

## **Effect of Soaking Water Quality on Quality of Parboiled Rice**

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*Institute of Post Harvest Technology, Research and Development centre, Jayanthi Mawatha, Anuradhapura.*

Parboiling of rice is an ancient traditional process of Asian countries and it's reducing the level of grain breakage and increase in head yield of rice during milling. Broken kernels are essentially a loss, because they have much lower market value than head rice. Generally, parboiling process consists of three stages: soaking the cleaned raw rough rice to saturation moisture content, gelatinization of rice starch by adding heat to the moist kernels through steaming, and drying the product to moisture content suitable for milling or storage. Parboiling is also improved nutritive and some sensory qualities of rice.

The market demand of the parboiled rice also depends on its other quality parameters such as kernel whiteness and hardness (texture). Even though many factors contributing in quality of parboiled rice, soaking water quality, procedures and steaming procedures impart effect on quality of parboiled rice. It can be observed, quality of parboiled rice varies from place to place although, parboiling treatments are similar. Water used for soaking is varies according to area in Sri Lanka. Underground water is the main water source used for soaking of paddy in parboiling most of rice mills in Sri Lanka. It was observed that lot of chemical such as  $\text{CaCO}_3$ , Cl irons;  $\text{NO}_3$  and Fluoride irons are soluble in ground water available in dry zone. Hence this research study mainly forces to evaluate, whether chemical water quality of soaking water affected for parboiled rice quality. Experiment was conducted using BG-358 rice variety. The results shown that  $\text{CaCO}_3$  concentration of the soaking water significantly affected only for changing of rice kernel whiteness (colour) in parboiled rice.  $\text{CaCO}_3$  concentration in the soaking water was not significantly affected for changing of other rice quality parameters such as kernel hardness, broken grain percentage and head rice yield percentage. High  $\text{CaCO}_3$  concentration show significant improvement (increased) in terms of kernel whiteness (colour), Chlorine iron

concentration of the soaking water significantly affected only for changing of rice kernel hardness (texture) in parboiled rice and also it was not significantly affected for changing of other rice quality parameters such as kernel whiteness, broken grain percentage and head rice yield percentage. Chlorine iron concentration in soaking water was not shown improvement pattern of rice kernel hardness.