

Methawee Rodmongkoldee 2009: Effect of Stocking Density and Water Management System in Female Broodfish Pond of Walking Catfish (*Clarias macrocephalus*) after Synthetic Hormone Injection on Stress and Reproduction. Master of Science (Aquaculture), Major Field: Aquaculture, Department of Aquaculture. Thesis Advisor: Assistant Professor Ruangvit Yoonpundh, D.Tech.Sc. 82 pages.

The effects of stocking density and water management system in female broodfish pond of walking catfish (*Clarias macrocephalus*) after synthetic hormone injection on stress and reproduction were studied. Walking catfish were stocked at 5, 10, 15 and 20 female m^{-2} in water flow - through and no water exchange system. The results of the experiments showed that the cortisol and 17β - estradiol level were not significant differences ($p>0.05$) between treatments. The percentage of spawning females was the highest (90 %) when broodfish stocked at 20 female m^{-2} in water flow - through system but no significant differences ($p>0.05$) between treatments. The hatching rate of eggs was the highest (84.4 %) when broodfish stocked at 20 female m^{-2} in water flow - through system. The hatching rate of eggs when broodfish stocked in water flow - through system was significantly higher ($p<0.05$) than no water exchange system. The yolk - absorbed fry was the highest (84.3 %) when broodfish stocked at 10 female m^{-2} in water flow - through system. The yolk - absorbed fry when broodfish stocked in water flow - through system was significantly higher ($p<0.05$) than no water exchange system. The survival rate of broodfish was the highest (95%) when broodfish stocked at 20 female m^{-2} in water flow - through and no water exchange system and the lowest (60%) when broodfish stocked at 5 female m^{-2} in water flow - through system and significantly lower than other treatments. The results of this study were demonstrated that the stocking density at 20 female m^{-2} in water flow - through system after synthetic hormone injection was suitable for reducing the mortality of broodfish.

Student's signature

Thesis Advisor's signature

____ / ____ / ____