

RESPONSE OF PERILLA (*Perilla frutescens*) UNDER DIFFERENT NUTRIENT MANAGEMENT PRACTICES

A.K.M. Ruhul Amin*

Executive Summary

An experiment was conducted in the research field of Sher-e-Bangla Agricultural University, Dhaka 1207 during the period from July, 2022 to November, 2022 to find out the effect of different organic manure and levels of inorganic fertilizer on growth, yield and oil content of SAU Perilla-1. The experiment comprised of two factors viz. Factor A: Organic manure – 5 (Main plot)- i. OM₀ = Control, ii. OM₁ = Cowdung, iii. OM₂ = Vermicompost, iv. OM₃ = Decomposed rice straw and v. OM₄ = Poultry litter; Factor B: Fertilizer Level - 4 (Sub Plot)- i. F₀ = No fertilizer (Control), ii. F₁ = 75% Recommended dose of fertilizers (RDF), iii. F₂ = 100% RDF and iv. F₄ = 125% RDF. The experiment was laid out in a split plot design with three replications. Data were collected on different aspects of growth, yield attributes and yield of perilla. Results revealed that Poultry litter (OM₄) and vermicompost (OM₂) gave the highest grain yield (1385.7 and 1249.2 kg ha⁻¹, respectively) which may be attributed to the highest number of branches plant⁻¹, seeds branch⁻¹ and 1000 seed weight in these organic manure treatments (OM₄ and OM₂). These two treatments also resulted with the highest oil percentages. Considering chemical fertilizer treatments, F₄ (125% higher than recommended dose of fertilizer) showed the highest seed yield (1323.4 kg ha⁻¹) but seed yield (1304.1 kg ha⁻¹) from F₂ (Recommended dose of fertilizer) was not statistically different from F₄ treatment. These two treatments (F₄ and F₂) showed the highest and statistically similar number of branches plant⁻¹, seeds branch⁻¹ and 1000 seed weight. Oil percentage (33.71 and 33.20%, respectively) also found higher in F₄ and F₂ treatments. Regarding the combined effects of organic manure and chemical fertilizer, the Poultry litter +125% higher than recommended dose of fertilizer (OM₄ × F₃) was shown up the highest values of parameters (Branches plant⁻¹, Seeds branch⁻¹, 1000 seed weight, seed yield and oil percentage) under study. However, OM₄ × F₃ and OM₄ × F₃ also showed similar results with OM₄ × F₃. Considering the above results, poultry litter or vermicompost coupled with recommended dose of fertilizer may be suggested to cultivate SAU Perilla-1 for achieving higher seed yield and oil percentage in our country.

*Professor, Dept. of Agronomy, Sher-e-Bangla Agricultural University, Dhaka, Bangladesh