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254-4 Nitrogen Use Efficiency In Lowland Rice Genotypes Under Field Conditions.

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Rice is staple food for more than 50% of world population. Nitrogen is one of the most yield limiting nutrients for lowland rice production around the world. Two field experiments were conducted at two locations for two consecutive years to evaluate nitrogen use efficiency of 12 lowland rice genotypes. Growth, grain yield and yield components were significantly influenced by nitrogen as well as genotype treatments. Location X year X genotype and location X year X nitrogen interactions were significant for most of the growth, yield and yield components, indicating influence of these factors on yield and yield components. Overall, most N efficient genotypes measured in terms of grain yield were BRA 031032, BRA 031044 and BRA 02654 and most inefficient genotypes were BRS Jaçana, BRS Fronteira and BRA 02674. Genotypes were having linear and quadratic responses to added N in the range of 0 to 200 kg ha⁻¹. Nitrogen significantly influenced plant height, shoot dry weight, panicle number and thousand grain weights. Nitrogen use efficiency (kg grain per kg N applied) varied from 33 to 49 kg grain per kg N applied, with an average value of 40 kg grain per kg N applied. The genotype BRA 031044 produced highest N use efficiency and lowest N use efficiency producing genotype was BRS Fronteira. There was a significant linear association between N use efficiency and grain yield.

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