

Is MANGROVE CRAB AQUACULTURE profitable?

Mangrove crab is considered a good product choice due to its high commercial value. The price of crablets varies according to their size. Bigger crablets sell at a higher price. Nursery is one form of product development that adds value to the smallest crabs sold to farmers.

Technical assumptions

Broodstock	
Percent broodstock required	13
Percent of broodstock that will survive, mature and give viable zoeae	46
Average body weight of broodstock	600 g
Average zoeae produced/female	1,200,000
Total number of zoeae produced	7,200,000*
Hatchery	
Total larval tank capacity (natural food tanks not included)	80 tons
Stocking density of larvae	80/liter
Total zoeae required for stocking	6,400,000
Percent of zoeae that will survive to C1 C2 crablets	2
Number of runs/year (minimum)	7

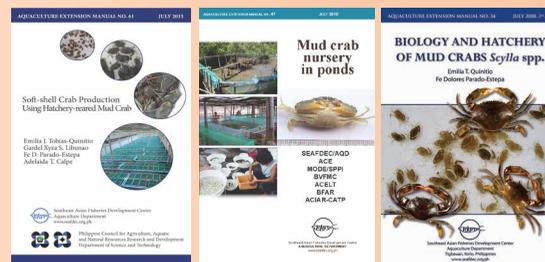
Costs-and-returns

Sales of crablets	
Quantity	128,000
Unit Cost (PhP)	2.50
Value (PhP)	320,000
Total Variable Cost	143,918
Total Fixed Cost	117,294
Net Income/run	58,789.00
Net Income/year	411,519.58
ROI	26.85
Payback	2.41

*of the 7,200,000 zoeae produced only those actively swimming are selected for stocking

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(L-R) AEM 61 Soft-shell Crab Production using Hatchery-reared Mud Crab (2015), AEM 47 Mud Crab Nursery in Ponds (2010), AEM 34 Biology and Hatchery of Mud Crabs *Scylla* spp. (2008, 2nd edition). Check out our online bookstore for more titles: www.seafdec.org.ph/bookstore

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MANGROVE CRAB

Hatchery and Nursery Operations

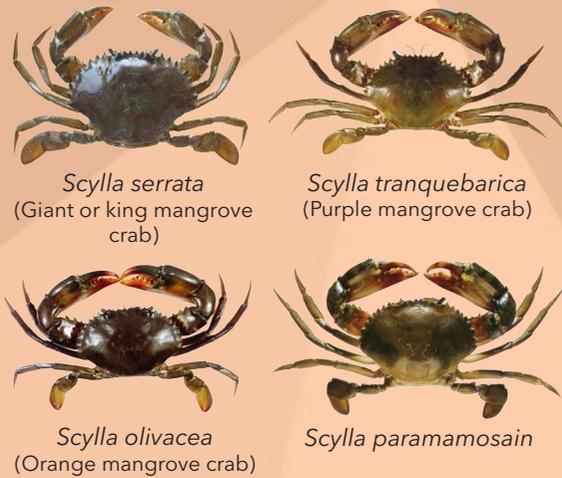


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Why MANGROVE CRAB?

Mangrove crabs (*Scylla* spp.) or mud crabs, locally known as “alimango,” inhabit muddy and sandy bottom in brackishwater and marine environments. They dig deep burrows in mangroves and soft substrates in shallow or intertidal waters.

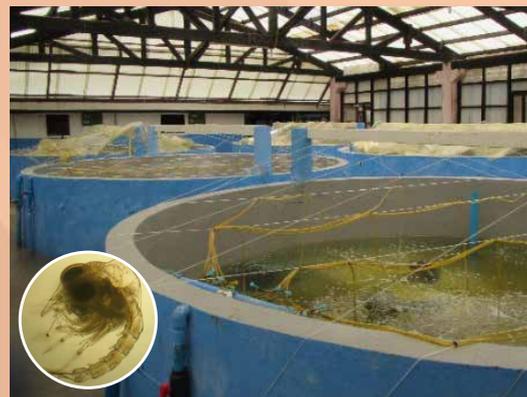
Widespread interest in *Scylla* species is increasing due to their demand both locally and internationally. Northern Mindanao, Central Luzon, Western Visayas and Bicol Region are the top producers of mangrove crabs in the Philippines.



How to culture MANGROVE CRAB?

Hatchery

Healthy mature female crabs with complete limbs are chosen as broodstock. The crabs are maintained in the tank with sand substrate until they spawn. After hatching of eggs, the zoeae (larvae) are stocked in tanks at 80-100 individuals per liter. Figure 1 shows the feeding and water management schemes for mangrove crab larvae. Megalopae or crab instar (crablets) are transferred in tanks or net cages and cultured for 3-4 weeks. These are fed minced fish and mussel meat alternately.



SEAFDEC/AQD's mangrove crab hatchery. Inset: mangrove crab zoea 4

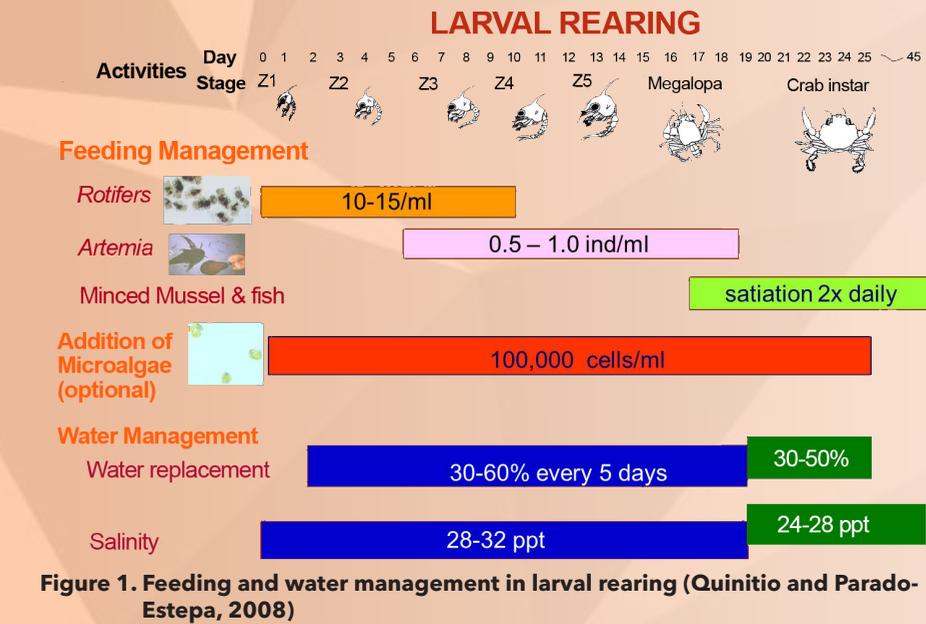


Figure 1. Feeding and water management in larval rearing (Quinitio and Parado-Esteva, 2008)

Suitable ranges of water quality for mangrove crab larvae

Temperature	27-30°C
Salinity	28-33 ppt
Dissolved oxygen	>4 ppm
pH	7.5-8.5
Photoperiod	natural
Light intensity	natural

Nursery site selection

A brackishwater earthen pond for fish or shrimp farming can be used for mangrove crab nursery. The site must:

- Have clay or clay-loam soil to easily retain water
- Have adequate supply of clean brackishwater or seawater
- Be protected from flood and siltation
- Be near the roads, source of crablets, traders and market
- Have electric power



SEAFDEC/AQD's mangrove crab nursery in pond at Dumangas Brackishwater Station

Nursery

Nursery is the intermediate phase between the hatchery and grow-out phases. Crablets from the hatchery are reared to the desired size for grow-out phase. Crablets measuring 0.5-0.6 cm carapace width (CW) are grown to 1.5-2.0 cm in net cages or *hapas* that are installed in ponds (Phase 1). Since some farmers prefer bigger crabs, the crablets from Phase 1 nursery are harvested, sorted and further cultured until they reach 2.5-4.0 cm CW (Phase 2) in net cages or ponds with fence.

The ponds with net cages are enclosed with net fence to avoid entry of other species of crabs which may damage the net cages. To minimise cannibalism, the cages are provided with net shelters that serve as hiding place for newly-molted crabs. Feeding consists of chopped mussel meat, low value fish, snail meat, or chicken entrails at satiation or 100% of total weight of stocked crablets per day. If formulated feed is available, a combination of 25-30% formulated feed +70-75% wet feeds will be a better alternative. Stocking density is 30-50/m² in Phase 1 and 5-10/m² in Phase 2. Crablets can be harvested after 3-4 weeks in each phase.

Packing and transport

Crablets smaller than 2.0 cm CW are transported in oxygenated plastic bags with cool water (24°C). Crablets of more than 2.0 cm CW are transported in boxes with wet cloth or sand. Crabs are better transported early in the morning, late afternoon or during cool weather.



Packing of crablets harvested from the hatchery



Stocking of crablets in net cages installed in nursery ponds after acclimation. Inset: crablets stocked in pond



Stocking of crablets in net-lined pond.



Feeding of crablets in net cages in pond



Crablets ready for packing and transport to be stocked in grow-out pond