

Hydrothermal treatment to increase head rice yield and improve palatability Characteristics of rice

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A major loss occurring in rice during Postharvest operations is the breakage of kernels during processing, which involves conversion of paddy (rough rice) in to edible rice. Broken kernels are essentially a loss, because they have much lower market value than head rice. Parboiling of paddy reduces the level of breakage of rice during milling. However, some consumers, especially those who are used to eating raw (non-parboiled) rice, dislike the colour and also the cooking and eating qualities of parboiled rice. The present study was carried out to develop a mild hydrothermal treatment that could be applied to paddy, by controlling soaking and steaming times, which would minimize grain breakage during milling and, at the same time, preserve the whiteness, cooking and palatability characteristics of raw (non- parboiled) rice.

Freshly harvested paddy belonging to the variety BG 352 was used for the study. Experimental samples were subjected to different soaking times namely 2,4,6,8,10 and 12 hours by immersing in water at ambient temperature (28 ± 2 °C). The paddy soaked for different periods was then steamed, with non-pressurized steam at 100°C, for different time periods namely, 15,20,25,30 and 35 minutes. The treated paddy samples were dried in the shade until the moisture content was reduced to 14% and then analyzed for the following: total milling yield; grain breakage; and whiteness and lower percentage of grain breakage were selected for sensory evaluation to test the palatability characteristics.

The results revealed that by soaking paddy for 2 hours in water at ambient temperature and steaming the soaked paddy for 25 minutes can produce rice with improved milling qualities comparable to parboiled rice and palatability characteristics similar to raw rice.