Effects of Fermented Banana Pseudo-Stem Sap *Musa acuminata* L. on the Growth and Yield Attributing Characters of Marigold Var. Karma 555 - Orange in Chitwan, Nepal

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Abstract

An experiment was conducted to explore the optimum concentration of banana pseudo-stem sap (BPS) to evaluate the growth and yield of marigold var. Karma 555 – Orange through the foliar spray from July 2022 to November 2022 in Rampur, Chitwan, Nepal. Banana pseudo-stem sap was mixed and enriched with different ingredients like cow urine, cow dung, neem leaf, green gram leaf, pulse flour, vermin-liquor, jaggery and fermented curd following the incubation of mixture in anaerobic condition before foliar spray. The research was carried out in a complete randomized block design (RCBD) with seven treatments and three replications. The treatments were: 0.5% BPS, 1% BPS, 2% BPS, 3% BPS, 4% BPS, 5% BPS and control. The data were recorded at 50, 70 and 90 days after transplanting (DAT). BPS with 3% solution showed significant effects in most of the growth parameters viz. plant height (85.07 cm), plant spread (63.47 cm) at 90 DAT and yield parameters; average number of flower per plant (74.00), the average weight of flower per flower (8.10 gm), average diameter of flower (7.55 cm) and yield per plant (547.34 gm) over other treatments. It was found that growth and yield attributes increase with increased concentration of banana pseudo-stem sap up to 3 % BPS and decrease thereafter. It could be suggested that a foliar spray of marigolds with 3% BPS (enriched solution) could be an effective alternative to synthetic hormones to enhance the growth and quality of marigolds under field conditions.

Keywords: Flower, gibberellic acid, growth regulators, hormones, liquid fertilizer