



CIBA NEWS

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CENTRAL INSTITUTE OF BRACKISHWATER AQUACULTURE, CHENNAI

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DIRECTOR GENERAL, ICAR, VISITS MUTTUKADU EXPERIMENTAL STATION OF CIBA



Dr. R. S. Paroda, Director General, ICAR (second from left), listening to the explanation given by Shri S. Srinivasagam, Senior Scientist on mud crab culture. Dr. G. R. M. Rao, Director, CIBA (extreme left), looks on.

Dr. R. S. Paroda, Director General, ICAR and Secretary DARE, visited Muttukadu Experimental Station on 16-12-2000. The Director General went around shrimp / fish /

crab hatchery units, feed mill units and laboratories and evinced keen interest in the on-going research programmes of the Institute.

RESEARCH HIGHLIGHTS

BROODSTOCK DEVELOPMENT AND INDUCED BREEDING OF GROUPEP *EPINEPHELUS TAUVINA*

Development of finfish culture practices is one of the alternatives for diversification of brackishwater aquaculture in India, as shrimp culture suffered a severe setback due to viral disease and environmental problems. Among the finfishes, the brown-spotted grouper *Epinephelus tauvina* (Forsk.)

is an economically important fish, because of its fast rate of growth and high market potential. It is cultured in cages and earthen ponds in Southeast Asian countries such as Singapore, Malaysia, Hongkong and the Philippines. It attains a moderate size of 450-750 grams in six months culture

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period when fed with trash fishes. Farming of grouper in India is constrained by the shortage of seed. Hence, the development of grouper hatchery technology would be useful to overcome this problem and promote grouper farming in India.

Broodstock development

The Central Institute of Brackishwater Aquaculture, Chennai, took up a research project on broodstock development, induced breeding, seed production and culture of grouper *E. tauvina* in 1998. Adult and sub-adult fishes in the size range of 2.0 to 4.0 kg were procured from commercial catches and stocked in a 100 t capacity RCC tank. The fishes were maintained on a daily diet of Tilapia @ 5% body weight. Water quality in the tanks and health of fishes were regularly monitored. Maturity of the fishes was examined at monthly intervals through biopsy. During July-October 1999, majority of fishes were observed to be females having a mean ova size of 450 μm and above, which is suitable for induced breeding through hormone administration.

E. tauvina is a protogynous hermaphrodite. In this type of hermaphroditism, the fish is first a female. At a later stage, sex reversal takes place. Mature females are above 450 mm/3.0 kg in length and weight respectively. Mature males are usually above 8 kg in weight.

Induced breeding experiments were conducted and the hormone dosages for spawning of female fish were standardized. In the first experiment one female fish in the size of 510 mm/3.0 kg with a mean ova diameter of 468.5 μm was injected with HCG @ 750 IU/kg and LHRHa @ 40 $\mu\text{g/kg}$. The fish was stripped after 72 hours of priming dose and yielded about 4.75 lakh eggs.

In the second experiment, a female in the size of 500 mm/3.0 kg with a mean ova diameter of 494.4 μm was injected with HCG @ 1350 IU/kg and LHRHa @ 40 $\mu\text{g/kg}$. In this case



Mature grouper *Epinephelus tauvina*

the hormone was administered in split doses at regular intervals of 24 hours for 4 days. After 120 hours, stripping was resorted to and about 4.12 lakh eggs were collected.

In the third experiment both a mature female and one oozing male were treated. The female with size of 510 mm/ 3.0 kg having ova diameter of 509.2 μm was injected with HCG @ 750 IU/kg and after 24 hours LHRHa was administered to both female and the male, injected @ 40 $\mu\text{g/kg}$. The fishes were kept together for spawning. The female spawned after 36 hours of

first injection. The mean diameter of spawned egg was 805 μm with the range of 790-821 μm . However, the eggs were not fertilized since male fish did not respond.

SEABASS SEED PRODUCTION

Seabass *Lates calcarifer* (five sets of fishes) were bred and a total of 4 million hatchlings were obtained. The hatchlings were successfully reared (20-60 days) and the seed were supplied to several agencies / Depts. viz., Tamil Nadu Fisheries Dept., Central Institute of Freshwater Aquaculture, Bhubaneswar, Central



Dr. G.R.M. Rao, Director, CIBA, presenting the Country Report at the Meeting on Sustainable Fishery Management held at Tokyo, Japan.



Dr. G. R. M. Rao, CIBA, chairing a session of Country paper presentation at the Meeting on Sustainable Fishery Management held at Tokyo, Japan, on 14 October 1999.

Institute of Fisheries Education, Mumbai and private farmers.

VISITORS

- A group of Senior Agricultural Scientists from Bangladesh viz., Mr. Md. Anwar Iqbal, Mr. Mahbub Ahmed and Mr. Gholam Mustafa visited Muttukadu Experimental Station of CIBA, on 16 October 1999.

MEETING

Shri Hukumdeo Narayan Yadav, Hon'ble Union Minister of State for Agriculture, presided over the ICAR Senior Officers Meet organised by CIBA, at Tamil Nadu Veterinary and Animal Sciences University, Chennai, on 28 December, 1999.

ENGAGEMENTS

Dr. G. R. M. Rao, Director, attended the following Symposia / Workshop / Seminar / Meetings:

- Meeting on Sustainable Fishery Management organised by the

Asian Productivity Organisation in Tokyo, Japan, during 13-21 October 1999 and presented the Country Report entitled "Brackishwater Aquaculture in India - potential, growth, issues and strategies for sustainability".

- Visited Regional Centre of CMFRI, Mandapam Campus, to inspect the facilities under NATP project at the Centre and hold discussions with Co-operating Centre Principal Investigator (Shrimp and fish broodstock development and breeding under captive conditions), NATP, during 10-11 November 1999.

- Visited Narakkal Research Centre of the Institute, to participate in the Farmers Meet organised by the Institute, during 16-17 November 1999.

- Visited Research Station of Kerala Agricultural University, Pudukkottai, to hold discussions with Co-operating Centre Principal Investigator (CCPI) with regard to implementation of the project "Shrimp and fish broodstock development and breeding under captive conditions" on 16th November 1999.

- Attended the National Symposium on "Man and Environment: Reflections and Vision for Future" and delivered a keynote address during 2-4 December 1999, at Andhra University, Visakhapatnam.

- Chaired the Site Committee Meeting, for Technology Assessment and Refinement (TAR), through Institute Village Linkage Programme (IVLP), held at Chennai on 20 December 1999.

- Participated in the Tenth Meeting of the Steering Committee of Department of Biotechnology, at New Delhi on 21 December 1999.

The Scientists attended the following meetings/ workshops/ seminars:

- Dr. L. H. Rao, H.O.D., Crustacean Culture Division, visited Regional



Shri Hukumdeo Narayan Yadav, Hon'ble Minister of State for Agriculture (extreme left), receiving a memento from Dr. G. R. M. Rao, Director, CIBA, at ICAR Senior Officers Meet held at TANUVAS, Chennai, on 28 December 1999. Dr. K. Gopakumar, Deputy Director General (Fy), ICAR (second left), looks on.



Dr. K. Gopakumar, Deputy Director General, ICAR (centre), presiding over the Divisional Meeting of Directors of Fisheries Institutes at CIBA, Chennai.

Centre of CMFRI, Mandapam Camp and held discussion with Co-operating Centre Principal Investigator (Shrimp and fish broodstock development and breeding under captivity), NATP, during 10-11 November 1999.

- Dr. L. H. Rao, H.O.D., Crustacean Culture Division and Principal Investigator (Shrimp and fish broodstock development and breeding), visited Research Station of Kerala Agricultural University, Pudukkottai, to hold discussions with Co-operating Centre Principal Investigator (CCPI) with regard to implementation of the project, on 16th November 1999.
- Dr. T. C. Santiago, Principal Investigator (Shrimp and Fish Health Management), visited Fisheries College and Research Institute, TANUVAS, Tuticorin and held discussions with Co-operating Centre Principal Investigator (CCPI) with regard to implementation of project, on 12 November 1999.
- Dr. P. Ravichandran, Senior Scientist, attended the meeting convened by the Project Implementation Completion Reporting (ICR) Mission from the World Bank, on 17 November 1999, at New Delhi and presented the

progress of EMP Consultancy work at the shrimp culture sites in West Bengal.

- Shri M. Kathirvel, Senior Scientist, delivered a lecture on mud crab farming practices to the participants of the training programme on mud crab farming conducted by CMFRI, Kochi on 14 December 1999.

WORLD FOOD DAY

The World Food Day was celebrated by the Institute on 16 October 1999, at a function organised at CIBA headquarters, Chennai. The function was presided over by Dr. Mathew Abraham, H.O.D., Fish Culture Division and Acting Director, CIBA. The exhibition was inaugurated by Prof. Abdul Rahman, Dept. of Zoology, Govt. Arts College, Nandanam, Chennai. Special lectures were given on the main theme of this year, "Youth Against Hunger" by the following viz., i) Dr. (Smt.) P. Gandheeswari, Reader, Dept. of Zoology, Quaid-e-Millath Govt. Arts College for Women, Chennai. ii) Dr. K. Ramalingam, Lecturer, Dept. of Zoology, Govt. Arts College, Nandanam, Chennai. iii) Dr. S. A. Ali, Principal Scientist, CIBA, Chennai.

FARMERS' MEET

A Farmers' Meet was organised by the Narakkal Research Centre of

CIBA on 17 November, 1999. Dr. G.R.M. Rao, Director, CIBA, Dr. L.H. Rao, H.O.D., Crustacean Culture Division, Dr. Mathew Abraham, H.O.D., Fish Culture Division, Dr. S. A. Ali, Principal Scientist and Dr. K. K. Vijayan, Scientist (SS), attended the function.

HUMAN RESOURCE DEVELOPMENT

- Dr. M. Kumaran, Scientist, attended computer training on "C1 Office Automation packages - MS Office" at National Informatic Centre, Chennai, during 11-15 October 1999.
- Shri K. Ponnusamy, Scientist, attended the Orientation training programme on Technology Assessment and Refinement in connection with Institute Village Linkage Programme (IVLP) under NATP, at CRIDA, Hyderabad, from 28-31 October 1999.
- Shri N. Venugopal, T-5 and Shri Ashok Kumar, T-II-3, participated in a 6-day training programme on mud crab farming at CMFRI, Kochi, during 13-18 December 1999.

TRAINING

- A short-term training programme on shrimp breeding and hatchery technology was successfully conducted from 15-29 September 1999, at Muttukadu Experimental Station of CIBA.
- Lectures and demonstrations were given to eight B.F.Sc. students from College of Fisheries, OUAT, Rangailunda, Bhubaneswar, Orissa at the Muttukadu Experimental Station of CIBA, 7 October 1999.

STAFF NEWS

Appointment

- Smt. P. Mahalakshmi as Scientist, (Computer Applications in Agriculture) 2 November 1999.

