

Title Effects of Drying Using Fluidization Technique with Tempering on Aroma and Milling Qualities of Khao Dawk Mali 105, *Oryza sativa* L.

Author C. Borompichaichartkul, R. Impaprasert

Citation Proceedings: Abstract Summary, International Conference on Agricultural, Food and Biological Engineering & Post Harvest/Production Technology, Sofitel Raja Orchid Hotel, Khon Kaen, Thailand, 21-24 January 2007. 204 p.

Keywords Fluisization; Tempering; Khao Dawk Mali 105

Abstract

A combination of high temperature fluidization (> 100 °C) and tempering is employed to dry Thai fragrant rice paddy (Khao Dawk Mali 105, *Oryza sativa* L.) to the safe storage level of moisture content at 13-14 % wb. The aroma and milling qualities are studied as the effect of drying process and storage period. Thai fragrant rice paddy is dried into two stages of drying. First stage is high temperature, using a fluidized bed dryer and then followed by tempering for 30 minutes and back to high temperature fluidized bed drying, or shade drying, until moisture content decreased to safe storage. The experimental results show that after drying, it is found that drying temperatures have effects on Head Rice Yield (HRY), white index and 2AP content. Most of the drying temperature gives the low level of HRY, except for 150°C which had significant increasing of head rice yield ($p \leq 0.05$). However, when replace the second fluidization with shade drying after the first fluidization and tempering, HRY increases significantly especially at 135 and 150°C ($p \leq 0.05$). During storage, white index and 2AP content decrease significantly ($p \leq 0.05$), while HRY was not changed. When compare between ambient temperature (28-30°C) and 15°C storage conditions, it is found that the suitable condition to maintain 2AP content and white index of fragrant rice is 15°C. However, the storage condition does not significantly affect the HRY ($p > 0.05$). The information obtained from this study will benefit the Thai fragrant rice industries for appropriate drying strategies for Thai fragrant rice.