

STUDY OF BIO-FERTILIZER MIXED NUTRIENT SOURCES ON THE QUALITY SEED PRODUCTION OF RADISH VARIETIES

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Executive Summary

Radish (*Raphanus sativus* L.) is a popular and important vegetable crop in Bangladesh. Besides, tender leaves which are used as greens are rich in vitamin A and C. Roots are also rich in carbohydrate and protein. An experiment was conducted at the Central Farm of Sher-e-Bangla Agricultural University (SAU), Dhaka-1207, Bangladesh during the period from November, 2019 to April, 2020 to investigate on the effect of bio-fertilizer mixed nutrient sources on the quality seed production of radish varieties. Bio-fertilizers are natural fertilizers that are microbial inoculants of bacteria, algae and fungi, which can help biological nitrogen fixation for the benefit of plants. The seeds of BARI mula-1, BARI mula-2 and BARI mula-4 were collected from the BARI, Gazipur, Dhaka. This experiment was conducted with two factors: Factor-A (Variety)- (i) V₁- BARI mula-1 (ii) V₂- BARI mula-2 (iii) V₃- BARI mula-4; Factor-B: (Nutrients in absence or presence of bio-fertilizer) – (i) N₀- NPKSMoZn (standard dose) + without bio-fertilizer (ii) N₁- NPKSMoZn (standard dose) + Bio-fertilizer (iii) N₂- 50% CD+ 50% Vermicompost (iv) N₃- 50% CD + 50% Vermicompost + Bio-fertilizer. There are 12 treatment combinations such as V₁N₀, V₁N₁, V₁N₂, V₁N₃, V₂N₀, V₂N₁, V₂N₂, V₂N₃, V₃N₀, V₃N₁, V₃N₂ and V₃N₃. The two factors experiment was laid out in a RCBD with three replications. BARI recommended the following doses of manures and fertilizer (kg/ha): CD -25, VC- 6, Urea-300, TSP-200, MP-200, Borax-10, Sodium molybdate-2, ZnO-4 and Bio-fertilizer- 4 were applied. Seeds were sown on 15 November with 30cm x 30cm spacing, respectively. In case of different variety, maximum number of siliqua per inflorescence (132.42), number of seeds per siliqua (6.58), seed yield per hectare (1.38 t) were observed from V₃ treatment and for different nutrients, maximum number of siliqua per inflorescence (125.67), number of seeds per siliqua (6.20) and seed yield per hectare (1.33 t) were observed from N₁. Due to combined effect, at harvest the maximum number of siliqua per inflorescence (154.33), number of seeds per siliqua (7.27) and seed weight per hectare (1.59t) were obtained from V₃N₁ treatment combination and the minimum number of siliqua per inflorescence (61.0), number of seeds per siliqua (3.27) and seed weight per hectare (0.63 t) were produced from V₂N₂ treatment combination. So, the V₃N₁ treatment combination appeared as the best for achieving the higher growth and seed yield of radish.

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