Title Industrial paddy drying and energy saving options

Author Weerachet Jittanit, Natthiga Saeteaw andApinya Charoenchaisri

Citation Journal of Stored Products Research,Volume 46, Issue 4, October 2010, Pages 209-213

Keywords Drying; Paddy; LSU dryer; Fluidised bed dryer; Energy

Abstract

Paddy drying is an energy-intensive process and influences rice quality. In this study, the energy consumption of paddy drying in a large-scale milling plant was investigated. Furthermore, some drying experiments were conducted in a laboratory. The aims were to gain practical information and to propose more economical drying options to the industry. The results indicated that the current drying in the plant consumed specific primary energy of between 3.874 and 4.421 MJ/kg of water evaporated. The experimental results showed that two-stage drying with tempering by using a fluidised bed dryer at 100–110 °C in the first stage and drying with ambient air using a solar dryer for the second stage provided rice quality that was comparable to that of the plant. Also, from the calculation, the energy cost of the plant could be reduced if an in-store dryer was used after the first-stage drying by LSU dryer.