

DEVELOPMENT OF A LOW CALORIE RED DRAGON FRUIT
JAM

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ABSTRACT

This study aimed to develop a low calorie red dragon fruit jam by optimizing the levels of Low Methoxyl Pectin (LMP), Calcium Chloride, and artificial sweetener (Aspartame) using response surface methodology (RSM). A Box-Behnken design was used in optimizing the formulations for low calorie jam. Initially, fifteen different formulations were carried out and were analyzed using Quantitative Descriptive Analysis (QDA) among the trained panelists. Results obtained from the trained panelists were used to optimize the formulations again using RSM. Once again, another fifteen formulations form in RSM but only two jam formulations were used in developing the low-calorie red dragon fruit jam. Three jam samples were used in sensory evaluation including the two jam formulations with one commercial jam. The arrangements of the scores for overall acceptability of low calorie red dragon fruit jam were color and sourness. From the data obtained, most panelists prefer commercial jam compare to the two optimized low calorie formulations. Among jam with formulation I (A) and jam with formulation II (B), more panelists prefer sample B. Statistical analysis of pH, total soluble solids, water activity, and microbiological counts after one-month storage were carried out. The water activity of low calorie jam after one month storage was found to be 0.931 which is slightly decreases and the Brix was 7.6°. At the same time, pH decreased to 2.86. As a conclusion, low calorie jam has a great market potential both local and internationally. Therefore, effort for developing and improving low calorie jam was important.