

Title Aroma enrichment and the change during storage of non-aromatic milled rice coated with extracted natural flavor

Author Natta Laohakunjit and Orapin Kerdchoechuen

Citation Food Chemistry, Volume 101, Issue 1, 2007, Pages 339-344

Keywords *Oryza sativa* L.; Surface coating; Pandan; Aroma enrichment; Flavor volatiles; ACPY; Lipid oxidation; Grain storage

Abstract

Three non-aromatic rice varieties (RD23, SPR1 and SPR90) were coated in a modified spouted bed with 30% sorbitol-plasticized rice-starch film containing 25% pandan (*Pandanus amaryllifolius* Roxb.) leaf extract produced by the supercritical fluid with carbon dioxide extraction method. The coated and uncoated samples and uncoated aromatic rice (KDML and PTT1 varieties) were packed in plastic bags (nylon15/PE20/LLDPE75) and stored at 25 °C for 6 months. Gas chromatography–mass spectrometry analysis revealed that the coating treatment resulted to similar flavor volatile profile as that of aromatic varieties, particularly the presence of 2-acetyl-1-pyrroline (ACPY) which is the main volatile compound responsible for the jasmine aroma. ACPY was absent in uncoated non-aromatic rice and ACPY content of non-aromatic rice coated with natural pandan extract was lower than that of uncoated aromatic rice. During storage, ACPY levels decreased. Coated non-aromatic rice retained higher ACPY levels than the aromatic PTT1 variety. The coating treatment also reduced the *n*-hexanal content of stored grains. Thus, the coating technique is a promising approach for rice aroma improvement and at the same time, for reducing the potential for oxidative rancidity during grain storage.