Title An Improved Method for the Production of White Rice with Embryo in a Vertical Mill
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Abstract

This study was carried out to improve a vertical mill to produce white rice with embryo of 15·0–16·5% moisture content. Milling experiments were conducted by modifying a vertical mill in a rice mill plant. The effects of rice moisture content and the shaft speed of the mill on embryo adherence ratio, whiteness, broken rice ratio, and cracked rice ratio were investigated with short grain rice. The effect of the mesh size of emery stones on the embryo adherence ratio was also investigated. The embryo adherence ratio of white rice decreased rapidly with the increase of the moisture content of brown rice. The embryo adherence ratio increased by 10·3 and 11·0%, respectively when brown rice samples with moisture contents of 16·2 and 15·5% were milled by the vertical mill with a shaft speed of 900 min^{-1} and emery stones of mesh size no. 50 instead of mesh size no. 35.The optimal milling conditions of the vertical mill for producing embryo rice were a moisture content of about 15%, shaft speed of 900 min^{-1}, emery stones of mesh size no. 50, zero outlet resistance and milling rate of 2·3 t h^{-1} considering the embryo adherence ratio, broken rice ratio, and whiteness of milled rice.