# Effect of Accelerated Aging Treatments on Aroma Quality and Major Volatile Components of Thai Jasmine Rice

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## ABSTRACT

***The effect of accelerated aging (AA) treatments on aroma quality and major volatile components of freshly-harvested Thai jasmine rice cv. Khao Dawk Mali 105 was investigated. Freshly-harvested milled rice were exposed to three AA conditions which were 100°C for 100 min, 110°C for 45 min and 120°C for 25 min, and then their aroma quality was evaluated. The aroma quality was assessed on the basis of the quantity of aroma-impact compound, 2-acetyl-1-pyrroline (2AP), and an off-odor compound, n-hexanal, using GC-FID. Other volatile components were also analyzed by GC-MS. Results revealed that the quantity of 2AP and n-hexanal decreased in AA samples. However, the AA rice had better aroma quality when compared with that of 3-month naturally-aged rice. Analysis of rice volatile components indicated that the AA treatments did not affect the volatile constituents that make up for odor character of this aromatic rice. Thirteen identified compounds: n-hexanal, n-heptanal, 2-acetyl-1-pyrroline, benzaldehyde, 1-octen-3-ol, 2-pentylfuran, 1-octanol, n-nonanal, n-dodecane, n-decanal, n-tridecane, (E)-2-tetradecene and n-tetradecane, found in freshly-harvested rice, were all present in the AA samples with no addition of new volatiles. From these results, it can be concluded that the AA technique can bring freshly-harvested rice cv. KDML 105 to advanced stage of aging while still maintaining its high aroma quality.***

**Key words:** Aromatic rice, Accelerated aging, 2-acetyl-1-pyrroline, n-hexanal, Volatile components