Nowwapan Noojuy 2009: Model of Hazard Analysis Critical Control Point (HACCP) System for Microbial Safety of Salted Crab (*Neoepisesarma mederi,* H. Milne Edwards 1853) Product. Master of Science (Fishery Products), Major Field: Fishery Products, Department of Fishery Products. Thesis Advisor: Assistant Professor Kangsadan Boonprab, Ph.D. 180 pages.

Salted crab (*Neoepisesarma mederi*, H. Milne Edwards 1853) is a traditional food which is generally consumed in Thailand. Its production was done by fermentation of fresh crab with salt solution at room temperature for an appropriate time. This work was aimed at proposing the model for the Hazard Analysis Critical Control Point (HACCP) system for salted crab products for consumer safety through the study on 1) the nature of food safety problem in salted crab products. 2) Hazard Analysis Critical Control Point system (HACCP) of the product 3) establishing document for HACCP model. The results showed that 1) for the consumer behavior study *via* questionnaire for 100 persons at popular shopping malls the data indicated that the most of consumers were women (20-25 years old) with bachelor degree level. They were ill after consuming, thus they need the controlling processing for food safety requirement. The product was consumed once to twice a week *via* ready to eat food shop through papaya slad (Som-tum). From salted crab in local markets in Bangkok the contaminant of total viable count (TVC), *Escherichia coli*, *Staphylococcus aureus* and *Salmonella* sp. were 100, 100, 30 and 2.5 % of all samples, respectively. pH, acid concentration, sodium chloride concentration and a_w were in range of 7.87-8.82, 0.04%-0.11%, 15.05%-33.95% and 0.72-0.83, respectively. *Vibrio cholerae*, *V. parahaemolyticus*, *Clostridium perfringens*, *Bacillus cereus*, yeast and mold were not found. 2) These results were correspond to the hazard founded in laboratory salted crab with Good manufacturing practice (GMP) control except *Salmonella* sp. This indicated that the hazard must be controlled *via* HACCP system under GMP management. The criteria of fresh crab for raw material to control hazard of product through the fresh raw material controlling showed, the predicted equation of storage time and sensory character using, QIM (Quality Index Method: sensory evaluation scoring system) according to specific scoring scheme, microbiological index and chemical index of storage time at room temperature were Y= 0.84X- 1.32 (r^2 = 0.96); X= time (storage time), Y= QIM score (Quality Index Method), TVB-N (Total Volatile Basic – Nitrogen) and total mesotrophic bacteria with the lowest criteria acceptability for consuming 21.00±1.00, 59.56 ±5.70 mg/100 g sample, 7.56±0.25 log CFU/g, respectively, and at iced storage, the predicted equation was Y=1.44 X+3.57 (r^2=0.93); QIM, TVB-N and total psychrotrophic bacteria with the lowest criteria acceptability for consuming were 22.00±1.00 score, 28.99±0.94 mg/100g sample and 7.49±0.16 log CFU/g, respectively. For the hazard analysis in raw material and product through 4 steps of the processing line [Receiving and washing crab (1), Saturated salt solution preparation (2), Salt addition (3), and Crab fermentation (4)], in raw material: fresh crab had TVC, *E. coli*, *S. aureu*s and Slightly halotrophic bacteria (SHB), salt (from the sea) had TVC, SHB and Extremely halotrophic bacteria (EHB), in processing line; washing fresh crab (1) had TVC, *E.coli*, *S. aureus* and SHB, saturated salt (2) had TVC and SHB, crab with saturated salt at 0 hour (3) had TVC, *E.coli*, *S. aureus* and SHB and crab with saturated salt at 24 hour. (4) had TVC, *S.aureus* , SHB and EHB. For the determination of the critical control point (CCPs) using decision tree, the CCP demonstrated as saturated salt preparation step (CCP1) and crab fermentation step (CCP2). The critical limits at CCP1 was boiling unsaturated salt at 100^{o}C for at least 20 minute. This condition was confirmed through the decreasing of pure isolated SHBs from solar salt and saturated salt solution. The critical limits at CCP2 was salt concentration in salted crab at least 25% of NaCl. This was confirmed by the decreasing a number of the pure culture of *E. coli* and *S. aureus* and pure isolated culture (SHB) from washed fresh crab and fresh crab. The monitoring at CCP1 and CCP2 were proposed for the controlling of temperature and time to boil saturated salt through checking every lot of the processing by production team and the controlling of salt concentrate in salted crab through randomized checking in salted crab every lot by production team, respectively. The validation at CCP1 and 2 and the verification of HACCP plan of processing line by the comparison between with and without HACCP plan application using eneumeration the microbiological hazards in raw material and product through processing line was performed. The decreasing of them in the processing with HACCP plan from the treatment without HACCP plan was shown. From all of results and conclusion, the establishment of HACCP plan model of Thai salted crab processing to conduct food safety of salted crab product to consume has been proposed in the thesis.

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