

Abstract

Performance analysis of experimental impeller and rubber roll huskers was carried out using three different varieties of rice namely; Akitakomachi (short grain), Delta (long grain) and L201 (long grain). Impeller husker speed was varied from 1400 to 3300 rev/min and rubber roll husker clearance was varied from 0.4 to 2.4 mm. In rubber roll husker, rough rice was husked randomly and as single grain vertically and horizontally. For both huskers, variation of husked ratio with specific husking energy was well expressed by the Weibull's distribution function. Husking energy efficiency, system cracked ratio and system broken ratio curves were well expressed by the empirical equations. The three performance parameters were used to optimize the husking performance of the two huskers for the three varieties of rice. Rubber roll husker had high husking energy efficiency compared to impeller husker for randomly husked short grain rice and for all the three varieties of rice husked as single grain. Optimal husked ratio in terms of husking energy efficiency was also found to be optimal in terms of system cracked ratio and system broken ratio for all the three varieties of rice.