

Pimthawal Garaipoom 2006: Development of Vacuum Fried Soft Shell Crabs. Master of Science (Fishery Product), Major Field: Fishery Product, Department of Fishery Product. Thesis Advisor: Assistant Professor Jiraporn Runglerdkriangkrai, Ph.D. 127 pages.  
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Vacuum fried whole soft shell crab is semidried product which has high potential for production. Therefore, vacuum fried soft shell crab was developed from mud crab (*Scylla serrata*). The studies were conducted on the effects of shell hardness on quality, the frying condition under vacuum (760 mmHg), consumer acceptability and quality changes during storage.

It was found that shell hardness at level 2 (moderately soft) and 4 (moderately rough) showed no significant differences on appearance, color, odor, flavor, paper-like feeling and overall-liking ( $p>0.05$ ). Comparing conditions of vacuum frying conditions at 100 °C for 25 minutes, 110 °C for 20 minutes and 120°C for 15 minutes and spinning condition at 500 rpm for 5, 7 and 10 minutes, it was shown that oil content of the product decreased when the spinning time increased ( $p\leq 0.05$ ). Frying at 120°C for 15 minutes and spinning at 500 rpm for 5 minutes were suitable condition providing products with the highest preference scores on texture and overall-liking and minimum damage from spinning. The color value of developed product in  $L^* a^* b^*$  were  $31.24 \pm 0.57$ ,  $12.37 \pm 0.21$  and  $11.57 \pm 0.49$ , respectively. The  $a_w$  and cutting force were  $0.79 \pm 0.01$  and  $80.50 \pm 0.04$  N, respectively. Proximate analysis showed that the vacuum fried soft shell crab had the moisture, protein, fat, carbohydrate and ash as  $21.87 \pm 0.67$ ,  $18.32 \pm 0.31$ ,  $38.64 \pm 0.49$ ,  $15.49 \pm 0.35$  and  $5.68 \pm 0.21\%$ , respectively. Consumer test from 100 people indicated that 86% of consumers accepted this product at moderate liking scores on appearance, color, odor, flavor and overall-liking. Products packed in plastic box and put into laminated bags (NYLON/LLDPE) with oxygen absorber both under ambient air and vacuum were accepted within 48 days when stored at  $32 \pm 2^\circ\text{C}$ . At  $4-6^\circ\text{C}$ , the products were accepted for 85 days under ambient air and more than 90 days under vacuum condition. The results from QDA showed that products stored at  $32 \pm 2^\circ\text{C}$  had higher brown color intensity, more rancidity and tough than those stored at  $4-6^\circ\text{C}$ . Vacuum packaging and storing at  $4-6^\circ\text{C}$  reduce color change, rancidity and texture change ( $p\leq 0.05$ ).

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