



Combined effect of hot water soaking and submerged aerated soaking on paddy hydration

M.I.H.F. Risviya¹, A. Thusalini¹ and N. Kannan^{1,*}

¹ Department of Agricultural Engineering, University of Jaffna, Sri Lanka.

* Corresponding author email: aenkanna@gmail.com

Abstract: Paddy parboiling is an important step in paddy processing. It generates a significant amount of effluent. The treatment of this highly contaminated effluent is complex. There are limited studies available on the combination of hot water soaking and submerged aerated soaking of paddy parboiling of long and short paddy grains in the terms of hydration. Therefore, this study was set to explore the scientific insights of the combination of hot water soaking and submerged aerated soaking on hydration of long and short paddy grains. The paddy grain characteristics, moisture content and elongation percentage, were measured at two hours interval and six hours interval for hot water soaking and submerged aerated soaking respectively. Results indicated that the grain moisture of 29% (wb) for long grains and grain moisture of 30% (wb) for short grains were obtained in eight hours of soaking with the combination of hot water soaking and submerged aerated soaking concepts. However, the hydration rate was high for hot water soaking compared to the submerged aerated soaking. The elongation ratio was also influenced by different soaking methods. The effect of hot water soaking on the elongation percentage of long and short paddy grains was higher value compared to submerged aerated soaking. The combination of hot water soaking and submerged aerated soaking reduced the soaking time significantly with quick hydration. Therefore, this novel protocol is useful for paddy processors to use required resources sustainably.

Keywords: Aeration, Paddy parboiling, Submerged soaking