

## 2. AN ALTERNATING METHOD OF SOAKING PADDY FOR PARBOILING

A.R. ARIYARATNE AND K. KATHIRGAMU

*Department of Agricultural Engineering, Faculty of Agriculture,  
University of Peradeniya.*

Poor quality parboiled rice is a result of improper soaking practices. Some farmers practice soaking paddy in running water to obtain higher quality parboiled rice. Based on this practice, an improved soaking method was designed and tested in this study to overcome the problems encountered in commercial level rice processing.

Instead of submerged soaking in cold or hot water, spraying of cold water for different durations with varying idle times were applied to soak paddy samples. The spraying was done in 5, 10 and 15 minute durations. The interval between these sprays were varied by 30, 60 and 90 minutes. These treatments were tested for 30, 36, 42 and 48 hours of total soaking periods. The soaked samples were steamed for 20 minutes under atmospheric pressure.

Parboiled paddy samples were oven dried at 45°C until moisture content reached 14-15%. Milling was done in a rubber roll sheller and polished to remove 6% of bran by weight. The percentage of milling turnout, head rice yield and broken percentages were obtained from the samples. In addition, number of grains with white bellies were counted. Cooking quality was observed by sensory evaluation.

Milling turnout was not significantly different among treatments at a given total soaking duration. The highest milling turnout was observed at the 48 hour total soaking duration.

The percentage of white bellies decreased significantly with the increase in soaking period. In 48 hour soaking period, grains reached the 30% moisture content which is the required minimum for complete gelatinization of starch. In any soaking duration spraying resulted in less white bellies than the continuous soaking.

The broken percentage in all treatments decreased with the increase in soaking duration. Treatments in spray soaking indicated significantly lower broken than the continuous soaking treatments.

In all the treatments, paddy samples soaked for 48 hours were cooked and taken for sensory evaluation. Colour, flavor, smell and general acceptability showed significant differences among treatments, and there was no significant difference in texture and stickiness at 5% level. Paddy sprayed for 15 minutes with 30 minute idling time for a total period of 48 hours scored highest in the sensory evaluation.

The spray soaking of paddy can be used to improve the quality of parboiled paddy. The experimentation has to be conducted at commercial scale to develop the suitable design criteria.

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