

Physical properties, milling, cooking, eating and nutritive qualities of some recently recommended popular rice (*Oryza sativa*) varieties in Sri Lanka.

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Physical properties, milling, cooking, eating and nutritive qualities of fifteen recently recommended popular rice (*Oryza sativa*) varieties in Sri Lanka were determined with the aim of appraising rice breeders and millers on relative merits of different varieties to improve inherent quality of rice and also, optimize rice processing operations.

Fifteen recently recommended rice varieties namely, Bg304, Bg305, Bg357, Bg358, Bg403, AT303, AT354, AT362, AT402, AT405, Bg352, Bg360, Bg300, Bg94/1 and Bg359 were tested in this study. The grain length, thickness, moisture content, hardness, true and bulk densities and porosity were determined as physical properties. The milling qualities such as total milling yield, head rice yield, husk percentage and the broken percentage were also measured. The nutritive qualities such as crude protein, crude fat, total ash, starch, crude fiber, vitamin B complex and mineral contents were assessed in both brown rice and polished rice. Cooking time, water uptake ratio, alkali spreading and clearing value, gelatinization temperature and sensory qualities were determined to assess the cooking and eating qualities of the rice.

The results of the study indicated that physical properties, milling, nutritive, cooking and eating qualities vary significantly ($\alpha = 0.05$) among different varieties. Important correlations were found among grain quality parameters. The total milling yield was negatively correlated to the paddy husk content. Grain length was positively correlated to broken percentage ($r = 0.61$). Hardness was negatively correlated to broken content ($r = 0.23$). The crude protein content of unpolished rice varieties varied between 9.45 and 10.75% and for polished rice, varied between 7.15 and 8.36%. Crude fat, crude fibre, total ash and minerals were found to decline by one fold

and vitamins were found to reduce by three folds due to milling process. Cooking time varied from 16 to 33 min. among varieties. Bg 403 and AT405 showed lesser cooking time among the selected varieties. Eating qualities were better in Bg360 and AT405 rice varieties.