



**Expression of Interest for Internship/ Hands on  
Training/ Utilization of Lab facility for  
Research & Development purpose by  
Universities/ Research Institutions/ Colleges**

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(MPEDA, Ministry of Commerce & Industry, Govt. of India)  
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## **Expression of Interest for Internship/Hands on Training/ Utilization of Lab facility for Research & Development purpose by Universities/Research Institutions/Colleges**

### **Introduction:**

Rajiv Gandhi Centre for Aquaculture (RGCA) is the Research & Development arm of the Marine Products Export Development Authority. The plan scheme of MPEDA under the R&D head is being implemented by RGCA. RGCA is functioning as a Society, established in the year 1995 and registered under the Tamil Nadu Societies Registration Act, 1975. RGCA has been constituted with the objective of Not-for-Profit and for the providing necessary training and disseminating the technologies to the stakeholders/researchers/students for diversified aquaculture and allied activities in aquaculture.

RGCA is involved in the development of various Sustainable Aquaculture technologies that are Bio-secure, eco-friendly and that offer traceability for seed production and grow out farming of various aquatic species, those having export potential in particular. RGCA is also developing a state-of-the-art Technology Transfer and Training Centre for disseminating the technologies developed at the various projects established at different locations in the country to the Aquaculture Industry in order to strengthen the raw material production base for export of quality marine products from India. RGCA is first of its kind in India for Diversified Aquaculture. RGCA is presently pursuing 13 important aquaculture projects at species specific locations across the country. The headquarters of RGCA is located at Sirkali, Tamil Nadu. RGCA has successfully completed 25 years of establishment of the society by the year 2021.

### **Collaboration with Universities/Research Institutes/Colleges:**

RGCA is willing to join hands with universities, research institutes and colleges, in sharing knowledge and facilities. The laboratory activities are open for discussion for different modes of operation which will be mutually aiding the organizations collaborating in this venture. A formal MoU may be signed for internship, contract research, diploma or certificate courses and joint researches on the basis of “friends with benefits” mode of operation.

### Trainings Offered:

S.No	Title of Training	Duration (Days)	Fees (Rs)	Program Venue
<b>Diversified Aquaculture Programs</b>				
1	Artificial Insemination Techniques used for SPF Black Tiger Shrimp <i>Penaeus monodon</i> with special reference to Broodstock Management, Maturation and Seed Production	1 Day	15000	MPEDA-RGCA, Broodstock Multiplication Centre, Visakhapatnam, Andhra Pradesh.
2	Hatchery production of Marine Fin Fish	2 Days	2000	MPEDA-RGCA, Marine Finfish Hatchery, Pozhiyoor, Tiruvananthapuram District, Kerala.
3	Artemia Cyst & Biomass Production, Processing & Packaging	3 Days	3000	MPEDA-RGCA, Artemia Project, Tharuvaikulam, Tuticorin District, Tamil Nadu. & MPEDA-RGCA, Artemia Demo Farm, Uppur, Ramanathapuram District, Tamil Nadu.
4	Hatchery Techniques & Seed Production of <i>Penaeus monodon</i> , GIFT & <i>Etroplus suratensis</i> , Nursery Rearing of <i>Lates Calcarifer</i> & Disease Diagnostic Techniques in Aquaculture	3 Days	3000	MPEDA-RGCA, Multispecies Aquatic Complex, Vallarpadam, Ernakulam District, Kerala.
5	Best Management Practices in Nursery, Grow-Out and Soft Shell Culture of Mangrove Mud Crab	4 Days	5000	MPEDA-RGCA, Mud Crab Hatchery, Thoduvai, Mayiladuthurai District, Tamil Nadu.
6	Best Management Practices in Nursery, Grow-out and cage culture set in earthen ponds for Asian Seabass	4 Days	5000	MPEDA-RGCA, Seabass Hatchery, Thoduvai, Mayiladuthurai District, Tamil Nadu.

7	Hatchery production of Marine Fin Fish	5 Days	5000	MPEDA-RGCA, Marine Finfish Hatchery, Pozhiyoor, Tiruvananthapuram District, Kerala
8	Breeding, seed production and grow out farming of Genetically Improved Farmed Tilapia (GIFT)	4 Days	5000	Tilapia Project, Manikonda, Vijayawada District, Andhra Pradesh.
<b>Laboratory Programs</b>				
1	DNA Extraction from aquatic animal samples. Techniques – Sample Collection and storage, Extraction using kit method, Agarose Gel Electrophoresis, Gel Documentation.	1 Day	2000	MPEDA-RGCA, Central Lab, Sirkali, Mayiladuthurai District, Tamil Nadu.
2	PCR technique and gel electrophoresis. Techniques – Master mix preparation, PCR operation, Agarose Gel Electrophoresis, Gel Documentation	1 Day	2000	MPEDA-RGCA, Central Lab, Sirkali, Mayiladuthurai District, Tamil Nadu.
3	Real Time PCR for aquaculture disease detection. Techniques – DNA Extraction, DNA Quantification using biophotometer, Master Mix Preparation, Real Time PCR operation, Result interpretation	1 Day	2000	MPEDA-RGCA, Central Lab, Sirkali, Mayiladuthurai District, Tamil Nadu.
4	DNA sequence Alignment, Edit, NCBI BLAST, FASTA Format and Phylogeny Tree Construction	1 Day	2000	MPEDA-RGCA, Central Lab, Sirkali, Mayiladuthurai District, Tamil Nadu.
5	Histology techniques for aquatic animals (Demo only). Techniques – Sample collection, Preservation, Fixation, Embedding, Microtome, Staining, Microscopic observation	1 Day	2000	MPEDA-RGCA, Central Lab, Sirkali, Mayiladuthurai District, Tamil Nadu.
6	Molecular marker - RAPD. Techniques – Master mix preparation, RAPD PCR, Agarose Gel Electrophoresis, Gel Documentation Central Lab	1 Day	2000	MPEDA-RGCA, Central Lab, Sirkali, Mayiladuthurai District, Tamil Nadu.



7	Water quality testing. Techniques – pH, Ammonia, Salinity, Total Hardness, Carbonate, Bicarbonate, Total Alkalinity, Nitrite, Nitrate, Iron, Calcium, Magnesium, Ca : Mg Ratio	1 Day	2000	MPEDA-RGCA, Central Lab, Sirkali, Mayiladuthurai District, Tamil Nadu.
8	PCR and its Application in Aquaculture Genetics Research	2 Days	2000	MPEDA-RGCA, Central Lab, Sirkali, Mayiladuthurai District, Tamil Nadu.
9	PCR Techniques and its application in Aquaculture Pathology	2 Days	2000	MPEDA-RGCA, Central Lab, Sirkali, Mayiladuthurai District, Tamil Nadu.

#### Internship Offered:

Sl. No	Program Details	Program Venue
<b>Diversified Aquaculture Programs - Farm</b>		
1	grow-out farming of Genetically Improved Farmed Tilapia (GIFT)	Tilapia Project, Manikonda, Vijayawada District, Andhra Pradesh. tilapiargca@gmail.com
2	Nursery, Grow-out and cage culture for Asian Seabass	MPEDA-RGCA, Aquatic Demo Farm, Karaikal, Puduchery. rgcademofarm@gmail.com
3	Nursery, Grow-out and soft-shell culture of Mud crab	MPEDA-RGCA, Aquatic Demo Farm, Karaikal, Puduchery. rgcademofarm@gmail.com
4	Cage culture of Marine finfishes	MPEDA-RGCA, Sea Cage, Muttom, Kanyakumari District, Tamil Nadu. rgcamfhpmuttom@gmail.com
5	Artemia Cyst & Biomass Production, Processing & Packaging	MPEDA-RGCA, Artemia Project, Tharuvaikulam, Tuticorin District, Tamil Nadu & MPEDA-RGCA, Artemia Demo Farm, Uppur, Ramanathapuram District, Tamil Nadu. artemiargca@gmail.com
6	Multispecies Aquaculture Seed Production Grow-out of the fishes – Seabass, GIFT, Pearlsport	MPEDA-RGCA, Multispecies Aquatic Complex, Vallarpadam, Ernakulam District, Kerala. mac@mpeda.gov.in
<b>Diversified Aquaculture Programs - Hatchery</b>		
1	Hatchery seed production of Asian Seabass includes livefeed production, Broodstock quarantine, Broodstock	MPEDA-RGCA, Seabass Hatchery, Thoduvai, Mayiladuthurai District, Tamil Nadu.

	maintenance in RAS, larval and nursery rearing of Seabass	seabasshatchery@gmail.com
2	Hatchery seed production of Mangrove Mud Crab	MPEDA-RGCA, Mud Crab Hatchery, Thoduvai, Mayiladuthurai District, Tamil Nadu. mudcrabhatchery@gmail.com
3	Hatchery Production of Cobia	MPEDA-RGCA, Marine Finfish Hatchery, Pozhiyoor, Thiruvananthapuram District, Kerala marinefishrgca@gmail.com
4	Breeding, seed production of Genetically Improved Farmed Tilapia (GIFT)	Tilapia Project, Manikonda, Vijayawada District, Andhra Pradesh. tilapiargca@gmail.com
5	Multispecies Aquaculture Seed Production of the fishes – Seabass, GIFT, Pearl-spot	MPEDA-RGCA, Multispecies Aquatic Complex, Vallarpadam, Ernakulam District, Kerala. mac@mpeda.gov.in
<b>Laboratory Programs</b>		
1	Molecular pathology (pathogens detection in Crustacean and finfishes)	MPEDA-RGCA, Central Lab, Sirkali, Mayiladuthurai District, Tamil Nadu. centrallabrgca@gmail.com
2	Microbiology	MPEDA-RGCA, Central Lab, Sirkali, Mayiladuthurai District, Tamil Nadu. centrallabrgca@gmail.com
3	Histopathology	MPEDA-RGCA, Central Lab, Sirkali, Mayiladuthurai District, Tamil Nadu. centrallabrgca@gmail.com
4	Water and soil quality analysis	MPEDA-RGCA, Central Lab, Sirkali, Mayiladuthurai District, Tamil Nadu. centrallabrgca@gmail.com
5	Shrimp Post larvae Health analysis	MPEDA-RGCA, Central Lab, Sirkali, Mayiladuthurai District, Tamil Nadu. centrallabrgca@gmail.com
6	Genetic research -Species Identification	MPEDA-RGCA, Central Lab, Sirkali, Mayiladuthurai District, Tamil Nadu. centrallabrgca@gmail.com
7	Genetic research –Sequencing (bacterial, fungal and other samples)	MPEDA-RGCA, Central Lab, Sirkali, Mayiladuthurai District, Tamil Nadu. centrallabrgca@gmail.com
8	Residue analysis in seafood testing - GC-MS and ICP-MS	MPEDA-RGCA, Central Lab, Sirkali, Mayiladuthurai District, Tamil Nadu. centrallabrgca@gmail.com
9	Residue analysis in seafood testing with HPLC & LCMS analysis	MPEDA-RGCA, Central Lab, Sirkali, Mayiladuthurai District, Tamil Nadu. centrallabrgca@gmail.com

**i) Internship and dissertation Fee structure :**

Internship and dissertation programs offered at RGCA for graduate/post graduate students and research scholars/faculty members (FIP), as part of their course work/career.

List of Dissertation/internship/project works:

SlNo	Duration	Student/research scholars from Universities or Colleges	Non-student Candidate
		Amount in Rs. (Inclusive of GST)	Amount in Rs (Inclusive of GST)
1	Up to 12 working days	7,500	10,000
2	Up to 30 working days	10,000	20,000
3	More than 30 working days up to 60 workingdays	15,000	30,000
4	Beyond 60 working days up to 90 workingdays	20,000	40,000
5	More than 90 workingdays	Committee will decide based on the nature of the work	Committee will decide based on the nature of the work

**ii) Internship and dissertation Admission Procedures :**

- ❖ The candidate wishing to join the programme should write a request mail in the respective column mentioning the research area/topics of interest.
- ❖ If the candidate is a student/research scholar of college or university, he/she along with the request letter, should submit/attached three documents as follows:
  - A recommendation/permission letter from the Principal/HOD/Guide
  - CV/Biodata/resume of the candidate
  - Scanned copy of College/University ID card
- ❖ For candidate who is not a student may send request letter to the above email ID

along with CV/Biodata and any Govt issued ID card.

- ❖ The types of programmes available now with duration and bench fee (amount) is tabulated in Annexure -1
- ❖ A certificate of the programme will be issued by the Project Director, RGCA to the candidate after the completion of the programme upon producing the NO-dues certificate from office and recommendation from the lab staff/section.

## **Facilities Available:**

### **1. NABL Accredited Laboratories:**

This laboratory is one of the very few NABL accredited as per ISO/IEC 17025: 2017 (Certificate No.: TC-13191) aquaculture pathology and genetics labs in India. Under the scope of accreditation, OIE listed shrimp pathogens with molecular pathology detection (Real Time PCR) of WSSV, IHNV, DIV1, EHP, NHP-B, AHPND, TSV, YHV, & IMNV and Mud crab species identification are performed.









The laboratory is willing to draw your attention toward the utilization of various services and programmes offered for the effective utilization of the lab towards the betterment of the sector. The laboratory willing to join our hands with likeminded professionals, research scholars, students and stake holders for the upliftment of the quality and open new horizons for the Aquaculture in India.

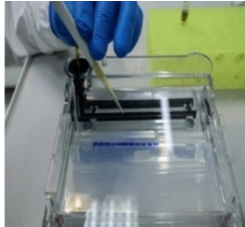








Central Pathology Lab at Sirkali, Tamil Nadu has qualified in the “Ring Test”, which the unique Lab Performance Quality Test is conducted by the University of Arizona, USA, for 11 times in a row.







### **2. Instruments Available:**

RGCA is equipped with most of the major instruments in the field of molecular and analytical testing. Certain instruments can be utilized by the stakeholders for the purpose of sample analysis. The usage fees for the instruments are tabulated below:

**Usage fee for instruments**

<b>Sl No</b>	<b>Item</b>	<b>Fee in Rs</b>	<b>Instrument</b>
1	Usage charges for Microscopy (Bright field, Dark Field, Phase contrast) per slide (5 photos)	500	
2	Inverted microscope per slide (5 photos)	500	
3	Usage charges for Ultracentrifuge (per hour)	500	
4	Usage charges for Refrigerated Centrifuge (per hour)	200	
5	Usage charges for Rotary Evaporator (per hour)	1000	
6	Usage charges for UV- VIS spectrophotometer (Full Scan with Peak)	500	
7	Usage charges for Real Time PCR usage (per sample) (primer and chemicals should be provided by customer)	2000	
8	Usage charges for PCR (conventional) per usage (primer and chemicals should be provided by customer)	500	

9	Usage charges for Standard PCR with Agarose Gel Electrophoresis and documentation (per Sample) (primer and chemicals should be provided by customer)	1500	
10	Gel Doc Protein/DNA ( per gel)	100	
11	Usage charges for ELISA plate washer /Reader (96well) (chemicals should be provided by customer)	1500	
12	Usage Charges for Vertical Gel Electrophoresis (Maxi Plus Vertical Gel:28 x 20) (chemicals should be provided by customer)	1500	
13	BOD incubator usage charges (24hrs)	300	
14	Electronic Balance (per sample) (chemicals should be provided by customer)	50	
15	Gen. Purpose Equipments Water bath/ Heater Mixer/vortex/Short Spin (chemicals should be provided by customer)	25	
16	Autoclave per cycle (full load)	200	
17	Sonicator per hour	50	

18	-80 Deep Freeze Each cryo box (14cm X 14cm)] / day	20	
19	-20 Deep Freeze Each cryo-box (14cm X 14cm)] / day	10	
20	Water Bath Shaker (Orbital mode shaking) per hour	50	
21	Micro-digestor (chemicals should be provided by customer) per sample	200	
22	Nitrogen evaporator per hour	1000	
23	DNA Concentrator per sample (2ml)	500	

### 3. Aquaculture Library

The aquaculture library located at RGCA-HQ, Sirkazhi acts as a repository of literature and information in the field of aquaculture and related subjects. The library has the total collection of 1400 books, 1500 bound volumes of journals with other reference materials and has subscribed for 24 International journals and 44 Indian Journals. Aquaculture Library is maintaining numerous collections of rare books and unique documents belongs to renowned scientist & visionary Dr. E. G. Silas who donated his entire collections of aquaculture books and journals to RGCA. Various activities of RGCA's Aquaculture Library have been computerized and using integrated library management software Alice for Windows (AfW) an Australian software. The catalogue (Books / CDs / Journals, etc) of Aquaculture Library is Available on the RGCA Website (Web OPAC: Online Public Access Catalogue) which may be accessed from anywhere.

#### Internship offered:

- Topics: Digital Resource Management & its Utilization
- Duration: 07 days
- Course fee: Rs. 1500/-
- Location: RGCA-HQ, Sirkazhi

### 4. Boarding and Lodging:

The RGCA-HO, Sirkali, Tamil Nadu has separate hostel facility for girls and boys along with canteen facility inside the campus.

The tariff of the room (Twin sharing basis) is given below.

Sl No	Category	AC Room Rs.	Non AC Room Rs.	Dormitory Rs.
1	Officers/staff of MPEDA and its societies	450	300	-
2	Others	800	500	-
3	Students/Scholars	-	-	100

**Note:** Room rent (except dormitory) mentioned above are per day per room charges. In case of single person, it will be halved and dealt accordingly. Dormitory will be charged on per bed basis. Dormitory will be allotted as per the availability.

**For hostel booking contact: [hostelrgcaho@gmail.com](mailto:hostelrgcaho@gmail.com)**





## Payment Structure for the Diagnostics and research services provided by Central Aquaculture Pathology, Genetics and Food Testing Laboratory



Package No.	Test Description (s)	Total amount (In Rs.) Inclusive of GST
<b>Molecular Pathology Section</b>		
1	Diagnosis of WSSV, IHNV, AHPND, EHP, NHP-B, TSV, YHV, IMNV, MBV, CMNV, Irido virus, SHIV, TiLV & VNN by <b>Real Time PCR</b> / Per Test (non NABL)	1500
2	Diagnosis of Pathogens <b>under NABL scope</b> WSSV, IHNV, AHPND, EHP, NHP-B, TSV, YHV, IMNV by <b>Real Time PCR</b> / Per Test	2000
3	Diagnosis of WSSV, IHNV, AHPND, EHP, NHPB, TSV, YHV, IMNV, MBV, HPV, MoV, LSNV, SMV, RLB-TAN & MAD, PvNV, MrNV, TiLV & CMNV by <b>Standard PCR</b> / Per Test	1200
4	Package of PCR test(s) for Seed/Broodstock sample / Per sample (WSSV, EHP, AHPND/EMS, IHNV, IMNV by <b>Real Time PCR</b> ) (non NABL)	6000
5	Package of PCR tests for Seed sample (WSSV, EHP, AHPND & IMNV by <b>Real Time PCR</b> ) & Shrimp Seed health analysis (non NABL)	5000
6	Package of PCR tests for Seed sample (WSSV & EHP by <b>Real Time PCR</b> ) & Shrimp Seed health analysis (non NABL)	3000
<b>Microbiology Section</b>		
7	Total heterotrophic bacterial/Vibrio count for water sample	150
8	Total heterotrophic bacterial/Vibrio count for animal/Seafood/soil samples	250
9	Fungal isolation and staining	300
10	Phenotypical characterization (Gram staining, biochemical characterization only/per isolate)	500
11	Antibiogram test (15 disk) /per isolate	300
12	Phenotypical characterization of bacterial isolate (gram staining, biochemical and Enzymatic assay and antibiogram test /per isolate)	700
13	Antibacterial/antifungal activity of using any commercial compounds ( per pathogen/per compound)	500
14	Aquatic bacterial/fungal pathogens( Positive control)-per isolate (slant/plate) – Research scholar	1000
15	Aquatic bacterial/fungal pathogens( Positive control)-per isolate (slant/plate) – Private aqua entrepreneur	1500
16	Probiotic evaluation study ( <i>In-vitro assay</i> )	5000
<b>Water Quality Analysis Section</b>		
17	Water quality analysis (pH, Salinity, Ammonia, Nitrite, Nitrate, Total Hardness, Total Alkalinity, Carbonate, Bicarbonate, Calcium & Iron)	150

18	Package of tests (Total vibrio count and Water Quality analysis) for Water sample	200
19	Package of tests (Total vibrio count , Water Quality analysis and sodium and potassium ) for Water sample	250
<b>Shrimp Seed Health Analysis Section</b>		
20	Shrimp Seed health analysis	500
<b>Soil analysis</b>		
21	Soil analysis (Soil texture ,pH, Organic Carbon, Redox Potential, Electrical Conductivity and Lime requirement)	350
22	Soil analysis (pH, Organic Carbon, Redox Potential, Electrical Conductivity, Potassium, calcium, sodium and lithium, Available phosphorus, Soil texture and Lime requirement)	750
23	Soil analysis (pH, Organic Carbon, Redox Potential, Electrical Conductivity, Potassium, calcium, sodium and lithium, Available phosphorus, Soil texture , Lime requirement Ammonia and Microbial count)	1000
<b>Histopathology Section</b>		
24	Animal/ other preserved tissue sample (Processing, Embedding, Sectioning, Staining & Imaging) per sample/block	350
25	Animal/ other preserved tissue sample (Processing, Embedding, Sectioning Staining, Imaging with slides) per sample/block	400
26	Shrimp/fish preserved tissue sample (Processing, Embedding, Sectioning and Staining, Imaging & Results interpretation ) per sample	500
27	Microscopy observation/imaging of processed slides/per slide	250
28	Wet mount analysis ( Light/stereo Microscopy)	200
29	Special staining for tissues (Gram staining /PAS staining etc...) per sample	500
30	Positive Control Slides/ per pathogen (Available only)	3000
<b>Molecular Genetics Section</b>		
31	Partial gene sequencing (~800 bp) from tissue sample (includes DNA extraction, PCR, PCRproduct clean-up and sequencing) per sample. Bi-direction sequencing (Forward and Reverse)	2000
32	Partial gene sequencing (~800 bp) from tissue sample (includes DNA extraction, PCR, PCRproduct clean-up and sequencing) per sample. Single direction sequencing (Forward or Reverse)	1500
33	Partial gene sequencing (~800 bp) from purified PCR product (includes PCR product clean-up and sequencing) per sample/sequencing reaction	800
34	Bacterial/fungal/algae isolate identification by 16s/18s DNA/ITS PCR and sequencing /per isolate	2000
35	Mud crab species identification (NABL scope) per sample	4000
36	DNA Sequence editing and analysis	500
37	RAPD analysis for 08 samples with one markers (minimum) Addition each sample will cost Rs. 400 per sample	3500
38	PCR-RFLP analysis for 03 samples with one enzyme (minimum) Addition each sample will cost Rs. 500 per sample	4000
<b>Food Testing Laboratory Section</b>		
39	Chloramphenicol by LC MSMS	1800
40	Nitrofurantoin Metabolites (AOZ, AMOZ, AHD & SEM) by LC MSMS <sup>5</sup>	3000
41	Tetracyclines with 4-epimers (3 compounds) by LC MSMS, <sup>5</sup>	3600

42	Sulphonamides (11 compounds) by LC MSMS <sup>5</sup>	4200
43	Quinolones / Fluroquinolones (9 compounds) by LC MSMS <sup>5</sup>	4200
44	Dyes (MG, LMG, CV & LCV) by LC MSMS <sup>5</sup>	7000
45	Anthelmintics (Ivermectin & Emamectin) by LC MSMS	3000
46	Sulfadiazine by HPLC-PDA	1500
47	Oxolinic acid and Nalidixic acid by HPLC-FL <sup>5</sup>	2400
48	Detection of functional molecules using HPLC-PDA/FL. <sup>5</sup>	2400
49	Organochlorine pesticides group by GC MS/MS	3600
50	Analysis of compounds using GC MS with NIST library	3000
51	Analysis of compounds using GC MS with NIST library (Head Space)	3600
52	Heavy Metal (As, Hg, Pb & Cd) in sea food by ICP MS (Rs. 600/- per metal)	2400
53	Heavy metal in Water Sample (As, Hg, Pb & Cd) by ICP MS (Rs. 500/- per metal)	2000
<b>Advanced Pathology Section</b>		
54	Diagnosis of Soil Sample for EHP (non NABL)	2000
55	Usage charges for Microscopy( Bright field, Dark Field, Phase contrast) per slide (5 photos)	500
56	Usage charges for Ultracentrifuge (per hour)	500
57	Usage charges for Refrigerated Centrifuge (per hour)	200
58	Usage charges for Rotary Evaporator (per hour)	1000
59	Usage charges for UV- VIS spectrophotometer (Full Scan with Peak)	500
60	Usage charges for Real Time PCR usage (per sample) (primer and chemicals should be provided by customer)	2000
61	Usage charges for Standard PCR with Agarose Gel Electrophoresis and documentation (per Sample) (primer and chemicals should be provided by customer)	1500
62	Usage charges for ELISA plate washer /Reader (96well) (chemicals should be provided by customer)	1500
63	Usage Charges for Vertical Gel Electrophoresis (Maxi Plus Vertical Gel:28 x 20) (chemicals should be provided by customer)	1500
64	Positive Control for WSSV, EHP and other available controls (Ethanol fixed tissue in 2ml vial/ DNA)	1500
65	BOD incubator usage charges (24hrs)	300
66	Identification of <i>Aeromonas hydrophila</i> , <i>Vibrio parahaemolyticus</i> , <i>V. alginolyticus</i> , <i>V. vulnificus</i> , <i>Photobacterium damsela</i> subsp. <i>piscicida</i> & other bacterial/Fungal pathogens by Standard PCR / Per bacterial isolate (non NABL)	1500
67	Participatory ring test/ Proficiency testing (one time per year), WSSV, EHP and IHHNV (per pathogen)	2500

**Procedure for sample fixation, preservation & estimated Turn Around Time (TAT)**

<b>Test Services</b>	<b>Samples</b>	<b>Fixative</b>	<b>TAT</b>
Partial gene Sequencing	Tissue	95% Ethanol	6 – 7
Partial gene Sequencing	PCR Product	TE Buffer/DH <sub>2</sub> O	3 – 7
Bacterial/fungal identification	Pure culture	In Slants/Plate	3 – 7
PCR analysis for pathogens	Organs/tissue/Feces/Seed	95% Ethanol	1 – 5
Microbiology	Water/Crustacean/Finfish	Live /Frozen	2 – 4
Soil analysis	Soil	Wet/dry	3 – 5
Wet mount analysis	Any types of samples	Live	1 – 2
Water quality analysis	Water	Within 3 hrs from collection	1 – 2
Shrimp Seed analysis	Shrimp Post larvae	Live	1 - 2
Histology	Whole animals/organs	Fish -10 % Neutral buffered formalin	10 – 15
		Crustaceans - Davidson's fixative	

**Please note that:**

1. Before sending the sample consult laboratory for details regarding sampling, fixation and sending.
2. Sample should be sent in airtight/leak proof plastic container or tubes (avoid glass containers) in fixed condition.
3. Samples for water quality, seed health and bacteriology analysis should be submitted by person only
4. Samples may be submitted to laboratory preferably by India Speed Post or any authorized courier service with tracking.
5. Samples received for analysis for one parameter in these groups, testing fee will be Rs. 1800/-

**All test payments should be paid through Cash/UPI/Net banking/ Debit card (ATM) or Credit card**

**For more details, please contact:**

Project Director

Central Aquaculture Pathology, Genetics & Food Testing Laboratory

NABL Accredited Lab as per ISO/IEC 17025:2017

Rajiv Gandhi Centre for Aquaculture (RGCA)

The Marine Products Export Development Authority (MPEDA)

3/197, Poompuhar Road, Karaimedu, Sattanathapuram P.O.,

Sirkazhi-609109 Nagapattinam Dist., Tamil Nadu, India.

Web: v2.rgca.co.in; Mobile No: +91 - 63745 02175

E-mail: rgcapatholab@gmail.com & centrallabrgca@gmail.com

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Payment can be made through Net Banking State Bank of India (SBI)

RGCA Account Number: **10948711219** SBI Mayiladuthurai IFSC code - **SBIN0000875**



**PLEASE NOTE:**

**ST students may be exempted from fees of training & internship for limited period**



## MULTI SPECIES AQUACULTURE COMPLEX (MAC)

Products Export Development Authority (MPEDA)-Rajiv Gandhi Centre for Aquaculture  
Vallarpadam P. O., Mulavukadu Village, Kochi, Ernakulam District, Kerala State - 682 011  
Telephone : 0484 – 2981220, Mobile : +91 7736463137 & Email : mac@mpeda.gov.in



(Aerial View of MAC of MPEDA-RGCA @ Vallarpadam)

In December, 2018, MPEDA-RGCA established the state-of-the-art Multispecies Aquaculture complex (MAC), first of its kind at Vallarpadam in Kochi of Ernakulam District in Kerala, the southernmost state of India with the following objectives:

- Revival of Black Tiger Shrimp (*P. monodon*) and its farming in our country.
- Diversification of Aquaculture through the continues supply of quality seeds of Seabass, GIFT, Etroplus etc.
- Offer hands-on training & internship programmes on various aquaculture species and allied topics towards capacity building of aquapreneurs across the country.
- Support the aquafarming community by rendering disease diagnosis and screening services for seeds and water quality analysis through the Aquatic Animal Disease Diagnosis Lab towards ensuring quality of seeds and water during farming.

## 1. TRAININGS OFFERED @ MAC VALLARPADAM

Sl.#	Title of Training	Duration (Days)	Fees (Rs)	Program Venue
<b>1.1 GIFT Tilapia Training Programmes</b>				
<b>Topics Covered:</b>				
<ul style="list-style-type: none"> <li>● <i>GIFT Tilapia seed production techniques and profitable farming with special emphasis on feed management and value addition</i></li> <li>● <i>Hatchery, Nursery &amp; Farming Operations of GIFT</i></li> <li>● <i>Innovative Techniques in Aquaculture – RAS, BIOFLOC &amp; Aquaponics</i></li> <li>● <i>Feed Formulation &amp; Feed Preparation for GIFT</i></li> <li>● <i>Value Addition of GIFT</i></li> </ul>				
1	GIFT Hatchery & Nursery Rearing Techniques	2 Days	2,500	MAC of MPEDA-RGCA, Vallarpadam, Kochi, Kerala
2	GIFT Grow-Out & Feed Management	1 Day	1,750	MAC of MPEDA-RGCA, Vallarpadam, Kochi, Kerala
3	Integrated Training on GIFT Hatchery, Nursery, Grow-Out & Feed Management	3 Days	3,500	MAC of MPEDA-RGCA, Vallarpadam, Kochi, Kerala
<b>1.2 Seabass Training Programmes</b>				
<b>Topics Covered:</b>				
<ul style="list-style-type: none"> <li>● <i>Ecology and biology of Seabass, nursery rearing practices and hands-on training in nursery rearing with special emphasis on size-grading</i></li> <li>● <i>Better management practices on pre-grow-out, grow-out, cage culture &amp; poly culture</i></li> <li>● <i>Grow-out Pond preparation, design, and construction of cage</i></li> <li>● <i>Nutrition and Feed Management</i></li> </ul>				
Sl.#	Title of Training	Duration (Days)	Fees (Rs)	Program Venue
4	Nursery Rearing of Asian Seabass	1 Day	1,750	MAC of MPEDA-RGCA, Vallarpadam, Kochi, Kerala
5	Asian Seabass Grow-Out Techniques	1 Day	1,750	MAC of MPEDA-RGCA, Vallarpadam, Kochi, Kerala
6	Integrated Training on Nursery rearing & Grow-Out culture techniques of Asian Seabass	2 Days	2,500	MAC of MPEDA-RGCA, Vallarpadam, Kochi, Kerala
<b>1.3 Pearl Spot Training Programmes</b>				
<b>Topics Covered:</b>				



- *Hatchery, Nursery & Farming Operations of Pearl Spot*
- *Better management practices on pre-grow-out & grow-out*
- *Nutrition and feed management*

Sl.#	Title of Training	Duration (Days)	Fees (Rs)	Program Venue
7	Hatchery & Nursery rearing of Pearl Spot	1 Day	1,750	MAC of MPEDA-RGCA, Vallarpadam, Kochi, Kerala
8	Pearl Spot Grow-Out Techniques	1 Day	1,750	MAC of MPEDA-RGCA, Vallarpadam, Kochi, Kerala
9	Integrated Training Programme on Nursery rearing & Grow-Out culture techniques of Pearl Spot	2 Days	2,500	MAC of MPEDA-RGCA, Vallarpadam, Kochi, Kerala

### **Black Tiger Shrimp Training Programmes**

#### **Topics Covered:**

- *Detailed quarantine procedures for P. monodon*
- *Basic bio-security requirements*
- *P. monodon maturation practices with special emphasis on eyestalk ablation and artificial insemination*
- *Larvae and post-larvae rearing techniques of P. monodon*
- *Live-feed culture with special emphasis on micro-algae, artemia and rotifer*
- *Nutrition and feed management*

Sl.#	Title of Training	Duration (Days)	Fees (Rs)	Program Venue
10	Hatchery Operations of Black Tiger Shrimp	2 Days	2,500	MAC of MPEDA-RGCA, Vallarpadam, Kochi, Kerala
11	Nursery rearing & Grow-Out culture techniques of Black Tiger Shrimp	1 Day	1,750	MAC of MPEDA-RGCA, Vallarpadam, Kochi, Kerala
12	Live Feed culture for Black Tiger Shrimp	1 Day	2,500	MAC of MPEDA-RGCA, Vallarpadam, Kochi, Kerala
13	Integrated Training Programme on Hatchery Operations, Live Feed Management, Nursery Rearing & Grow-Out culture techniques of Black Tiger Shrimp	3 Days	4,000	MAC of MPEDA-RGCA, Vallarpadam, Kochi, Kerala

### **Laboratory Training Programmes**

**(@ Aquatic Animal Disease Diagnostics Lab of MAC)**

#### **Topics Covered (Water Quality Analysis and Aquatic Animal Disease Diagnosis techniques)**

- **Molecular Techniques**



- *Nucleic Acid extraction technique from fish/shrimp samples*
  - *Quantity check of extracted nucleic acid*
  - *Setting up of PCR reaction and running it using Thermal Cyclers*
  - *Setting up of Real Time PCR reaction and running it using Real Time PCR System*
  - *Gel Electrophoresis*
  - *Gel Documentation and Interpretation of Gel Electrophoresis result*
  - *Interpretation of Real Time PCR result*
- **Microbiological Techniques**
    - *Aseptic techniques, Media preparation and sterilization techniques*
    - *Sampling protocols, dissection of fish for internal organ sampling*
    - *Plating Technique & Broth Culture Technique*
    - *Techniques of isolation and identification of bacterial pathogens*
    - *Gram Staining Technique and Microscopy*
    - *Biochemical Techniques for Identification of Bacterial Pathogens*
    - *Interpretation of Real Time PCR result*

Sl.#	Title of Training	Duration (Days)	Fees (Rs)	Program Venue
14	Microbiological Techniques	2 Days	2,500	MAC of MPEDA- RGCA, Vallarpadam, Kochi, Kerala
15	Molecular Techniques in Aquatic Animal Disease Diagnosis	2 Days	3,500	MAC of MPEDA- RGCA, Vallarpadam, Kochi, Kerala
16	Water Quality	1 Day	1,750	MAC of MPEDA- RGCA, Vallarpadam, Kochi, Kerala
17	Integrated Training Programme on Microbiology, Molecular Techniques in Aquatic Animal Disease Diagnosis & Water Quality	3 Days	5,000	MAC of MPEDA- RGCA, Vallarpadam, Kochi, Kerala

**General/Integrated Training Programmes**

Sl.#	Title of Training	Duration (Days)	Fees (Rs)	Program Venue
18	Integrated Training for GIFT, Seabass, Pearl Spot	3 Days	4,000	MAC of MPEDA- RGCA, Vallarpadam, Kochi, Kerala

## 2. INTERNSHIPS OFFERED TO STUDENTS & RESEARCH SCHOLARS @ MAC VALLARPADAM:

Sl.#	Program Details	Fees (Rs)	Program Venue
1	3 Days' Internship Programme	3,000	MAC of MPEDA-RGCA, Vallarpadam, Kochi, Kerala
2	4 Days' Internship Programme	4,000	MAC of MPEDA-RGCA, Vallarpadam, Kochi, Kerala
3	5 Days' Internship Programme	5,000	MAC of MPEDA-RGCA, Vallarpadam, Kochi, Kerala
4	30 Days' Internship Programme	10,000	MAC of MPEDA-RGCA, Vallarpadam, Kochi, Kerala

*\*A maximum grace period of 5 days may be allowed after the expiry of the initial 30 days for project works and any extension afterwards is chargeable @ Rs.2,500/Week which includes the grace period as referred to also. That is, for 30 or 35 days @ Rs.10,000/-, for 36-37 days @ Rs.12,500/- and for 38-44 days @ Rs.15,000/- and so on. Apart from the above referred standard project work fee, additional fee may be charged and collected based on consumption of materials/test kits etc. as the case may be, at actual costs.*

### Internship Admission Procedure :

1. Candidates are accorded entry to Internship Programmes @ MAC based on his/her request in writing by way of email to [mac@mpeda.gov.in](mailto:mac@mpeda.gov.in) clearly mentioning their area/topic(s) of interest, addressed to the In-Charge, MAC of MPEDA-RGCA, Vallarpadam
  2. If the candidate is a student/research scholar of a college or university, he/she, along with the request letter, shall submit one number of passport photo and attach the three documents as follows:
    - i. A recommendation/permission letter from the Principal/HOD/Guide
    - ii. CV/Biodata/resume of the candidate
    - iii. Scanned copy of College/University ID card
  3. For candidate who is not a student, he/she may send a request letter to the above email ID along with his/her CV/Biodata and a copy of any Govt issued ID card and one number of passport photo.
  4. The types of programmes available now with duration and bench fee (amount) is tabulated in Annexure -1
  5. A certificate of the programme will be issued by the Director, RGCA to the candidate after the successful completion of the programme upon producing the No-Dues Certificate from the office and a recommendation from the laboratory staff/section.
- Hostel Accommodation facility is available and can be opted for a nominal fee of Rs.200/single bed or @ Rs.400/- per room per day and will be provided based on intimation in advance on a first-cum-first-serve basis.
  - Canteen facility is also available at MAC and the students/interns can have breakfast, lunch, dinner etc. on extra payment basis. However, Tea and snacks @ 10:30 AM and 03:30 PM has been included in the Training/Internship Fee.

### Fee for various MAC - AADD Laboratory Services

Test Services and Test Fee Structure for various tests at Aquatic Animal Disease Diagnostic Laboratory, MAC, RGCA, MPEDA, Vallarpadam, Kochi, Ernakulam, Kerala

Sl.#	Tests/Particulars	Test Fee/Sample (Rs.)
<b>A. Diagnosis of Bacterial Diseases through Micro-Biological Tests</b>		
A 1.	<b>Diagnosis of bacterial diseases</b> caused by <i>Aeromonas</i> spp., <i>Streptococcus</i> spp., <i>Vibrio</i> spp, <i>Flexibactor</i> spp. Etc. in Tilapia, Pangasius, Carps, Seabass, Pearl spot etc. through microbiological tests <i>(Fast Track -Tentative identification)</i>	<b>300</b>
A 2.	<b>Total Vibrio count</b> - for aquaculture pond water sample <i>(Rate/sample)</i>	<b>100</b>
A 3.	<b>Total heterotrophic bacterial count</b> for aquaculture pond water sample <i>(Rate/Sample)</i>	<b>200</b>
A 4.	<b>Disease diagnosis</b> through Microbiological techniques <b>and confirmation of bacterial species</b> through biochemical tests	<b>2,500</b>
<b>B. Diagnosis of Parasitic Infections</b>		
<b>C. Water Quality Analysis</b>		
C 1.	<b>Water Quality Analysis</b> for the parameters –  <ul style="list-style-type: none"> <li>i). Ammonia</li> <li>ii). Nitrite</li> <li>iii). Total Alkalinity (<i>Carbonate &amp; Bicarbonate alkalinity</i>)</li> </ul> - For aquaculture pond water sample <i>(Rate/sample)</i>	<b>90</b>
C 2.	<b>Water Quality Analysis</b> for the parameters –  <ul style="list-style-type: none"> <li>i). pH</li> <li>ii). Salinity</li> <li>iii). Ammonia</li> <li>iv). Nitrite</li> <li>v). Total Alkalinity (<i>Carbonate &amp; Bicarbonate alkalinity</i>)</li> </ul> - For aquaculture pond water sample <i>(Rate/Sample)</i>	<b>150</b>

C 3.	<b>Hardness (Ca &amp; Mg hardness)</b> <i>(Rate/Sample)</i>	<b>100</b>
C 4.	<b>Iron Test</b> in aquaculture pond water	<b>150</b>
<b>D.</b>	<b>Detection of Virus and Bacteria by Molecular/PCR method</b>	
D 1.	<b>Detection of Virus by Real-Time PCR :</b>  i). WSSV ii). IHNV iii). AHPND iv). EHP v). NHP-B vi). TSV vii). YHV viii). IMNV ix). MBV x). CMNV xi). Irido Virus xii). SHIV xiii). TiLV xiv). VNN  <i>(Rate/Pathogen/Sample)</i>	<b>1,500</b>
D 2.	<b>Detection of Virus by Standard PCR :</b>  i). WSSV ii). IHNV iii). AHPND iv). EHP v). NHPB vi). TSV vii). YHV viii). IMNV ix). MBV x). HPV	<b>1,200</b>

	<b>xi). MoV</b> <b>xii). LSNV</b> <b>xiii). SMV</b> <b>xiv). RLB-TAN &amp; MAD</b> <b>xv). PvNV</b> <b>xvi). MrNV</b> <b>xvii). TiLV</b> <b>xviii). CMNV</b> <i>(Rate/Pathogen/Sample)</i>	
D 3.	<b>Identification of Bacterial Pathogens by Standard PCR :</b> <b>i). Aeromonas hydrophila</b> <b>ii). Vibrio parahaemolyticus</b> <b>iii). V. alginolyticus</b> <b>iv). V. vulnificus</b> <b>v). Photobacterium damsela subsp. piscicida &amp;</b> <b>vi). other bacterial pathogens</b> <i>(Rate/Pathogen/Bacterial Isolate)</i>	<b>1,200</b>
D 4.	<b>Package of PCR Screening Tests for Shrimp Seed Sample by Real Time PCR :</b> <b>i). WSSV</b> <b>ii). EHP</b> <b>iii). AHPND</b> <b>iv). IMNV</b> <i>(Rate/Sample)</i>	<b>5,000</b>

\*Before sending the sample for testing, it is advised that AADD Lab at MAC-Vallarpadam may please be consulted for details regarding sampling, fixation and sample submission.

Contact Details of AADD Lab : 0484-2981220, mob: +91 77364 63137 E-mail: mac.pathlab@mpeda.gov.in

### Boarding and Lodging:

The MAC Golden Jubilee hostel provides accommodation facilities along with canteen facility inside the campus.

The tariff of the room is given below.

Sl No	Party	Room Type	Rate/Bed/Day	Rate/Room/Day
1	Trainees (Those who are coming for attending various training programmes at MAC)	Double Room	200/-	400/-
2	MPEDA/RGCA/NETFISH/NaCSA Staff on Official Tour	Double Room	200/-	400/-
3	Regular Staff/Contract Staff/Technical Trainees etc. of MAC	Double Room	75/-	150/-

### For more details, please contact:

Officer In-charge

Multi-Species Aquaculture Complex of MPEDA-RGCA,

Rajiv Gandhi Centre for Aquaculture,

Under MPEDA, Ministry of Commerce & Industry, Government of India,

Vallarpadam, Kochi, Ernakulam District, Kerala - 682504 (Ph: 0484-2975595, 2981220)

### Payment can be made through Net Banking State Bank of India (SBI)

SBI A/c#38143338944

State Bank of India, Vallarpadam Branch (IFSC# SBIN0070801)

Bank Branch Address: Building No.7/331 E, 1st Floor, Gosree Towers, Vallarpadam Jn., Vallarpadam P. O., Kochi - 682 304

MAC GST : 32AAATR6368Q1ZV



MAC payment QR Code



**Project facilities available:**

**1. Seabass Hatchery, Thoduvai, Mayiladuthurai Dt, Tamil Nadu**

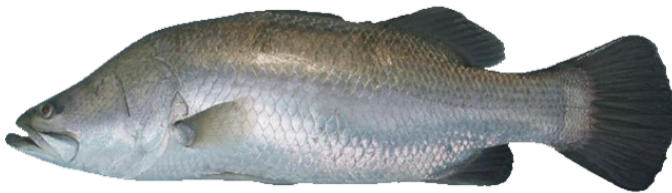


**2. Mangrove mudcrab hatchery, Thoduvai, Mayiladuthurai Dt, Tamil Nadu**





### 3. Aquaculture Demonstration Farm, Karaikal, UT Puducherry.



### 4. GIFT Tilapia- NBC, Manikonda, Krishna Dt, Andhra Pradesh





## 5. Marine Finfish Hatchery, Pozhiyoor, Trivandrum, Kerala



## 6. Open Sea Cage Farming, Muttom, Kanyakumari Dt, Tamil Nadu





## 7. Aquatic Quarantine Facility, Neelankarai, Chennai, Tamil Nadu

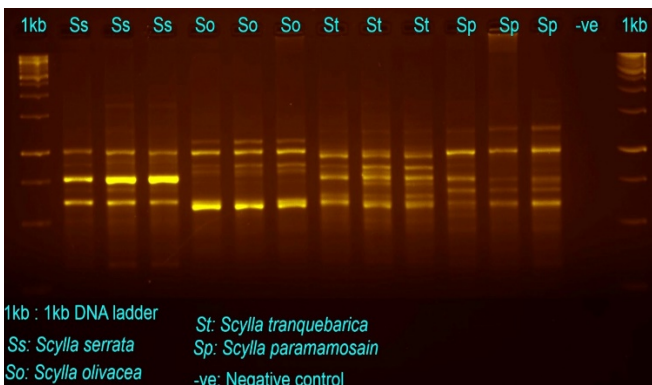


## 8. Artemia Project & Demo-Farm, Tharuvaikulam & Uppur , Tamil Nadu

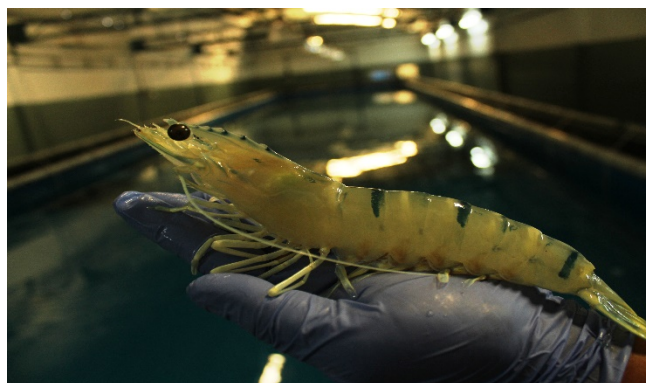




## 9. Central Aquaculture Genetics, Pathology & Food Testing Laboratory (CAGPFTL), Sirkali, Mayiladuthurai Dt, Tamil Nadu



## 10. Multi-Species Aquaculture Complex, Vallarpadam, Kochi, Kerala





## GIFT TILAPIA SECTION @ MAC, Vallarpadam, Kochi, Kerala



**GIFT Tilapia Hatchery Unit**



**Training on seed production of GIFT**



**GIFT Tilapia Seed Packing Section**



**GIFT Tilapia Seed Packing Section**



**GIFT broodstock**



**GIFT mono-sex seeds**



**GIFT eggs and hatchlings**



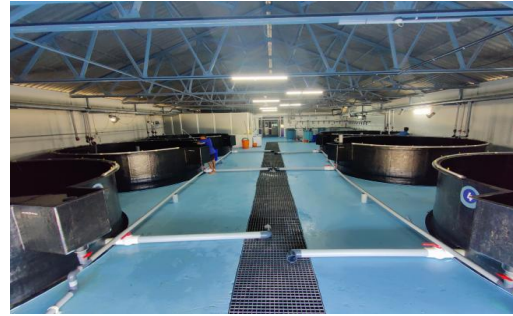
**Egg collection from GIFT**



**P. Monodon HATCHERY @ MAC, Vallarpadam, Kochi, Kerala**



***P. Monodon* Quarantine Section**



***P. Monodon* Maturation Section**



***P. Monodon* Spawning Area**



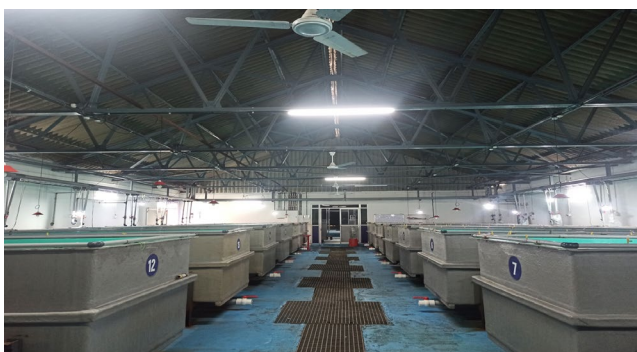
***P. Monodon* Spawning tank**



***P. Monodon* hatching Area**



**Larval rearing section**



**Post larval rearing section**



**Live Feed Culture Room**

**PEARL SPOT SECTION @ MAC, Vallarpadam, Kochi, Kerala**



**Pearl Spot Nursery Rearing in Hapa**



**Pearl Spot egg collection**



**Etroplus egg**



**Pearlspot seeds**



**SEABASS SECTION @ MAC, Vallarpadam, Kochi, Kerala**



**Sea bass Fingerling**



**Nursery rearing unit**



**Sea bass grading**



**Packing**



**Feeding**

**AQUATIC ANIMAL DISEASE DIAGNOSTICS LABORATORY (AADDL @ MAC) , Vallarpadam, Kochi, Kerala**



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24-Aug-2022, 15:02



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24-Aug-2022, 15:03



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24-Aug-2022, 15:03



**MAC GOLDEN JUBILEE HOSTEL, Vallarpadam, Kochi, Kerala**





*Rajiv Gandhi Centre for Aquaculture (RGCA)*  
*(MPEDA, Ministry of Commerce & Industry, Govt. of India)*  
*3/197, Poompuhar Road, Karaimeedu Village, Sattanathpuram P.O.,*  
*Sirkali Taluk, Mayiladuthurai district 609 109,*  
*Tamil Nadu, INDIA*  
*Tel: +91 4364 265200 to 265217, Website: [v2.rgca.co.in](http://v2.rgca.co.in)*  
*Email: [rgcaho@gmail.com](mailto:rgcaho@gmail.com); [rgca.ttac@gmail.com](mailto:rgca.ttac@gmail.com)*