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Effect of degree of milling on physicochemical, structural, pasting and cooking properties

of short and long grain *Indica* rice cultivars

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Abstract

The effects of degree of milling (DOM) between 0 and 8% on physico-chemical, structural, pasting and cooking properties of short and long grain *Indica* rice cultivars were studied. Ash, protein, lipids and minerals decreased while blue value and crystallinity increased with increase in DOM. The colour parameters (a^* , b^*) and cooking time (CT) decreased while L^* (lightness) increased with increase in DOM. Elongation ratio (ER), gruel solid loss (GSL), length/breadth (L/B) and paste viscosities during cooking increased with increase in DOM. Short grain rice contained lower ash, protein, lipids, Mn, K, Ca, CT and GSL than long grain while the later showed higher crystallinity, Mn, P, K, Ca and ER. Paste and dough characteristics measured using Rheometer and Mixolab, respectively correlated well and differed with cultivar and DOM. Short and long grain cultivars showed variation in loss of different chemical constituents during varied DOM causing variation in cooking characteristics.

Keywords: Cooking; Degree of milling; Mixolab; Pasting; Rice

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