

YIELD AND OIL CONTENT ASSESSMENT THROUGH NUTRIENT INTEGRATED MANAGEMENT IN SOYABEAN

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Executive Summary

The experiment was conducted in the experimental field of Sher-e-Bangla Agricultural University, Dhaka 1207 during the period from November, 2021 to March, 2022 to observe the effect of different combinations of nutrient management (organic, inorganic and bio fertilizers) on yield and oil content of soyabean. The experiment comprised two factors viz. factor A: Variety -2; i) BRRI Soybean6 (V_1) and ii) BU Soyabean2 (V_2) and factor B: integration of different nutrient combinations -8; viz.(i) Control [100% Recommended dose of chemical fertilizers (RDF)] (T_1), (ii) 75% RDF + 5 t ha⁻¹ poultry manure (PM) + Bio-fertilizer (T_2), (iii) 50% RDF + 5 t ha⁻¹ PM + Bio-fertilizer (T_3), (iv) 75% RDF + 5 t ha⁻¹ PM + Additional 15 kg S ha⁻¹ (T_4), (v) 50% RDF + 5 t ha⁻¹ PM + Additional 15 kg S ha⁻¹ (T_5), (vi) 75% RDF + Additional 15 kg S ha⁻¹ + Bio-fertilizer (T_6), (vii) 50% RDF + Additional 15 kg S ha⁻¹ + Bio-fertilizer (T_7) and (viii) 50% RDF + 5 t ha⁻¹ PM + Additional 15 kg S ha⁻¹ + Bio-fertilizer (T_8). The experiment was laid out following Randomized complete block design and replicated thrice. Data were collected on different aspects of growth, yield attributes, yield and oil content of soyabean. Results revealed that BU soybean 2 gave the highest grain yield (2642.7 kg ha⁻¹). This may be attributed to the highest number of pods plant⁻¹ (33.62), seeds pod⁻¹ (2.90) and 100 seeds weight (13.65 g) in this variety. This variety (BU Soybean2) also gave highest oil % (18.99%). Considering different combinations of nutrient treatments, T_8 (50% RDF + 5 t ha⁻¹ PM + Additional 15 kg S ha⁻¹ + Bio-fertilizer) treatment was highest grain yielder (2991.0 kg ha⁻¹) than other combinations comprised with organic, inorganic and biofertilizer, which may due to the highest pods plant⁻¹ (38.55), seeds pod⁻¹ (3.48) and 100 seeds weight (14.00 g) as well as highest oil% (19.32%) in this this treatment. Regarding the interaction of variety and different combinations of nutrients, the combination of variety BU soybean 2 and 50% RDF + 5 t ha⁻¹ PM + Additional 15 kg S ha⁻¹ + Bio-fertilizer (V_2T_8) was highest yielder among the other interactions, which was attributed to highest number of pods plant⁻¹ (42.80), seeds pod⁻¹ (3.77) and 100 seeds weight (16.45 g). On the other hand, this interaction also produces highest level of oil (19.80%) which was followed by V_2T_6 and V_2T_7 . It may be concluded from the results that for cultivating soybean BU soybean 2 with nutrient package comprised of 50% RDF + 5 t ha⁻¹ PM + Additional 15 kg S ha⁻¹ + Bio-fertilizer (V_2T_8) may be suggested for achieving higher yield and oil content of soybean.

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