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Abstract

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Effect of Flour-Blasting Brown Rice on Reduction of Cooking Time and Resulting Texture

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Long-grain nonparboiled, long-grain parboiled, and American basmati-type brown rice were bombarded with parboiled rice flour particles to create microperforations on the water-resistant outer layer of the kernels. These microperforations in the treated rice significantly increased the rate of hydration. Optimum conditions to produce microperforations without removal of the bran included air pressure maintained at 413 kPa and a parboiled rice flour average particle size of 124 μm . The optimum blasting time was 40–60 sec, depending on the type of rice. The relative hardness of the fully cooked flour-blasted rice was the same at half the cooking time of the untreated brown rice but % water absorption of the untreated flour-blasted brown rice was higher because it required longer time to cook. Overall, untreated brown rice was $\approx 4.7\%$ higher in % water absorption due to longer cooking time in comparison with the treated counterpart. The blasting treatment resulted in shorter cooking time and firmer and less gummy cooked rice as compared to freshly cooked untreated brown rice.

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