

Pornrath Theimitthapap 2014: Development of Instant Hor-Mok Powder from Red Kidney Bean (*Phaseolus vulgaris L.*). Master of Science (Agro-Industrial Product Development), Major Field: Agro-Industrial Product Development, Department of Product Development. Thesis Advisor: Associate Professor Kamolwan Jangchud, Ph.D. 111 pages.

Instant Hor-Mok powder from red kidney bean (RB) was developed as a nutritional product with protein and fiber supplement from RB. The objectives of this study were to study the effect of type and quantity of ingredients on the quality of this type of instant Hor-Mok powder, and to optimize the ingredients which were contained in the product. The formulation showed that the optimum ratio of cooked RB to other ingredients was 30:100 with 30% red curry paste. All ingredients including cooked RB and red curry paste were mixed and dried to obtain Hor-Mok powder as a main ingredient, which could be further develop. A 3x3 factorial arrangement in a completely randomized design (CRD) with three levels of egg powder (6.25%, 12.50% and 18.75% of total ingredients), and three levels of hydrocolloid (0.00%, 0.05% and 0.10% of total ingredients) was used to improve the texture of the product. The reformed Hor-Mok could be obtained by microwaving the dried powder mixed with water at a ratio of 1 to 3 for 1 minute. Results from a sensory evaluation using a 9-point hedonic scale employing the response surface method (RSM) showed that an increase in egg powder and hydrocolloid increased the hardness liking and overall liking scores of the product. The optimum ingredients to produce the instant Hor-Mok consisted of 14.00% to 18.75% of egg powder and hydrocolloid of 0.06% to 0.10% of total ingredients. The formula produced an overall liking score of 7.0. The moisture content, protein, fat, ash, crude fiber and carbohydrate were 4.24%, 26.18%, 18.96%, 8.51, 7.36% and 34.75%, respectively. The a_w of the product was 0.31. The consumer acceptance test revealed that around 86% of consumers accepted the product, and overall liking score of the product was “moderately like”. The shelf life of the instant Hor-Mok powder from red kidney bean packed in laminated aluminum foil stored at 30 ± 2 °c was at least 8 weeks.

Student's signature

Thesis Advisor's signature