

Process optimization of fatty acids production from soybean oil via continuous subcritical water mediated hydrolysis

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Continuous hydrolysis of soybean oil in subcritical water to produce fatty acids (FA) was performed without catalysts. Response surface methodology (RSM) was used to evaluate the relationship between the FA content and reaction parameters, such as reaction temperature, reaction pressure, reaction time, and the molar ratio of water to oil. A central composite design was employed to fit the available response data to a second order polynomial RS model. The optimal conditions maximizing the FA content was investigated. Under the optimal reaction condition, experimental result was comparable to prediction value with insignificant error.