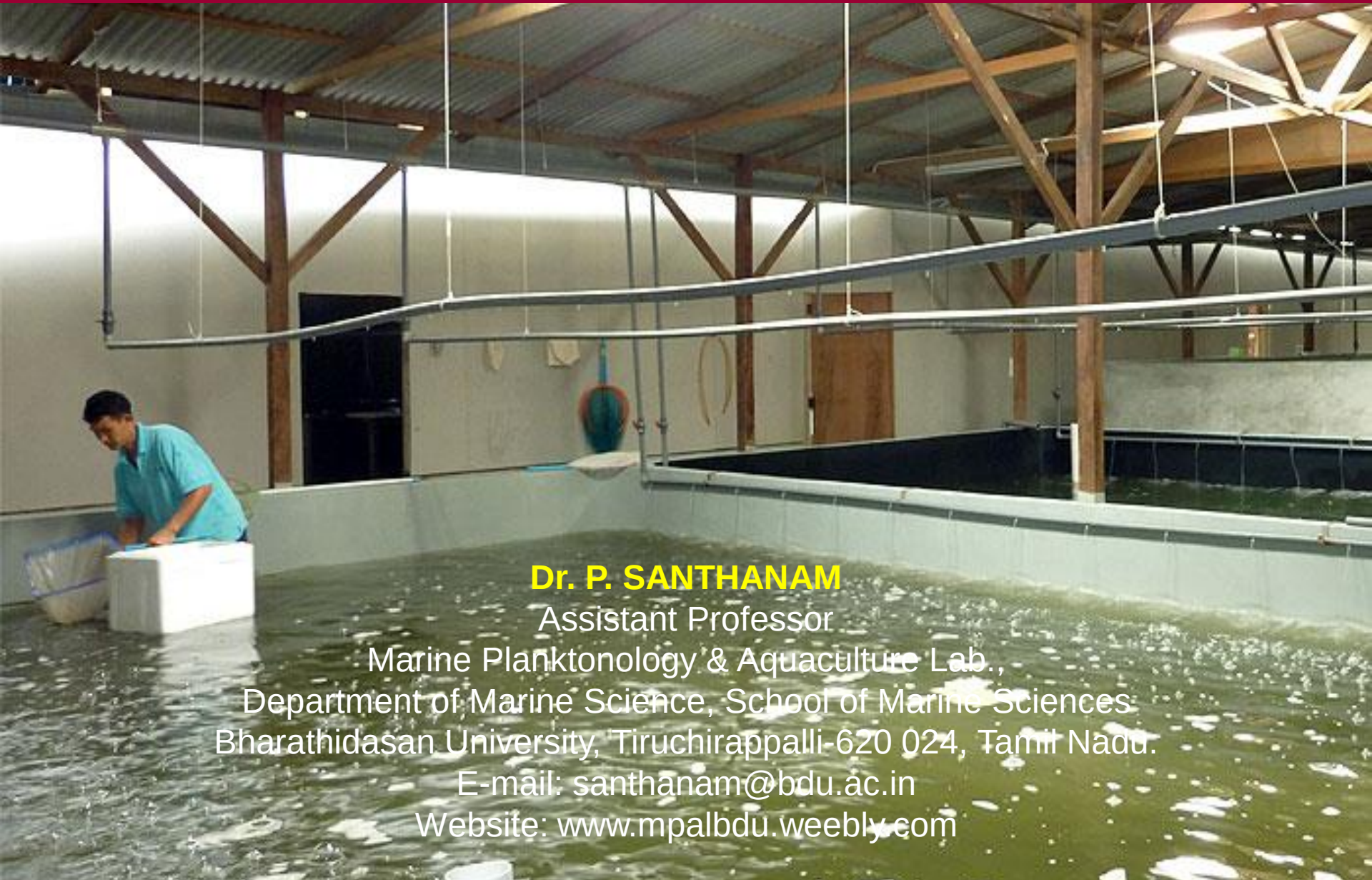


SEED PRODUCTION OF BLACK TIGER PRAWN *PENAEUS MONODON*



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SEED PRODUCTION

Seawater intake and water quality management

- Seawater with temperature 28-32°C, salinity 28-34ppt, pH 7.7-8.2 and suspended solids below 20ppm will be used for seed production.
- Pure seawater will be drawn from the sea by a pumping unit through a PVC pipes having slit opening.
- Water free from agricultural, industrial and sewage pollution
- There are 2 storage tanks
 - one for chlorination & dechlorination
 - one for storing the treated water

Chlorination

- Filtered seawater will be pumped into chlorination tank.
- Seawater will be treated with bleaching powder (5-10ppm of chlorine) for 6-8 hours to kill all organisms causing diseases.
- After that water will be filtered through a vertical sand filter (filled with sand, pebbles & granite) to remove particulate and precipitates.

Dechlorination

- Chlorinated water will be transferred to dechlorination by using sodium thiosulphate (3-5ppm) depending on the residual chloride level.
- Then Diethylenetriamine (DETA) will be added to remove the trace metals.
- Then the seawater will be pumped to overhead tank.
- Then the water will be treated with UV rays to kill microorganisms (bacteria & Virus).
- UV treated water is supplied to various larval rearing tanks.

AERATION

- Oil free air compressor is required
- Air supply grid with PVC pipes is connected for all the facilities
- Aeration is require to maintain O_2 and suspension of algal cell and food particles

BROOD STOCK DEVELOPMENT

- Number of brooders required for annual production of seeds are based on average nauplii production rate
- *P.monodon* wild spawner yields 5 lakhs nauplii and artificial mature spawner yield about 2 lakhs nauplii
- Average rate of survival to PL 20 is around 30%.

BROOD STOCK FROM EARTHEN POND

- PL 20 is stocked at the rate of 4 nos./m² in 0.25 to 0.50 ha pond.
- After 12 to 15 months they raised as spawners.
- Seawater salinity is required for final stage in raising quality spawners.
- Captive spawner source from broodstock pond is advantageous for produce seeds throughout the year.

BROOD STOCK FROM WILD CATCH

- Brooders (200mm total length & 100g weight) collected from wild.
- Transported to hatchery by polythene pack early in the morning or night.
- Brooders are released into brood stock tank with good aeration.
- From this better one is selected for maturation.

MATURATION

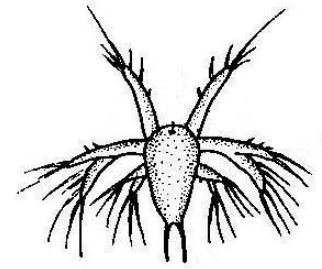
- Spawners will be collected from the source.
- Spawners will be disinfected with formalin (50ppm) for 30 minutes and quarantined for 1 to 2 days.
- Good quality males will be collected, measured and weighed and treated with antibiotics for 30 minutes.
- Treated specimens were transferred to maturation tank filled with filtered seawater (10 μ cartridge).
- Female shrimps will eyestalk ablates. After ablation specimens will be treated with antibiotics for 30 minutes.



Maturation cont....

- The male and female *P.monodon* will be released in the ratio of 1:1 in 10 to 16 tones capacity round or rectangular maturation tank.
- 12 hours light: 12 hours dark will be maintained by fluorescent lights of 40w each at 1m above the tank.
- Within 7-10 days the ovary will be developed. During maturation, prawn will be fed with vitamin and fatty oil rich feed like squid flesh, mussel meat, shrimp meat, goat or beef liver @10% of the biomass of spawner.
- Maturation tank will be cleaned daily.

SPAWNING AND HATCHING



- For spawning 250 litre FRP tanks will be used.
- Gravid female shrimps will be released in spawning tanks with aeration.
- Spawning mostly takes place in midnight.
- After spawning, the mother shrimps will be separated from the tank to avoid damage to eggs.
- The eggs will be collected by siphoning and cleaned and shifted to hatching tanks.
- The eggs will be hatched out into nauplii within 6-8 hours. From nauplii to zoea stage will remain in hatching tanks.
- Zoea will be shifted to larval rearing tanks.



LARVAL REARING

- Larval rearing will be done in 2-10 tonnes capacity FRP or RCC tanks with one outlet.
- Zoea will be stocked at 60-100 nos/l.
- Larvae will be reared upto PL4/PL5 for about 15 days.
- Micro algae and *Artemia* nauplii will be given as food for larvae.

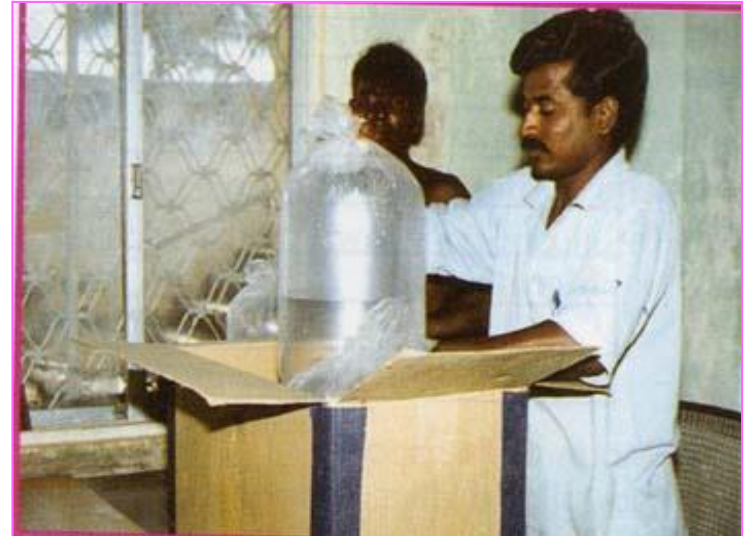


POST LARVAE (PL) REARING

- Post larvae (PL5) will be transfer to 10-30 tonnes of RCC tanks and stocked at 25-50PL/l in indoor tanks fed with algae @ 50,000/ml and *Artemia* nauplii @ 2 nos/PL and egg austere will be given up to PL5.
- From PL 6, the pelleted feed will be given @ 2-3% of biomass.
- Water exchange will be given upto 80-100%.

LARVAL COUNTING AND PACKING

- Post larvae will be counted randomly and packed in 35 litre capacity polythene bag at the rate of 2000-5000 nos. in 1/3rd of the water and 2/3rd of the oxygen with feed.



ALGAL CULTURE

- Indoor algal culture will be maintained in air conditioned room in 2 to 20 litres carbuoys flask.
- Out door culture will be maintained at 200 litre FRP and 1 to 6 tonnes of cement tanks.
- Algae will be cultured by using commercial medium (F2 medium).



ARTEMIA CULTURE

- *Artemia* cyst will be obtained from the market.
- 200-500 liter capacity FRP cylindro-conical shaped tank bottom with drain facility with a side glass window will be used.
- *Artemia* cyst will be stocked in the hatching tank with continuous aeration and required light to feed shrimp larvae.



HEALTH MANAGEMENT

Name of the Disease	Symptoms	Prevention or control
Luminescent	Vibriosis get affected in mysis/PL choked gills in zoea/mysis/PL	Chloram phenical 10 ppm or erythromycin 2-4 ppm or prefuran 1ppm. Avoid over crowding
Filamentous bacteria	Choked gills in zoea/mysis/PL	Prefuran 1ppm or methylene blue 8- 10ppm avoid over crowds & exchange water regularly
Shell disease	Tips & edges of exoskeleton get eroded	Use formalin 25ppm
Fungal disease	Entire body gets filled with fungal hyphae	Traflon 0.1 ppm
Parasitic disease	Choke the gills, affect the locomotion, moulting & feeding	Cupric chloride 1ppm or formalin 15-20ppm