

MINIMIZATION OF N ON YIELD, ORGANOLEPTIC AND QUALITY OF FRAGRANT RICE VARIETY

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Executive Summary

Low yield and inferior quality of fragrant rice varieties in Bangladesh are crucial bottleneck for the production of this type rice. The minimal nitrogen (N) application may improve the quality of fragrant rice. The study was conducted in the experimental field of Sher-e-Bangla Agricultural University, Dhaka during the period from June to December 2018. The experiment consisted of two factors: Factor A: 4 levels of nitrogen (N) as- 37.5 kg ha⁻¹(N₁), 40.0 kg ha⁻¹(N₂), N₃: 42.5 kg ha⁻¹(N₃), 45 kg ha⁻¹(N₄), and Factor B: 4 scented rice variety as- V₁: Kalizira, V₂: BRRI dhan34, V₃: Begun Bichi and V₄: Sada Sanne. Results revealed that nitrogen and/or different varieties had significant effect on most of the yield and quality contributing parameters. Effective tillers, filled grains, weight of milled rice, protein content, proline content and grain 2-AP content increased with increasing nitrogen level up to a certain level. But N level had no significant effect on 1000-grains weight, harvest index and amylose content among the four scented rice varieties. Among the treatment combinations, the highest number of effective tillers hill⁻¹ (15.40) and grain yield (3.47 t ha⁻¹) were found from N₃V₂. The maximum protein content (9.20%) was recorded from N₃V₄. The highest proline content (25.54 mg g⁻¹) was observed from N₃V₂. The maximum grain 2-AP content (1.06 µg g⁻¹) was recorded from N₃V₃. Data revealed that 42.5 kg N ha⁻¹ and BRRI dhan34 showed the best performance when considered yield with protein, amylose, proline and 2-AP content. Rice farmers can grow good quality BRRI dhan34 with high protein, amylose, proline and 2-AP content using only 42.5 kg N ha⁻¹ along with BRRI recommended other fertilizers without sacrificing yield.

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