



Food Science and Technology Research Japanese Society for Food Science and Technology Available Issues **Publisher Site** Japanese Author: ADVANCED Volume Page Go Keyword: Search Register **TOP > Available Issues > Table of Contents > Abstract** ONLINE ISSN: 1881-3984 PRINT ISSN: 1344-6606 Food Science and Technology Research Vol. 9 (2003), No. 1 pp.76-78 [PDF (67K)] [References]

Optimization of Emulsifying Activity of Soy Protein Isolate Using Computer-Aided Techniques

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(Received: July 12, 2002) (Accepted: September 19, 2002)

The random-centroid optimization (RCO) method using computer was applied to determine the optimum conditions of the emulsifying activity of soy protein isolate. Levels of factors including the temperature during emulsification, pH of the protein solution and the concentration of NaCl were optimized. After the second cycle of measurement of the emulsifying activity in 22 samples, we were able to determine the optimum conditions for practical use, namely, a temperature of 30°C, pH 8.2, and concentration of NaCl of 0.35 mol/l. We concluded that this RCO method is suitable for the optimization of food processing conditions with a minimum number of measurements.

Keywords: random-centroid optimization, emulsion, soy protein isolate

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To cite this article:

Optimization of Emulsifying Activity of Soy Protein Isolate Using Computer-Aided Techniques Masayoshi SAITO, FSTR. Vol. 9, 76-78. (2003).

doi:10.3136/fstr.9.76 JOI JST.JSTAGE/fstr/9.76

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