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Effect of organic source of fertilizers along with inorganic on growth, yield and quality of tomato (*Solanum lycopersicum* L.) cv. PKM 1

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ABSTRACT : The present investigation was aimed at determining the effect of combined combination of biofertilizers along with chemical fertilizers application on growth and yield parameters of tomato plants. An experiment was conducted at Horticultural College and Research Institute, Periyakulam in the year 2016 *Rabi* season. The trial was laid out in a Randomized Block Design (RBD) including nine set of treatments with three replications to evaluate the effect of inorganic fertilizers like that N, P and K (75 % and 100% prescribed dosage) with organic fertilizers including *Azospirillum, Phosphobacteria, potash mobilizer* (each 1 lit/acre), VAM (5 kg/acre) and humicacid (3 lit/acre) as soil and foliar application along with control. PKM 1 variety of tomato was taken as a test crop. The seedlings were transferred to the main field and inorganic fertilizers (N, P and K) were applied as per the treatment schedule. The organic fertilizer treatment was imposed at 15 days interval three times on the standing crop with varying dosages. Observation parameters like plant height (cm), average number of fruits per plot, average fruit weight per plant (g), yield (tonnes/ha), days to 50% flowering, ascorbic content and TSS were recorded. The treatments T_8[75 % RCF + biofertilizers (*Azospirillum* + *Phosphobacteria* + potash mobilizer + VAM)+ humic acid liquid as soil application] recorded maximum in plant height (73 cm), average number of fruits per plot (59), average weight of fruits per plot (707 g), yield (31.56 t/ha), ascorbic content (17.3 mg/100g) and TSS (5.5 ^{0}Brix), followed byT_6 (RCF + biofertilizers – (*Azospirillum* + *Phosphobacteria* + Potash mobilizer + VAM + humicplus liquid as soil application) while the control T_1 recorded lowest. The overall result revealed that 75% inorganic fertilizers combined with organic fertilizers increased number of fruits, weight of fruits and yield, compared to control and the percentage increase in yield was 35% over control.

KEY WORDS : *Azospirillum*, *Phosphobacteria*, *Potash mobilizer*, VAM, Nitrogen, Phosphorus, Potassium, RCF- Recommended chemical fertilizer

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