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# OPTIMIZATION OF NATURAL PIGMENTS EXTRACTION FROM AMARANTHUS TRICOLOR L

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## Abstract

In this study, microwave-assisted extraction (MAE) of natural pigments (betacyanin and betaxanthin) from *Amaranthus tricolor* L leaves were investigated and optimized using four factors (microwave power, pH, extraction time and solid-liquid ratio) five level central composite rotatable response surface design. Second order polynomial mathematical models were developed for the responses from the experimental data in order to predict the experimental data. From the results, it was observed that, microwave power, pH and solid-liquid ratio were significantly influenced the extraction yield of pigments. Optimal condition for maximum extraction yield of pigments was attained using Derringer's desired function methodology and under this condition, the actual yield of pigments was well correlated with predicted values.

**Keywords:** Natural pigment, Extraction, *Amaranthus tricolor* L leaves, Central composite design, Optimization.

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