

# MUD CRAB PEN CULTURE

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Harvested mud crabs

## Harvesting

The crabs are harvested after the shell becomes sufficiently hardened and when it reaches a size of 300-400 g. The harvesting is done by draining the pond and using scoop nets, baited circular traps and ring nets with baits. Harvesting should be done in the early morning hours or evening to prevent mortality of crabs due to overheating of water at noon time. For mud crabs, partial harvesting or full harvesting is practiced. Fishes such as pearlspot, milkfish and mullets which are extensively stocked in the pen system (polyculture) is also harvested.

## Productivity and returns

The expected production per crop for an area of 0.1 ha. is around 250 kg. The income per crop from 0.1 ha. has been assessed to be Rs.75000/- (@ rate of 300/kg). If fishes are also stocked, a production of 100-200 kg from 0.1 ha is expected from the pen. This will provide an additional income of 30000/-(@ rate of 150/kg).

## Marketing

Crabs are marketed mostly in live condition (moist gunny bags place in crates) and some quantity are marketed in chilled and frozen forms. Crabs have high domestic market demand along the coastal region of the country.

The crabs with both claws without damage, strong legs and antennal movement are the premium grade for commercial markets.

Generally for domestic markets, the mud crabs are packed in plastic crates or containers and for export markets, mud crabs are packed in wax-lined cardboard



Packing of harvested crabs

boxes, with ventilation holes both end of the box.

## Precautions for mud crab pen culture:

- To avoid mortality during transport, crablets should keep in ventilated bamboo baskets or plastic baskets with wet gunny bag pieces and mangrove leaves.
- Before stocking, sex, weight and carapace width of the crablets should be recorded.
- Hideouts should be provided before stocking the Crablets
- Stocking should not be carried out during hot sunshine
- A record of source of seeds, health monitoring, water quality, feed, husbandry practices are necessary for the crab farming

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## Mud Crab Pen culture

### Introduction

Mud crabs of genus *Scylla*, also known as green crabs or mangrove crabs constitute an important species for farming in coastal waters. The mud crabs inhabit marine as well as brackish water environments. The two species of mud crabs, namely *Scylla tranquebarica* and *Scylla serrata* are found in estuaries, backwaters, coastal lakes and mangrove swamps. Crab fattening is essentially a holding operation during which post-moult or water crabs are kept for a short period of 20 days until they 'flesh out' or immature female crabs are held until their gonads develop and fill the mantle cavity.

### Biology

#### Growth

These species grows to a size of 22 cm carapace width (CW) which is about 2 kg in weight. However, normal size obtained in farming seems to be 10-12 cm in carapace width and about 700-900 g in weight. They are omnivorous and primarily feed on shrimps, crabs, molluscs and fishes.



*Scylla serrata*

### Breeding

They are continuous spawners and major spawning occurs during May to October. The seeds can be collected during September to October. The fecundity ranges from 3 to 5 lakhs. The berried females migrate to inshore areas and eggs hatch out in sea. The seeds will enter estuarine waters after hatching.

### Seed availability

Crab seed are available in the nature at all sizes. Juvenile crabs can be collected from estuaries, lakes, backwaters, creeks, mangrooves and salt water lagoons by using bamboo traps, lift nets or scissor nets. Mud crab fattening is done by stocking soft shelled crabs or water crabs that are held in smaller impoundments for 20-30 days till the shells are hardened.



Crab seed collection

### Water and soil parameters

Brackish water bodies of varying salinity is preferred for farming with the following water quality ranges and soil characteristics.

Parameter	Range/type
Soil texture	Sandy clay
Salinity of water	8-30 ppt
pH	8-8.5
Temperature	22-29 °C
Dissolve Oxygen	4-5 mg L <sup>-1</sup>
Alkalinity	50-250 mg L <sup>-1</sup>
Ammonia	0-0.025 ppm
Hardness	75-150 mg L <sup>-1</sup>

### Pen Culture system

Generally crab fattening is carried out in ponds (0.1 to 0.5 ha of 1.5 m depth), cages and pens. The pond should preferably have a sandy clay bottom. Bunds should have a minimum of 1 m width at the top to prevent crabs from escaping by borrowing through the bunds. Crabs are capable of climbing over the bunds, which is prevented by fixing overhanging fences on



Crab culture system



dykes. Fencing of height between 0.5 to 1.0 m over the dyke is done with materials like bamboo sticks, bamboo poles and knotless nets/asbestos sheets. As the crabs are highly cannibalistic especially on freshly moulted animals, 'hide outs' made out of hollow bamboo pieces, pvc pipes, cement pipes or stones of different sizes are placed inside culture system. Fishes such as pearlspot, milkfish and mullets can be also stocked (1/m<sup>2</sup>) in the pen as they feed on the algae within the culture system.

### Stocking

Soft-shelled crabs of size 5-8 cm (CW) are stocked in the density of 1 crab/m<sup>2</sup>. Crabs



are fed with trash fish. Feeding is done daily twice (of the daily recommended feed, 40% early morning and 60% in evening) at the rate of 3-6% of body weight. The feeding is carried out on alternate days. The duration of pen culture is 5-6 months.



Trash fish used as feed