

Piyawan Chammingkwan 2006: Product Development of Batter from Cassava Flour, Hom Mali Rice Flour and Thao Yai Mom Flour. Master of Science (Agro-Industrial Product Development), Major Field: Agro-Industrial Product Development, Department of Product Development. Thesis Advisor: Assistant Professor Thongchai Suwonsichon, Ph.D. 214 pages. ISBN 974-16-2213-9

The aim of this research was to develop dry mixed batter product from cassava flour(C), Hom Mali rice flour(R) and Thao Yai Mom flour(T). Two hundred consumers from survey were asked to rate important scores of buying decision variables. Results showed that the textural quality was the most important factor for consumer buying decision. Consumers needed product having moderately hard and highly crispy texture of fried food. They also wanted pepper, salt and garlic powder added into the dry mixed batter product. Mixture design, simplex axial design with three components were applied to formulate 10 different ratios of C:R:T. The physical, chemical, descriptive sensory and affective tests(9-point hedonic scale) were conducted to evaluate these mixed batters. The result showed that the optimum C:R:T ratio was 50:50:0. The final dry mixed batter was composed of cassava flour 40.8 %, Hom Mali rice flour 40.8%, pregelatinized cassava flour 6.5 %, pepper 3.3 %, salt 2.9 %, baking powder 2.5 %, garlic powder 1.6 % and sugar 1.6 %. It had percentage of moisture content,  $a_w$  and whiteness index equaled to 9.23 %, 0.427 and 87.11, respectively. Application of this flour for making deep-fried coated shrimp were tested. Each raw shrimp was dipped into batter having 100 gram of dry mixed batter and 160 ml water before being deep fried at 170 °C for 7 min. The final textural qualities of maximum force, distance at maximum force, work and apparent fractal dimension( $D_f$ ) were 14.07 N, 1.48 mm, 0.008 J and 1.22, respectively. The final descriptive sensory intensities of yellow-brown color, hardness and fracturability were 12.75, 4.90 and 10.70, respectively. One hundred consumers tested deep fried shrimps coated with the developed batter and commercial product. They slightly liked both of them and gave insignificantly different overall liking scores( $p > 0.05$ ). Home use test using 127 consumers also confirmed that they liked this developed product very much and 97.6 % of them accepted the overall quality. This developed product maintained its qualities over 3 months without changing any textural and sensory qualities. Raw material and packaging cost was 6.40 baht per 150 gram of net weight product.

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