Title High yield of pectin from dragon fruit *(Hylocereus Polyrhizus)* peel

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Abstract

Hot acid extraction was applied for pectin extraction from dragon fruit *(Hylocereus polyrhizus)* peel powder and the extraction conditions were optimized using response surface methodology. Twenty treatments were assigned based on the central composite design (CCD) at five variation levels with blocked design which allowed the estimation of individual and interaction factors effects independently. Three independent variables were studied which were temperature (50-80°C), time (40-150 min) and pH (2.5-4.0). The experimental data were fitted to a second-order polynomial equation using regression analysis. The results indicated that pH was the main factor influencing the pectin yield which increased with decreasing pH, and increasing temperature and time. Based on the 3-D response surface and contour plots, the optimum conditions for extraction of pectin from dragon fruit peel were at 67.5°C for 72.25 min and at pH 2.0. The experimental value of 51.44% pectin yield was statistically compared with the predicted value of 55.20% yield given by the model. Hence, the experimental value was found to be in close agreement with the predicted ones.