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Effect of inorganic and biofertilizer on growth, and yield of Garlic (*Allium sativum* L.)

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The experiment was carried out at Horticulture Research Station, Mondouri, Bidhan Chandra Krishi Viswavidyalaya, Mohanpur, Nadia, West Bengal during the years 2011-12 and 2012-2013. The cloves were planted during middle of the October in 2.0x1.5 m plot at 20x15 cm spacing during both the years. The experiment was laid out in Randomised Block Design with three replications. Two nitrogen fixing biofertilizers (*Azospirillum lipoferum* and *Azotobacter chroococcum*) and two phosphatic biofertilizer [vesicular *Arbuscular mycorrhiza* (*Glomus fasciculatum*) and phosphate solubilising bacteria (*Bacillus polymixa*)] and one potassic mobilizer (*Fraturia aurantea*) were included. Biofertilizers were applied @6g per plot with 250 g well rotten Farm yard manure. Three levels of recommended dose of NPK i.e., 100%, 75% and 50% were included. Two way combinations of both nitrogenous and phosphatic biofertilizers were followed with each level of inorganic fertilizers which results in 12 treatment combination having potassium mobilize common to all treatment. Full dose of recommended fertilizer applied alone in one alone in one treatment i.e., altogether 13 treatment combinations.

The plants raised under NPK (100%) + *Azotobacter* +VAM +KM recorded maximum polar diameter (3.19 cm) but maximum number of cloves per bulb (32.86) was noticed in NPK (100%) + *Azospirillum* +VAM +KM. The maximum plant height (75.42 cm) and longest root (7.92 cm) were observed in NPK (100%) + *Azotobacter* +PSB +KM. The maximum leaf number (11.45), number of roots (98.46), bulb weight (29.16 g), equatorial diameter (4.12 cm), plot yield (2.85 kh/3m²) and projected yield (7.12 t/ha) were noticed in NPK (100%) + *Azospirillum*+PSB +KM. The next best treatment in respect of projected yield was NPK (100%) + *Azotobacter* +PSB +KM (6.64 t/ha) followed by NPK (75%) + *Azospirillum*+PSB+KM (6.28 t/ha). The results also indicate the chance of reduction of 25% of inorganic fertilizer through inoculations of biofertilizers.

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