
# BIO-ECONOMIC EVALUATION OF SOFT SHELL CRAB FARMING SUBJECTED TO THE REMOVAL OF A SINGLE AND DOUBLE CHELIPEDS OF MUD CRABS

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Roll No.: 0117/01
Registration No.: 00459
Session: January-June, 2017

**The thesis submitted in the partial fulfillment of the requirements for the degree of Masters of Science in Aquaculture**

**Department of Aquaculture**
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**Chittagong Veterinary and Animal Sciences University**
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**JUNE 2018**

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**Mohammad Redwanur Rahman**

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**This is to certify that we have examined the above Master's thesis and have found that is complete and satisfactory in all respects, and that all revisions required by the thesis examination committee have been made**

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**The author**

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# List of abbreviations

| Words | Abbreviation |
|---|---|
| % | Percent |
| BCR | Benefit-Cost Ratio |
| BOBP | Bay of Bengal Programme |
| EPB | Export Promotion Bureau |
| FAO | Food and Agriculture Organization |
| FY | Fiscal Year |
| GIF | Gonad Inhibiting Hormone |
| gm | Gram |
| hr | Hour |
| IPCC | Intergovernmental Panel on Climate Change |
| kg | Kilogram |
| mg | Milligram |
| MIH | Moult Inhibiting Hormone |
| MT | Metric Ton |
| ppt | Parts Per Thousand |
| SGR | Specific Growth Rate |

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# ABSTRACTS

This study was conducted to develop a sustainable culture technique for soft-shell crab farming in Bangladesh by applying claw ablation. The present study successfully manipulated the moulting duration of crabs by declawing and the production of crabs was significantly higher than non-ablated crabs. A series of experiments were conducted where one groups of crabs remained intact (T1) and in other groups claw/claws (T2, T3 and T4) were removed/ablated. In T2 groups, only one claw was removed, both claws in T3 groups and in T4, two both claw ablated crabs were kept in one culture box. Individual crabs were then allowed for moulting for at least two moulting cycle (120 days). Results showed that, claw ablation significantly reduced the aggressiveness and cannibalistic behavior in the culture condition. Weight gain was also significantly higher ($p< 0.001$) in the both claw ablated crab than intact one in both $1^{st}$ and $2^{nd}$ moulting duration. Carapace length measurement also showed significant difference. Carapace length was 8.57 ± 1.47 cm after $2^{nd}$ moulting in the non-ablated crabs while in the both ablated crabs it was 9.33 ± 1.46 cm. The moulting duration was also significantly reduced from average 40.28±7.21 days to 29.88 ± 6.59 days by removing claws. The overall production was 2052g, 2436g, 2876g and 3942g respectively for four treatments. Though mortality was little high in the double stocking groups, it can be minimized by harvesting one crab after $1^{st}$ molting. Cost-benefit analysis showed that, the net profit was almost double in the cheliped removal system which made the techniques more sustainable and profitable one. Mud crab production with claw ablation techniques in the soft-shell farming system could therefore be profitable and demanding culture techniques in Bangladesh.

**Keywords:** Soft-shell crab, Cannibalism, Chelipeds, Claw ablation, Moulting