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Evaluation of rice grain quality in some Sri Lankan rice varieties

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Grain quality in rice is an important component determining domestic consumption, and local and international trade. Rice grain structure is heterogeneous; each grain contains specialized regions, that differs in character which affect grain characteristics such as hardness, nutrient content, vitamins, minerals, lipids, proteins, dietary fibre etc.

In Sri Lanka, valuable reserves of rice (*Oryza saiva L*.) germplasms are available at Regional Rice Research and Development Centre (RRRDC), Bombuwala for breeding to develop and improve new rice varieties with enhanced grain quality. The present study describes evaluation of some grain quality characters in 22 rice varieties obtained from Bombuwala during 2005/2006 maha season, for protein and lipids as main indices of chemical parameters and pericarp colour and grain size as physical parameters in order to evaluate germplasms for breeding programmes.

Rice samples were dehusked and the whole grain was used for the evaluation of physical parameters, while the whole grain milled to particle size 0.5 mm was used for the evaluation of chemical parameters. Established procedures were used for the determination of physiochemical characters; protein and fat by kjeldhal method (N x 5.95) and soxhlet extraction method respectively, while pericarp colour and grain size by visual observation and grain length to width ratio respectively.

Results indicated high protein levels of 12.1-11.0 % w/w on dry weight basis, present in Rathal, Bg 360, Bw 272-6b, Bw 361, Ld 356, Kalu Heenati, Sudu Heenati, Devaraddhari, Beath Heenati, Molligoda and, Kahata wee, where as the rest contained protein levels of 11.0-9.6 % w/w on dry weight basis. Fat contents present in varieties, vary in the range of 3.9 - 2.3 % w/w on dry weight basis. Pericarp colour is either red or white and further indicated that it does not depend on the nutrient content of the grain. Most of the grains are mainly intermediate or it's combinations in grain size while the rest is long grain and small grain. These results will aid the breeders to improve grain with proper combinations of nutrients and consumer acceptance.

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