

Title Differences in cooking and eating properties between chalky and translucent parts in rice grains
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Abstract

Differences in cooking and eating properties between chalky and translucent parts of rice grains were investigated in samples from six *indica* rice varieties with different palatabilities. A differential scanning calorimeter (DSC), rapid visco analyzer (RVA) and texture analyzer were employed for determining physicochemical parameters, which were used as indirect indicators of cooking and eating quality. The results showed that the chalky part in milled rice had a dramatically higher transition temperature (T_o , T_p , T_c) and ΔH than the translucent part and the difference was much larger than that among varieties. Meanwhile, the chalky part had lower GC, SP and higher hardness than the translucent part, while there were slight or little differences in RVA properties and AC between the two parts. It may be suggested that the higher transition temperature and ΔH associated with higher chalky occurrence are major cause of deteriorated cooking quality due to increased energy requirement for gelatinization, in addition to the adverse effect of chalk occurrence on the visual appearance of rice.