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Optimization of seaweed and water content for the production of seaweed paste using response surface methodology

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Abstract : The effects of seaweed concentration on the quality characteristics of seaweed paste [seaweed 30-70% (w/v), water 30-70% (w/v)] of *Kappaphycus alverazii* species were evaluated by response surface methodology (RSM) to determine the optimum amount of ingredients. The interactive effect of fresh seaweed and water percentage on the hardness and gel strength (g) of the paste was determined. Results showed that the experimental data could be adequately fitted into a second-order polynomial model with multiple regression coefficients (R^2) of 0.9805 and 0.7931 for the hardness and gel strength respectively. The hardness and gel strength of seaweed paste were dependent on the ratio of fresh seaweed mixing with water. The proposed optimum amount of ingredients for the production of seaweed paste is at percentage of 44.97 % fresh seaweed and 55.02 % water content. Based on the result obtained, the RSM demonstrated a suitable approach for the adding ingredients optimization of *Kappaphycus alverazii* paste.
Keywords: seaweed paste, kappaphycus alverazii, response surface methodology.

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