

Research Article

Effect of rates of castor cake and banana pseudostem sap on the nutrient concentration, uptake and yield of organic garlic (*Allium sativum* L.) (cv G G-2)

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Summary

An investigation was carried out at organic farm, Navsari Agricultural University, Navsari during the *Rabi* season of 2010-2011 and 2011-12 to study the effects of rates of castor cake and banana pseudostem sap on nutrient concentration, their uptake and yield of organically grown garlic. The nutrient concentration (N, P, K, S, Fe, Mn, Cu and Zn) in leaves and cloves were estimated after harvest of garlic. Organic treatments significantly influenced on nutrient content in garlic. The maximum concentration of these nutrients was recorded with the application of 33.3 per cent N through vermicompost + 33.3 per cent N through biocompost + 33.4 per cent N was through castor cake + 2000 lit sap of pseudostem sap (T_{12}). While, the minimum content was recorded with treatment T_{13} (recommended dose, 100:50:50 through chemical fertilizers). The leaves, bulb and total uptake of major and minor nutrients were significantly influenced by the different organic treatments, being maximum with treatment T_{12} followed by T_{11} during both years of and in pooled analysis. Higher uptake of these nutrients was recorded by bulb than leaves. Although higher levels of organic manures recorded higher uptake. The lowest uptake was recorded in treatments T_1 where only 66.6 per cent of N added through vermicompost and bio-compost during experimentation. The highest garlic bulb yield (47.63, 83.10 and 65.36 q ha⁻¹, respectively) and leaves yield (7.01, 9.22 and 8.15 q ha⁻¹, respectively) were obtained under treatment T_{12} during both years and in pooled analysis. Significantly the lowest values of bulb and leaves yield were observed with treatment T_1 (No castor cake + No sap). In organic vs inorganic comparison, quit higher values were recorded in organic treatment, where the maximum nutrients were added through organic manures. Data aptly noticed that increasing levels of castor cake and pseudostem sap increased the garlic yield in both years and in pooled analysis.

Key words : Pseudostem sap, Nutrient concentration, Uptake, Yield, Biocompost, Vermicompost, Garlic

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