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Optimization of drum drying processing parameters for production of asam pedas culinary powder using response surface methodology

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Asam Pedas is very popular spicy traditional gravy among Malaysian. However, its preparation was quite tedious and involved many steps from peeling ingredients, blending and cooking. Therefore, there were different brands of Asam Pedas paste in Malaysian market as a convenience product for busy and modern lifestyles. This current study was aim to optimize the production of Asam Pedas powder from its paste to have longer shelf life, convenience storage and also for culinary cube application using a laboratory scale double drum dryer. The effect of two parameters namely; steam pressure and ratio of drum rotation speed on physical and organoleptic properties of the powder were investigated by response surface methodology (RSM). The results indicated that both parameters significantly ($p<0.05$) affected the colour, bitterness and overall acceptability of the powder. Second-order polynomial model was fitted for the significant responses. Increasing the steam pressure will reduced the score of overall acceptability from hedonic test and Hunter L, a, b values while enhanced the bitterness. The optimum drum drying process performed at 5.0 bar of steam pressure with 2.00 ratio of drum rotation speed was recommended to produce good quality of Asam Pedas culinary powder.

Keywords: Asam Pedas, Culinary Powder, Drum Drying, Drum rotation speed, response surface methodology, Steam Pressure.

Biography:

Norzaleha Kasim has been in food science & technology field for more than 15 years. After graduating my Bachelor degree in Food Science & Technology, I worked at multinational company in food production line. However, due to my interest in research & development of food product, I continue my Master Degree in Food Science at Universiti Putra Malaysia. Then, I joined Malaysian Agricultural Research & Development Institute (MARDI) as research officer in 2014. Till now, I've been involved in more than 10 projects in developing food products such as beverages, snacks, confectioneries, culinary paste and powder.

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