

Establishment of Rice Eating Quality Equations¹

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ABSTRACT

The objectives of this research were to establish the equations of the palatability evaluation for rice quality breeding in the future. The best equation of stepwise regression analysis between physicochemical properties and overall sensory evaluation (OVE) in *indica* rice was: $OVE = 1.1947 - 0.0317 (\text{hardness}) + 0.1656 (\text{relative breakdown}) + 0.3614 (\text{serine}) + 0.2669 (\text{glutamic acid}) + 0.8473 (\text{half cysteine}) + 1.3124 (\text{histidine}) - 3.6536 (\text{tryptophan}) - 2.3662 (\text{alanine})$, $R^2=0.981$; while, the best OVE equation of *japonica* rice was: $OVE = +3.3896 - 0.2678 (\text{hardness}) - 0.1591 (\text{prolamin}) - 0.3247 (\text{tyrosine}) - 0.0284 (\text{gelatinization of initiation}) + 0.0009 (\text{hot-paste viscosity})$, $R^2=0.706$. These results indicated that the best regression equations of *indica* rice could explain the 98.1% variation of OVE and the equation might be used as the criterion of OVE in the breeding program to improving the rice quality. However, the best equation of *japonica* rice could only explain the 70.6% variation of OVE. It was suggested that the equation was not good enough for the evaluation of OVE.

Key words: rice, eating quality equations, physicochemical properties.

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