

Comparison of starch properties of rice varieties in different eating quality

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Abstract

Rice (*Oryza sativa* L.) is one of the most important food crops in the world. The eating quality of cooked rice is the most important trait *japonica* rice breeding in Korea. Rice varieties that produce kernels that are firm and fluffy after cooking are generally favored in countries such as India, Pakistan, and Indonesia. Whereas varieties with kernels that maintain its shape, glossiness, savory odor, stickiness, and tenderness when cooked are preferred in Korea. This study analyzed the major physicochemical components of rice grain associated with the eating quality of 20 *japonica* rice varieties. Physicochemical components such as the amylose content, protein content, amylographic characteristics of polished rice, and texture of cooked rice were tested using a Tensipresser as alternative indirect methods in determining rice eating quality. Evaluation of eating quality of cooked rice using sensory test was conducted with 20 well trained members. The 20 rice varieties in different eating quality showed amylose contents of 17 ~ 20%. The amylose content of rice varieties had negative correlation with peak viscosity, however positive correlation with setback viscosity was observed. The stickiness and adhesiveness of cooked rice showed correlation with the amylose content and amylopectin chain length distribution. Rice varieties with good eating quality showed less retrogradation of cooked rice and higher hot viscosity of rice flour in amylogram.

Keywords: *japonica* rice varieties, starch properties, eating quality

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