Issaree Eungrasamee 2007: Quality Characteristics of Blue Swimming Crab (*Portunus pelagicus*, Linnaeus 1758) Meat Fed *Gracilaria edulis* (Gmelin) Silva. Master of Science (Fishery Products), Major Field: Fishery Products, Department of Fishery Products. Thesis Advisor: Assistant Professor Mayuree Chaiyawat, M.S. 145 pages.

The aims of this study were to study on growth of blue swimming crab and quality characteristic of crab meats fed with the different diets. The possibility of using red seaweed as feedstuff or supplementary feed for the cultures and fattening of blue swimming crabs was studied. The crabs were reared in the experiment concrete tanks capacity 8 m^3. Four diets (chopped fish, moist pellets, moist pellets with red seaweed and red seaweed) were given to the crabs for 8 weeks. The fattening of crabs with 7 diets (chopped fish, mussels, moist pellets, chopped fish with red seaweed, mussels with red seaweed, moist pellets with red seaweed and red seaweed) was carried out as well for 4 weeks.

The results of rearing crabs with initial weight of 25 g for 8 weeks showed that crabs fed chopped fish had the highest gain weight (128.64%). Crabs fed with moist pellets had the highest survival rate (90.00%). Crabs fed red seaweed had proximate composition and cholesterol content lower than other diets ($P \leq 0.05$), but arginine content as well as methionine content were higher than others (1.59 and 0.33 g/100g, respectively) ($P \leq 0.05$). No significant differences were observed in fatty acid profile ($P > 0.05$). Color of the crab meats in each part was significantly different: crab meats fed red seaweed showed the lowest lightness but the highest redness. Crab meats fed moist pellets had the highest toughness (9.35 N). No significant differences in taste, odor and texture of crab meats were found.

The results of fattening crabs with initial weight of 100 g for 4 weeks showed that crabs fed mussel had the highest gain weight (38.79%). Crabs fed mussel with red seaweed had the highest survival rate (88.33 %). Crabs fed with red seaweed had proximate composition, amino acid and fatty acid content differed and lower than the other diets: they had the highest methionine, EPA and DHA content (0.37 g/100g, 20.93 and 2.50% respectively). Crabs fed mussel with red seaweed had the highest cholesterol content (63.50 mg/100g). Astaxanthin of crabs fed with red seaweed was the highest (10.32 μg/g). Color of the crab meats in each part was significantly different: crab fed with red seaweed had the lowest lightness but the highest redness. Toughness of crab meats fed mussel was the highest (11.45 N). A sensory evaluation revealed some significant differences in firmness, juiciness, odor and overall acceptance. Claws and legs meats had significant differences in color. Therefore it is concluded that the red seaweed is possibly used as supplementary feed for the crab cultures or fattening of crabs to improve the quality of the crab meats.

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