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Research Article

RELATIONSHIP AMONG GLYCEMIC INDEX WITH PHYSICO-CHEMICAL TRAITS OF BRRI HYBRID RICE VARIETIES

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ABSTRACT

Various rice grain qualities could be the determinants of safe consumption, especially for diabetic or non-diabetic individuals. The present investigation was conducted to assess the interrelationship between the glycemic index with the biochemical and cooking properties of six BRRI hybrid rice cultivars, along with their categorization and subsequent relationship. Biochemical traits, like protein, moisture, fat, ash, fiber and amylose content, and cooking properties, including length-breadth ratio, grain elongation, cooking time, water uptake ratio, gel consistency and an alkali spreading test were measured. The result revealed that most of the BRRI hybrid rice cultivars possessed intermediate- class amylose varying from 20.87% to 24.30% along with medium Glycemic Index of 56.31 to 63.83, except BRRI hybrid dhan 4 which had a low amylose content of 17.23% with a high Glycemic Index of 70.89. Heera2 had a minimum L/B ratio of 2.35 mm, a high cooking time of 20 minutes. BRRI hybrid dhan 6 had a maximum L/B ratio of 3.76 mm, a low cooking time of 16 minutes, and a high alkali spreading value of 6.42. On the other hand, BRRI Hybrid Dhan2 had a low alkali spreading value of 3.92. According to gel consistency, both the soft gel and medium gel consistency rice were found in this experiment. The Glycemic index of BRRI hybrid rice varieties correlated positively with milled rice length, a length-breadth ratio, gel consistency and also, correlated negatively with water uptake ratio, amylose content, milled rice breadth, cooking time, an alkali spreading value and grain elongation.