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WANLOP CHANASATTRU : RHEOLOGICAL PROPERTIES OF TAPIOCA FLOUR AND
GLUTINOUS RICE FLOUR. THESIS ADVISOR : ASST. PROF. KALAYA
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The objectives of this research are to study the rheological properties such as flow-behavior index (n) and consistency index (K) of tapioca and glutinous rice flour slurries during gelatinization using Brookfield Viscometer RVT, and the effects of concentration (1-5%), temperature (65-85°C) and shearing time (2-10 minute) on these properties. The values of n and K of tapioca flour were found to be 0.359-1.821 and 0.0025-2.3009 Pa.s ^{n} , while those of glutinous rice flour were 0.257-2.160 and 0.0014-4.2123 Pa.s ^{n} , respectively. The values of n for both flours were found to be polynomial function with concentration and temperature. At constant temperature, n decreased linearly with an increasing concentration. At constant concentration the relationship between n and temperature followed the Arrhenius equation with the activation energies 15.90-44.40 and 31.55-49.38 KJ/mol, for tapioca and glutinous rice flour, respectively. The values of K for both flours were found to be polynomial function with concentration, temperature and time. At constant temperature and time, K increased exponentially with concentration. At constant concentration and time, K of tapioca flour was found to be a negative parabola with temperature, while those of glutinous flour increased with temperature and followed the Arrhenius equation with the activation energy of 76.07-144.57 KJ/mol.