Application of Cattle and Poultry Manures in Combination with Foliar Application of Vermiwash on Growth and Yield of Okra

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As a cost-effective and ecological sustainable process vermitechnology has a great future in the field of organic waste management. Vermiwash, leachate produced during the process of vermicomposting contains macro and micronutrients along with microbes. In this regard, a pot experiment was conducted at the Crop Farm, Eastern University, Sri Lanka from January to April 2019 to investigate the influence of application of cattle and poultry manures in combination with foliar application of vermiwash on growth and yield of okra cv. P-11. The experiment was comprised of nine treatments and laid out in a Completely Randomized Design (CRD) with eight replicates. The treatments were; T1 = Control (recommended fertilizer), T2 = poultry manure 10 t/ha with 25% vermiwash, T3 = poultry manure 10 t/ha with 50% vermiwash, T4 = poultry manure 10 t/ha with 75% vermiwash, T5 = poultry manure 10 t/ha with 100% vermiwash, T6 = cattle manure 10 t/ha with 25% vermiwash, T7 = cattle manure 10 t/ha with 50% vermiwash, T8 = cattle manure 10 t/ha with 75% vermiwash, T9 = cattle manure 10 t/ha with 100% vermiwash. The growth and yield parameters including plant height, number of leaves/plant, dry weight of leaves, stems, roots, pods and total dry weight per plant were measured. The results showed that the foliar application of 100% vermiwash with 10 t/ha poultry manure increased plant height (30%), the number of leaves/plant (37%), dry weight of leaves/plant (52%), dry weight of stem/plant (38%), dry weight of root/plant (36%), dry weight of pods/plant (32%) and total dry weight/plant (43%), than that of recommended fertilizer. Hence, the experiment suggests that the application of poultry manure 10 t/ha + 100% vermiwash could be a sustainable method for obtaining high growth and yield in okra.

Keywords: Growth, Okra, Poultry manure, Vermiwash, Yield