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Method for Measuring the Degree of Maceration of Fermented Soybean

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The force-deformation curve of bulk soybean fermented with *Rhizopus* could be described by the equation, $F=C(\Delta e)^n$. The degree of maceration of fermented soybean (a measure of softness) was estimated by the *n*-value of the power of the equation and depended on the *Rhizopus* strain used. Of the *Rhizopus* strains tested, *R. oligosporus* TISTR3001 (well known as a dominant tempeh processing species) and *Rhizopus* sp. LKN (isolated from a tempeh starter) gave high degrees of maceration corresponding to *n*=1.3 (initial value of 1.8) and 1.6 (initial value of 1.8) respectively, for 60 h of fermentation of raw soybeans at 30°C. On the other hand, the *R. oligosporus* TISTR3001 and *Rhizopus* sp. LKN for sterilized soybeans decreased to *n*-values of 1.5 from initial value of 1.7 and to 1.3 from initial value of 1.7, respectively, for 60 h of fermentation at 30°C. *n*-Values less than 1.5 were considered to indicate a considerably high degrees of maceration.

Keywords: degree of maceration, soybean, fermentation, *Rhizopus*

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