (Somsundaram *et al.*, 2004).

### MATERIALS AND METHODS

A field experiment was conducted at Instructional Farm, Regional Horticultural Research Station, ASPEE College of Horticulture and Forestry, Navsari Agricultural University, Navsari during *Rabi* season in the year 2007-2008 by using Randomized Block Design, with three replications which included ten treatment combinations comprised of 25 % RDF + 75 % FYM, 25 % RDF + 75 % VC. (Vermi-compost), 25 % RDF + 75 % BC. (Bio-compost), 50 % RDF + 50 % FYM, 50 % RDF + 50 % VC., 50 % RDF + 50 % BC., 75 % RDF + 25 % FYM., 75 % RDF + 25 % VC., 75 % RDF + 25 % BC. and control 100 % RDF (100: 50: 50) NPK kg/ha. In each treatment gross plot size (2.25m x 1.5m) was taken. Harvesting of mature bulbs were done when the tops (leaves) turn yellow and brownish showing signs of drying up and bending and bulbs which were used for the further physico-chemical observations.