Noppadol Srisuksai 2008: Induction of Triploidy in Giant Freshwater Prawn *Macrobrachium rosenbergii* (de Man, 1879). Master of Science (Agricultural Biotechnology), Major Field: Agricultural Biotechnology, Interdisciplinary Graduate Program. Thesis Advisor: Professor Uthairat Na-Nakorn, Ph.D. 68 pages.

Despite of its popularity among consumers, the culture of giant freshwater prawn *Macrobrachium rosenbergii* (de Man, 1987) not yet reaches a commercial stage due to low yield per unit area which is partly responsible by the strong territorial behavior after sexual maturation of males. Therefore, the present study was performed aiming at identifying the factors for successful induction of triploidy by chemical shock in *M. rosenbergii*. Three factors, time (min after fertilization) when a shock starts, shock durations and concentrations of Cytochalasin B (0.2, 0.3, 0.4, 0.5 and 0.6 mg/l diluted in 0.1% DMSO), were used to induce triploidy. It should be noted that the shock was performed by soaking a female with fertilized eggs attached to the pleopods into CB solution.

The results showed that the concentration of CB affected the occurrence of polyploidy wherein 0.3-0.5 mg/l of CB resulted in the highest occurrence of polyploidy (77.78-100%). These concentrations lowered the hatching success of the treated eggs to 17.42% (0.3 mg/l), 28.48 and 27.26% (0.4 and 0.5 mg/l respectively) which were lowered than those of the control groups (58.06-58.89%). However, shock durations (10 and 15 min) and time at the commencement of the shock (15-20 min, 21-25 min and 26-30 min after fertilization) did not affect the occurrence of polyploidy and hatching rates. It was noteworthy that the shock resulted in both triploid and tetraploid larvae except for the shock with 0.3 mg/l CB that produced 100% triploid larvae.

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