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Extraction and characterization of arabinoxylans from bran of BG 352 rice variety

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Rice bran is one of the major under-utilized cereal by-product in Sri Lanka. The arabinoxylans have been identified as the major component of cereal brans.When isolated, they show high water holding capacity and solubility, and industrially, they are used as good thickening agents, molecular binding agents, and stabilizing agents. This study was conducted with the objective of extracting and characterizing the arabinoxylans from a Sri Lankan rice variety. In the present study the arabinoxylans were extracted from the bran of BG 352 rice variety, using alkali extraction procedure, and characterized for total soluble pentosans content, equivalent weight, solubility, and water holding capacity using standard methods. The extracted fraction contained 33.2 ± 4.0 % (DM, Dry extract) of total pentosans and the equivalent weight was 1002 ± 41. The percentage solubility after 0.5, 1, 2, and 3 hours were 62.01%, 76.92%, 87.72%, and 91.60% respectively which showed an increment at a reducing rate. The fraction showed a water holding capacity of 1.57 ± 0.04 g/g (Dry basis). The isolate contained a considerable percentage of pentosans and had a linear relationship between the solubility and the time. In conclusion, the extracted fraction of the rice bran showed a potential to be used as a food ingredient.

Keywords: Rice bran, arabinoxylans, total pentosans, equivalent weight, solubility

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