

Nitrogen sources affected yield protein content, and nitrogen use efficiency of scented rice (*Oryza sativa*) under irrigated conditions

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Abstract

A field experiment was conducted during the *kharif* seasons of 2023 and 2024 at IFTM University, Moradabad, India to study the effect of different nitrogen sources and management practices on nutrient content, quality parameters, yield and nitrogen use efficiency of scented rice (*Oryza sativa* L.) under irrigated conditions. The experiment was laid out in a split-plot design with three scented rice varieties in the main plots- Pusa Basmati 1718, Pusa Basmati 1847 and Pusa Basmati 1886, and six nitrogen management practices in subplots: control, 100% N through prilled urea, 50% N through prilled urea + two foliar sprays of nano urea, 50% N through prilled urea + green manuring + one foliar spray of nano urea, 75% N through prilled urea + two foliar sprays of nano urea, and 75% N through prilled urea + green manuring + one foliar spray of nano urea. Results indicated that Pusa Basmati 1847 recorded significantly higher grain protein content, protein yield, total nitrogen uptake and grain yield (5.62–5.64 t/ha) compared with other varieties. Among nitrogen treatments, 75% N through prilled urea + green manuring + one foliar spray of nano urea produced the highest protein content (8.1–9.1%), protein yield (429.93–482.18 kg/ha), total nitrogen uptake (84.48–84.64 kg/ha) and nitrogen recovery (45.26–68.33%), along with maximum grain yield (5.28–5.29 t/ha). The study highlights the potential of integrating prilled urea, nano urea and green manuring to improve grain quality, nutrient uptake and nitrogen use efficiency in scented rice under irrigated conditions.

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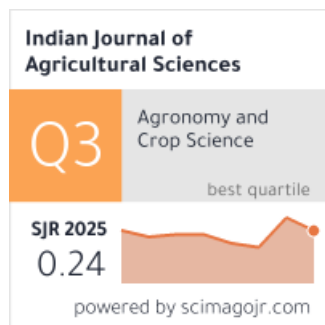
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