

Southeast Asian Fisheries Development Center

Aquaculture Department

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Brochures and flyers

2016

Mangrove crab hatchery and nursery operations

Aquaculture Department, Southeast Asian Fisheries Development Center

SEAFDEC Aquaculture Department. (2016). Mangrove crab hatchery and nursery operations [Brochure]. Tigbauan, Iloilo, Philippines: Author.

<http://hdl.handle.net/10862/3539>

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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

Total larval rearing capacity (tons)	80
Broodstock	
% Broodstock that will survive and spawn	45
Average zoeae/female	1,200,000
Average body weight of broodstock (g)	600
No. of successful spawners needed	5
No. of broodstock to be purchased	12
Kg broodstock to be purchased	7
% of body weight used as basis of feeding	5
Hatchery	
Stocking density of larvae/liter	80
Total no. of zoea to be stocked at maximum capacity	6,400,000
% survival from zoea to C ₁ C ₂ (crab instars)	3
No. of crab instar produced/run	192,000
Number of runs/year	6
Selling price of C ₁ C ₂ (per piece, PhP)	3.50

Costs-and-returns

Sales of crablets	
Quantity	192,000
Unit Cost (PhP)	3.50
Value (PhP)	672,000
Total Variable Cost	118,373
Total Fixed Cost	136,250
Net Income/run	417,377
Net Income/year	2,504,262.50
ROI	42.01
Payback	2.01

Need ASSISTANCE?

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(L-R) AEM 34 Biology and Hatchery of Mangrove Crabs *Scylla* spp. (2018, 3rd edition), AEM 61 Soft-shell Crab Production using Hatchery-reared Mud Crab (2015), and AEM 47 Mud Crab Nursery in Ponds (2010). Check out our online bookstore for more titles: www.seafdec.org.ph/bookstore

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Mangrove Crab Hatchery, Nursery and Grow-out Operations
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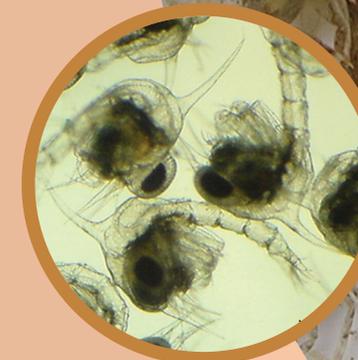
SEAFDEC Aquaculture Department
5021 Tigbauan, Iloilo, Philippines
Tel: (63-33) 330 7000; 511 9170
aqdchief@seafdec.org.ph
www.seafdec.org.ph



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MANGROVE CRAB

Hatchery and Nursery Operations

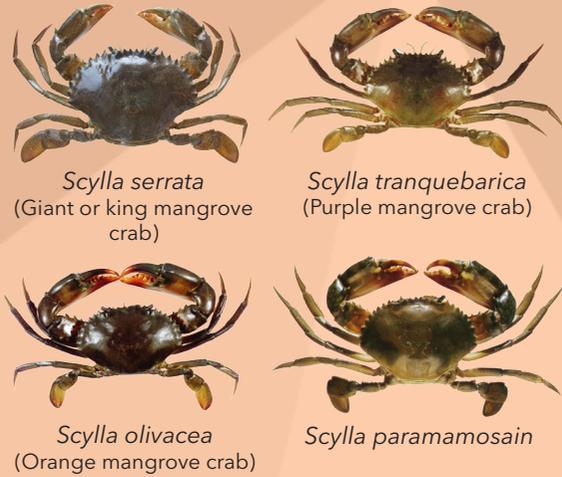


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Why MANGROVE CRAB?

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.

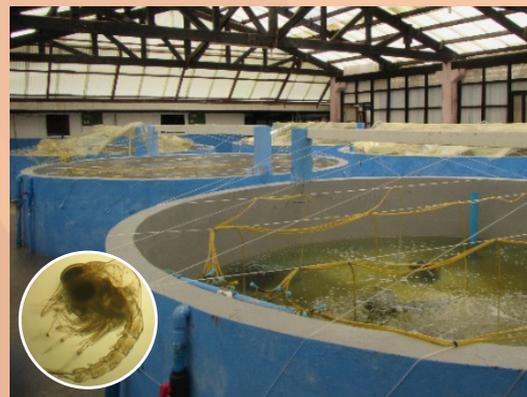
Widespread interest in *Scylla* species is increasing due to their demand both locally and internationally. Northern Mindanao, Central Luzon, Western Visayas and Bicol Region are the top producers of mangrove crabs in the Philippines.



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 60-80 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

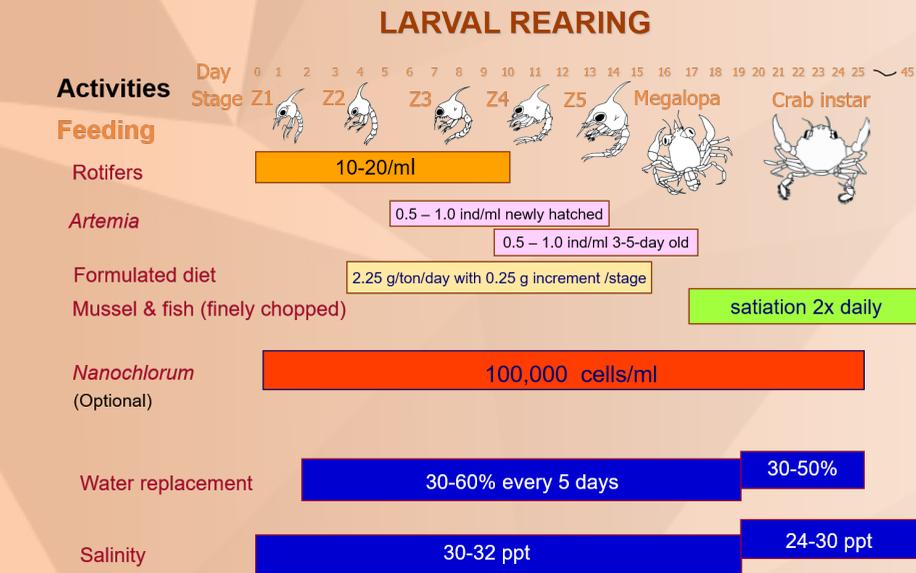


Figure 1. Feeding and water management in larval rearing (Quinitio, Parado-Estepa, and dela Cruz-Huervana; 2018)

Suitable ranges of water quality for mangrove crab larvae

Temperature	27-30°C
Salinity	28-32 ppt
Dissolved oxygen	≥ 5 ppm
pH	7.5-8.5
Unionized ammonia	≤ 1 ppm
Nitrite	≤ 0.1 ppm

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 minimize 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 30% wet feeds plus 70% formulated feed 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



Installation of net cages in the nursery pond.



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



Harvest of crablets in the nursery net cages



Sorting of crablets according to size