

Response of Different Plant Spacings and Nitrogen Levels on Yield and Economics of Black Rice

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ABSTRACT

Black rice has more amount of antioxidants than any other rice varieties. It is considered to have multiple benefits in human health due to the presence of different antioxidants in the grain. A field experiment was conducted during the rainy season of 2021 to assess the yield and economics of black rice production under different crop geometries and nitrogen levels in Bapatla. The black rice variety of BPT-2841 was evaluated under different plant spacings (10 cm x 15 cm, 15 cm x 15 cm, 20 cm x 10 cm, 20 cm x 15 cm) and the levels of nitrogen (90 kg N ha⁻¹, 120 kg N ha⁻¹, 150 kg N ha⁻¹) for the yield and economic returns. An increase in spacing induced vigorous plant growth as well as increased the number of yield attributing characters leads to increased economic returns. The spacing 20 cm x 15 cm proved more appropriate because it produced the better plant stand, gave more panicle density and higher grain yield results in greater net returns than other three spacings tested. The nitrogen level of 150 kg N ha⁻¹ produced significantly the highest yield and the economic returns as compared with all other levels of nitrogen tried.

Keywords: *Antioxidants, Planting density and Nitrogen levels.*