भाकृ अनुप
ICAR

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ICAR-CENTRAL INSTITUTE OF FRESHWATER AQUACULTURE
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सीफा समाचार
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DIRECTOR'S DESK

Warm greetings to all readers!

In the present quarter, the ICAR-CIFA had made a fairly good stride both in research and developmental fronts. The major research highlights during this period are: Successful induced breeding of the peninsular carp *Labeo kontius*, Studied the effect of delayed initial feeding on larval growth and survival of *Channa marulius*, Effect of different temperatures on hatching percentage and survival of *Channa marulius* larvae, Exploration of biological control of

Microcystis through intervention of floating weeds and different fish species, Effect of various live feeds on growth and survival of *Mystus cavasius* larvae, Multi-location on farm trials of CIFA GI Scampi, Fry to fingerlings rearing of hilsa in cement cistern with soil base, Breeding, seed rearing and culture of barred spiny eel, *Macrognathus pancalus* (Hamilton, 1822), Light intensity and photoperiod impacts health, growth and gonadal maturation of *Ompok bimaculatus* (Pabda), Apparent digestibility of dried *Azolla* powder incorporated diets in rohu, *Labeo rohita* (Hamilton, 1822), Development of an indirect ELISA for estimation of catalase activity in rohu serum, Screening of bacteria from freshwater aquaculture systems for assessing AMR pattern and Effect of different carbon sources on ammonium and NO3-N removal efficiencies by Pseudomonas aeruginosa WS L-9 after 2 days. A case study was undertaken on "Impact of production factors and constraints in pacu culture in Andhra Pradesh".

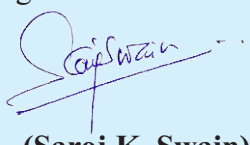
The most important event organized during the period is the Launching of Matsya Setu-The Virtual Learning App by the Hon'ble Union Minister for Fisheries, Animal Husbandry & Dairying, Shri Giriraj Singh on 6th July, 2021 in presence of Shri Pratap Sarangi, the then Hon'ble MoS, MFAHD & MSME, Govt. of India; Shri Jatindra Nath Swain, IAS, Secretary, DoF, MoFAHD, Govt. of India; Dr J.K. Jena, DDG (Fisheries Science), ICAR; Dr C. Suvarna, Chief Executive, NFDB. The other events during the period are: Webinar on National Fish Farmers' Day-2021 and Bharat Ka Amrut Mahotsav-National Campaign on Ecosystem Management for Sustainable Fisheries on 10th July 2021, National Campaign on "System Diversification in Aquaculture" under Azadi ka Amruth Mahostav on 1st September, 2021, Awareness Workshop on "Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act 2013' on 21st September, 2021, "Poshan Vatika Maha Abhiyan and Tree Plantation" programme, tree plantation campaign with planting of trees in the campus was undertaken on 17th September, 2021, Direct telecast of Hon'ble Prime Minister's address to the farmers on 28th September 2021 for the occasion of inauguration of National Institute of Biotic Stress Management, Raipur, Chhattisgarh, Celebration of Hindi Pakhwada (14-28 September 2021) and the Virtual National Awareness Programme on "ICAR-CIFA-GI Scampi: The Genetically improved and fast-growing strain of scampi for higher production and income.

Under training and extension activities, 9 training programmes were organized both in virtual and physical modes and 1431 different stakeholders in fisheries and aquaculture were trained and 162 water, soil and feed were tested.

Four MoUs were signed by ICAR-CIFA with i) Rajnandgaon Agri and Fisheries, Chhattisgarh (Providing Technical Support for Murrel Seed Production and Culture), ii) Sambalpur University, Jyoti Vihar, Sambalpur (Academic and Research Collaboration), iii) M/s MR Aquatech, Bhubaneswar through Agrinnovate India Ltd. (Technology License Agreement for FRP Carp Hatchery) and iv) Indian Farmers Fertilizer Cooperative (IFFCO) Ltd., IFFCO Sadan, New Dehli (A Contract Research Project on "Evaluation of Seaweed Based Dietary Formulation on Growth Performance in *Labeo rohita*").

Under Tribal Sub-Plan (TSP/STC), inputs were distributed and several training and demonstration programmes were undertaken in Kalahandi, Nabarangpur and Koraput districts of Odisha. The programmes of NEH activities included the supply of quality Amur carp seed to the Ziro valley, Arunachal Pradesh and the training programmes conducted on "Fish Culture and its Better Management Practices" for the tribal fish farmers of Tripura at Manikbazar, Teliamura, Khowai and Satnala, Kanchanpur in collaboration with a NGO, Sewa International. Under SCSP, several training and input distribution programmes were organized in Odisha, West Bengal, Andhra Pradesh and Rajasthan.

It is heartening to note that in spite of COVID-19 pandemic we were able to continue our good work both in research and developmental fronts. I am sure we will able to sustain the same and even strive for better in the future with strictly adhering to the situational pandemic protocols and guidelines.



(Saroj K. Swain)
DIRECTOR

First successful induced breeding of the peninsular carp *Labeo kontius*

The peninsular carp *Labeo kontius*, commonly called the pig mouth carp or Cauvery carp, is endemic to Western Ghats and is recorded from rivers Cauvery, Bhavani and Moyar and its tributaries in the states of Karnataka, Tamil Nadu and Kerala. This fish, reported to attain a maximum size of 61 cm can be domesticated for pond culture, will be a welcome addition to aquaculture basket of our country. Under its natural riverine habitat, *L. kontius* is observed to breed once per year during the monsoon season in June –August. However, this fish has not been induced bred under captive conditions earlier and as such information on breeding habits, fecundity, embryonic and larval development, seed rearing and culture of this species is very limited.

First successful induced breeding of pond cultured *L. kontius* was achieved by ICAR-CIFA. The Bangalore center of ICAR-CIFA has been successful in collecting the juveniles from the wild followed by their adaptation to culture conditions and elucidation of their growth pattern, culminating in their sexual maturity, finally resulting in induced breeding of this species. For captive breeding, brood stock was raised in earthen ponds @ 2000/ha with provision of quality feed (35% protein), regular health check up and management of water quality. Females during breeding season are distinguished by the swollen belly and pinkish vent in contrast to flat belly and expression of milt on slight application of pressure near the vent in males.

Pond cultured *L. kontius* attained first maturity at one and half years of age and was successfully induced bred for the first time using a preparation consisting of salmon gonadotropin releasing hormone analogue and Domperidone (0.5 ml/kg body weight) to both males and females. Hormone administered brooders were released to the breeding pool of a circular hatchery and allowed to remain there with water circulation and overhead shower running throughout. Spawning occurred 28 h post hormone administration. The fertilized eggs immediately underwent a remarkable swelling and increased in size by approximately three times that of ripe ovarian eggs. These fertilized eggs were transferred to the hatching pool of a circular hatchery with continuous water circulation, keeping the eggs in a state of buoyancy all the time. Hatching occurred within 20-24 h of incubation and the spawn that hatched out were transparent, with conspicuous yolk mass and distinct head with transparent eyes. The yolk got completely absorbed and the larvae started feeding by day 5 post-hatching.

Fertilized egg

Larval development

5 Day old larvae

This development of induced breeding technology for *L. kontius* is likely to pave way for introduction of this new and novel species from peninsular region into the aquaculture basket of our country.

Effect of delayed initial feeding on larval growth and survival of *Channa marulius*

An experiment was conducted to find the effect of initial delayed feeding on the growth and survival of *C. marulius* larvae. For the experiment, the one-day post-hatch (1 DPH) larvae were stocked in 15 glass aquaria at 10 larvae/L water. The delayed feeding treatments were: feeding starts on 3 DPH; 4 DPH; 5 DPH; 6 DPH; and 7 DPH. The larvae were fed with planktons (rotifers and copepods) during the experimental period of 21 days. Morphometric characteristics of the larvae were also measured on the 7^{th}, 14^{th}, and 21^{st} days to evaluate their effect under different initial delayed feeding times. After 21 days, the survival rate and growth of the delayed fed larvae were examined. The highest survival rate of 89.28% was found in 3 DPH, whereas higher growth was observed in 4 DPH. The result suggests that for better survival initial feeding should start at 3 DPH, whereas, to achieve better growth the feeding starting at 4 DPH may be considered.

Effect of different temperatures on hatching percentage and survival of *Channa marulius* larvae

An experiment was conducted to study the effect of different temperatures 28±1°C (T1), 30±1°C (T2), 32±1°C (T3), 34±1°C (T4), 36±1°C (T5), 38±1°C (T6) on egg hatching, and larval survival of *Channa marulius*. The results showed a significantly higher percentage of hatching rate in T1 (95.67%), followed by T2 (82.67%) and T3 (81.33%). However, eggs in T5 and T6 could not hatch. Deformities during embryonic development were observed in higher temperatures which lead to failure in hatching. The all hatched groups (T1, T2, T3 and T4) were reared further for three weeks on normal water temperature to observe the survival and growth. After three weeks of rearing, the survival rate was found to be highest in T1 (95.54%) followed by T2 (92.95%).

Normal larva hatched under conducive temperature, T2 (28±1°C)

Larval development hampered at temperature under T5 (36±1°C)

Exploration of biological control of *Microcystis* through intervention of floating weeds and different fish species

Two floating aquatic macrophytes (*Azolla* sp., and *Pistia* sp.), one herbivore (*Ctenopharyngodon idella*) and two omnivore fishes (*Osteobrama belangeri* and *Puntius japonicus*) were evaluated and compared for their efficiency as bio-manipulators to suppress cyanobacterial growth predominantly *Microcystis* population for a period of thirty days. The experiment constituted five treatments and a simultaneous control (neither macrophyte nor fish supplemented) with two replications. Cement tanks (50 m^3) were approx. uniformly inoculated with defined quantum of *Microcystis* inoculum (2.29X10^4 cells ml^{-1}) without artificial feeding. *Azolla* and *Pistia* were supplemented @ 7.5 kg in two treatments and fishes (grass carp, puntius and pengba) were stocked @ 100 nos. of fingerlings in three treatments. *Azolla* based treatment has recorded pH, total phosphorous (TP) and Total Ammonium Nitrogen (TAN) of 8.40±0.56, 0.04±0.03 and 0.14±0.07, respectively, whereas Pistia supplemented tanks have recorded 8.90±0.30, 0.05±0.03 and 0.12±0.05, respectively. Though there was inhibition in *Microcystis* growth in initial 15 days in fish based treatments, the population increased thereafter. There was a significant and continuous

check on *Microcystis* growth in weed treatments rather than fish treatments. The percentage weight gain followed the order of puntius (24.5 %) > pengba (22.7 %) > grass carp (20.5 %) with minimum survival rate of 95 %. *Azolla* and *Pistia* maintained optimum water quality and could suppress *Microcystis* population growth. Hence, *Azolla* can be used as a potential biocontrol agent for the control of *Microcystis* in the culture system followed by *Pistia*.

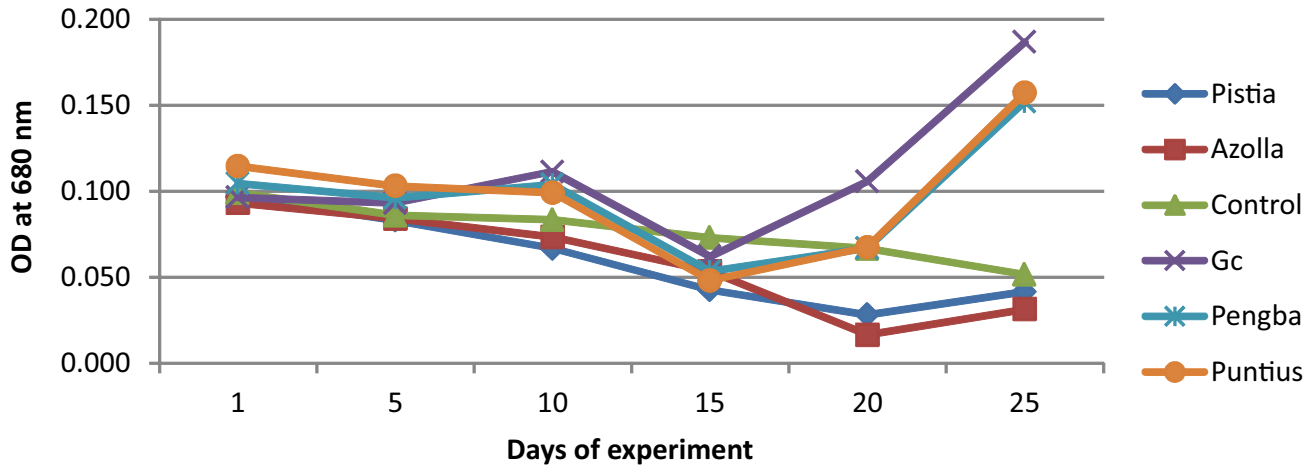


Fig. 1. Growth trend of *Microcystis* during the experiment in large outdoor cement tanks

Effect of various live feeds on growth and survival of *Mystus cavasius* larvae

An experiment was conducted to ascertain the best live feed to improve the growth and survival in *Mystus cavasius* larvae. The 4 days post hatch (dph) larvae were stocked at 20 nos per tank and the study was carried out for 21 days. Three different live feeds were used in this study such as *Artemia* nauplii, tubifex and mixed plankton. It was observed that *Mystus cavasius* larvae fed with tubifex worms as live feed had significantly (p<0.05) higher body weight (179 mg) and survival rate (97.50 %) compared to other live feeds. It is recommended that tubifex worms could be an excellent live feed to improve the growth and survival of *Mystus cavasius* larvae.

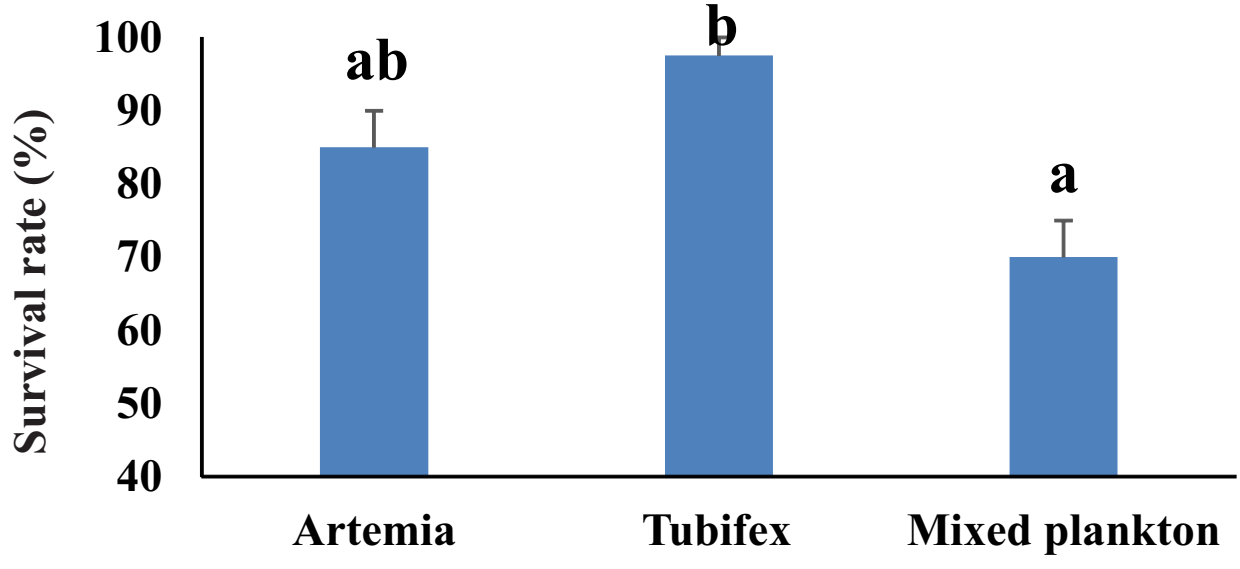


Fig. 2. Survival rate of *Mystus cavasius* larvae with different live feed.

Multi-location on farm trial of CIFA GI Scampi

A total of 12 farms (3 from Andhra Pradesh, 4 from West Bengal and 5 from Odisha) were selected for conducting multi-locational trials of CIFA GI Scampi. CIFA GI Scampi seeds were supplied to 12 farmers (10,000 PL supplied to Andhra Pradesh, 7,500 juveniles to West Bengal and 11,000 PL to Odisha). The farmers were advised to culture scampi with Indian major carps (catla and rohu). After pond preparation, in each farm, the catla and rohu fingerlings/advanced fingerlings were stocked at ratio 20:80 and the stocking density maintained was 6000 nos./ha.

Fry to fingerlings rearing of hilsa

Hilsa fry produced through larval rearing in circular FRP tanks (800 L water volume) were stocked at the stocking density of 2 lakh/ha in a rectangular cement cistern (0.006 ha) with soil base for production of fingerlings. Fry were reared for 126 days during April to August 2021. During this rearing period, the fry grew to 66 mm/2.52 g from the initial stocking size of 19.6 mm/0.06 g with 44% survival rate. Fish were fed once/day with mixed zooplankton and twice/day with supplementary feed (45% CP and 10% fat) *ad-libitum*.

Hilsa fingerlings

Breeding, seed rearing and culture of barred spiny eel, *Macrognathus pancalus* (Hamilton, 1822)

A total number of 32 brooders of *Macrognathus pancalus* including both male and females were collected from wild and stocked in the FRP tanks. The average size of the collected fishes was 16.65±2.47cm / 23.36±5.43 g with the condition factor (k) ranged from 0.53 to 1.12. The hepato-somatic and gonado-somatic indices of the collected fish ranged from 0.90 to 1.39 and 8.49 to 11.4, respectively. Fishes appeared to take shelter in the hideouts. Initially, they were provided with supplementary feed, but they avoided accepting which indicates that they need weaning to supplementary feeds. When they were provided chopped live sludge worm, they moved out from hideout and accepted it. It appears that they are visual feeders and prefer feeding on motile foods that might stimulate their feeding appetite. Natural breeding of *M. pancalus* conducted in the month of August in rectangular FRP tank where water hyacinths were put for egg attachment. The broodstock of *M. pancalus* of 179-186 mm/23.2-24.4 g showed 0.30 – 0.45 g of total weight of two ovaries with 380-393 no. of eggs/g of ovary weight and 5-7 no. of egg/g of body weight in the month of September. The fertilized eggs hatched to produce spawn after 3-5 days when they were put in another tank. The larval rearing continues in feeding with planktons, formulated feed and chopped tubifex worms.

Fingerling of *Macrognathus pancalus*

Matured ovary of female of *M. pancalus*

Macrognathus pancalus

Light intensity and photoperiod impacts on health, growth and gonadal maturation of *Ompok bimaculatus* (Pabda)

A study was conducted to assess the effect of light intensity and photoperiod on pabda. Pabda collected from grow-out ponds, acclimatised and a group of 20 fish (1:1) of female and male were then stocked in 0.4 m^3 rectangular tanks covered with black paint coated FRP sheet. The experiment was subjected to six photoperiod treatments: 24:0 light: dark (L:D), 12L:12D, 15L:9D, 9L:15D, 24D:0L and natural conditions for 60 days. Except for full dark and natural conditions, the rest of the photoperiod treatments were conducted with 3 different light intensities (500 lux, 1000 lux, and 1500 lux). The fishes were fed a commercial diet (40% crude protein) at a daily rate of 2% of body weight, twice a day, for 60 days. The highest final body weight gain, average daily gain, specific growth rate, and feed conversion ratio were observed in 15L: 9D photoperiod with light intensity of 500 lux. All haematological parameters differed significantly ($p<0.05$) compared to control. The results indicated that long photoperiod condition upto 15L: 9D raises the haemoglobin content, red blood cell (RBC), white blood cell (WBC) count and improves overall health of pabda. Hormonal analysis was also done. Irrespective of different photoperiod, increased light intensity induced a higher concentration upto 10.48 + 0.05 pg/ml and 4.57+ 0.03 pg/ml of circulating testosterone (T) and 11-keto testosterone (11-KT), respectively. The reproductive performance demonstrated that long photoperiods with higher light intensity promote advanced gonadal maturation and better reproductive performance of pabda. The present study showed that light intensity and photoperiod manipulation can induce better growth, promote good health, advances the gonadal maturation and better reproductive performance of butter catfish, which can help to get round the year quality pabda production.

Apparent digestibility of dried azolla powder incorporated diets in rohu, *Labeo rohita* (Hamilton, 1822)

Advanced fingerlings of *Labeo rohita* (Hamilton, 1822) were reared in aerated indoor tanks to elucidate the dry matter and nutrient digestibility of dried azolla powder in the feed. The fish were fed nearly isocaloric formulated diets containing azolla powder replacing the main ingredients – groundnut cake and rice bran of the control diet at 10, 20, 30 and 40% levels. Total dry matter digestibility and major nutrient digestibility were estimated using acid insoluble ash as the marker. There was an apparent reducing trend in the digestibility (%) of dry matter, protein, fat and NFE with increased dietary incorporation levels of azolla. Only the protein and fat digestibility of 20% azolla diet were comparable with control, higher incorporation levels showing significant reduction in the digestibility values (Table 1). Considering the results of the present study, it is concluded that incorporation of dried azolla in the diet of *L. rohita* up to 20% level does not affect nutrient digestibility.

Table 1. Digestibility (%) of dry matter, protein, fat and NFE by rohu in the experimental diets

Diets	Dry matter digestibility	Protein digestibility	Fat digestibility	NFE digestibility
Control	81.70±0.62^{c}	87.97±0.40^{c}	99.39±0.12^{c}	91.33±0.95^{c}
10% Azolla	76.92±1.24^{b}	85.72±0.47^{c}	99.48±0.03^{c}	83.13±1.26^{b}
20% Azolla	76.00±1.66^{b}	85.17±0.74^{c}	96.76±0.79^{b}	84.22±0.94^{b}
30% Azolla	65.42±2.45^{a}	77.59±1.43^{b}	93.60±1.02^{a}	80.46±1.63^{ab}
40% Azolla	64.96±0.66^{a}	73.45±1.68^{a}	93.61±0.65^{a}	77.22±1.30^{a}

Impact of production factors and constraints in pacu culture in Andhra Pradesh: A case study

The major factors that contribute to production cost in red-bellied pacu culture are feed (64%) followed by lease (13%), seed (10%), labour (7%), healthcare items (3%) and electricity and other charges (3%) (Fig. 3). Early accomplishment of culture cycle in 8 months (240 days) has prompted 78% of fish farmers to adopt the pacu farming in Andhra Pradesh. Stocking of 100-150 g fingerling resulted in faster growth and the culture period is about 8 months. Some

farmers (22%) could conclude crop period in 10 months (300 days) when they stocked with smaller seed (50 g) thus extending crop period by 2 months (25%).

There were not much constraints found in pacu culture. Farmers have diverged equally on the response that pacu attacks carps in polyculture systems. Occurence of red disease was stated as one of the major limiting factors by 40.7% farmers followed by 37.9% of farmers who vouched that it is highly sensitive to DO stress. Farmers accounting to 13.9% said that there are less complications in the culture management. It is interestingly recorded that argulosis problem was not encountered in red-bellied pacu farms. Carps stocked in polyculture ponds along with red-bellied pacu were not found to be infested by Argulus. Little more than half of the farmers (50.9%) have admitted that red-bellied pacu attacks Indian major carps and damage caudal fin, whereas, 49.1% of farmers disagreed.

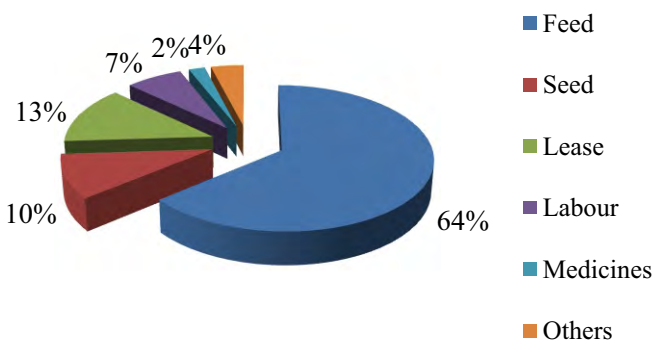


Fig. 3. Production factors in red-bellied pacu culture in Andhra Pradesh

Development of an indirect ELISA for estimation of catalase activity in rohu serum

Rohu catalase (*Lr*CAT) gene was amplified, cloned and expressed in bacterial system to produce recombinant protein. The same was used to generate antibody in rabbit for development of an indirect ELISA assay. The standard curve was prepared by plotting the graded concentrations of recombinant protein in serial dilutions (Fig. 4). The sensitivity of this assay was found to be 0.78 ng. The detection limit was found to be from 0.78-400 ng/ml. Its level was significantly increased up to 12 h following *Aeromonas hydrophila* challenge in serum of rohu juveniles that declined later to normal level at 72 h post-challenge. Similarly, its level in serum was also increased during ammonia stress in rohu juveniles. Hence, it may serve as a potential biomarker to measure both biotic and abiotic stress in fish.

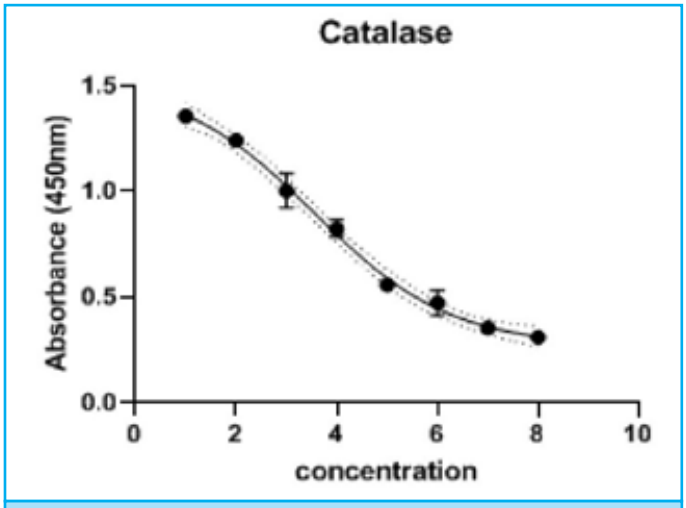


Fig. 4. Standard curve developed for quantification of serum catalase level in *L. rohita*

Screening of bacteria from freshwater aquaculture systems for assessing AMR pattern

Under Network Programme on Antimicrobial Resistance (AMR) in Fisheries & Aquaculture; bacteria isolates from fish and water samples, sampled from Khordha and Balasore districts of Odisha were analyzed and processed for AST. A total 153 bacterial isolates were analysed comprising of 46 isolates of *E. coli,* 47 isolates of *Staphylococcus* sp., 60 isolates of *Aeromonas* sp. *E. coli* isolates from fish were resistant to cefoxitin (15.6%), cefotaxime (3%) and tetracycline (2.8%) (Fig. 5). Whereas, the water isolates were resistant to cefoxitin (15.6%), cefotaxime (7.9%), ceftazidime (7.8%) and aztreonam (7.8%) (Fig. 6). The *Aeromonas* sp. isolates from fish were found resistant to cefoxitin (87.9%), trimethoprim-sulphamethoxazole (52.4%), cefotaxime (30.1%), ceftazidime (24.8%) (Fig. 7). Whereas, the water isolates were resistant to cefoxitin (63.3%), trimethoprim-sulphamethoxazole (62.8%) and ceftazidime (37.5%) (Fig. 8). *Staphylococcus* sp. isolates from fish were found resistant to penicillin (97%) followed by erythromycin (58%), trimethoprim-sulphamethoxazole (35%) (Fig. 9). Whereas, the water isolates were resistant to penicllin (63%) followed by oxacillin (7%) and cefoxitin (6%) (Fig. 10).

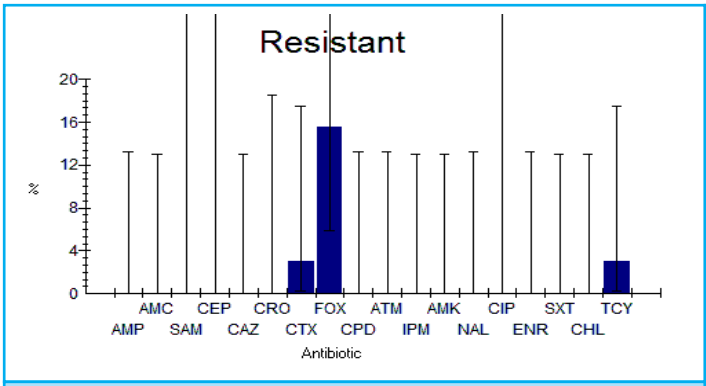


Fig 5. AMR Profile of *E. coli* isolates from fish (n=33)

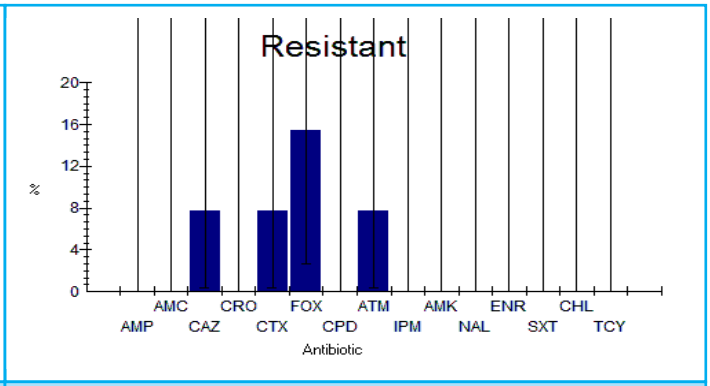


Fig 6. AMR Profile of *E. coli* isolates from water (n=13)

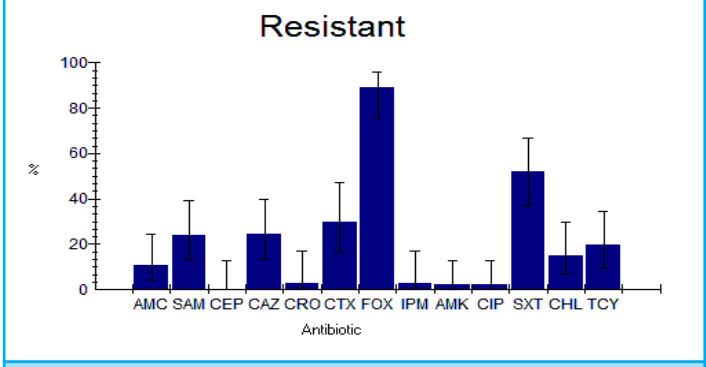


Fig 7. AMR Profile of *Aeromonas* sp. isolates from fish (n=46)

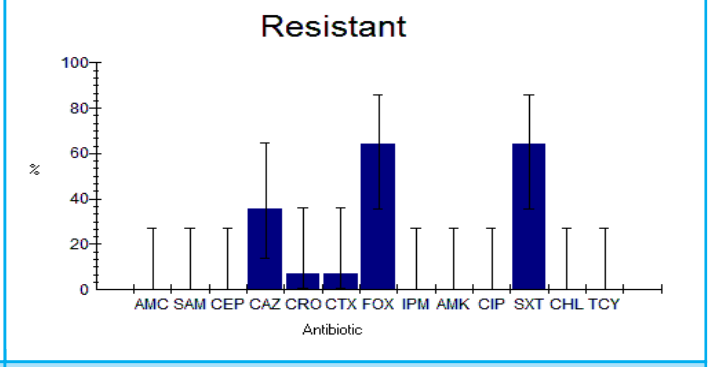


Fig 8. AMR Profile of total *Aeromonas* sp. isolates from water (n=14)

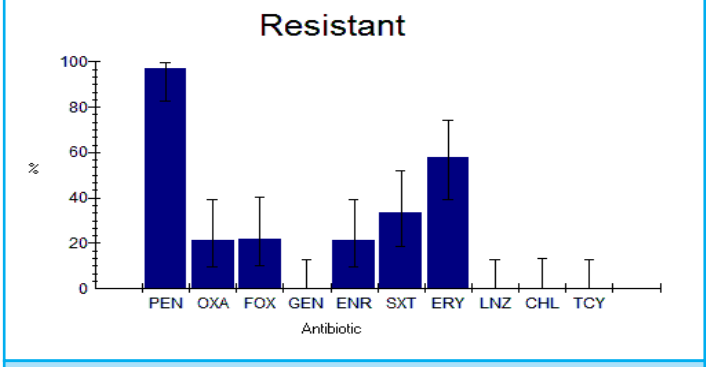


Fig 9. AMR Profile of *Staphyloccus* sp. isolates from fish (n=33)

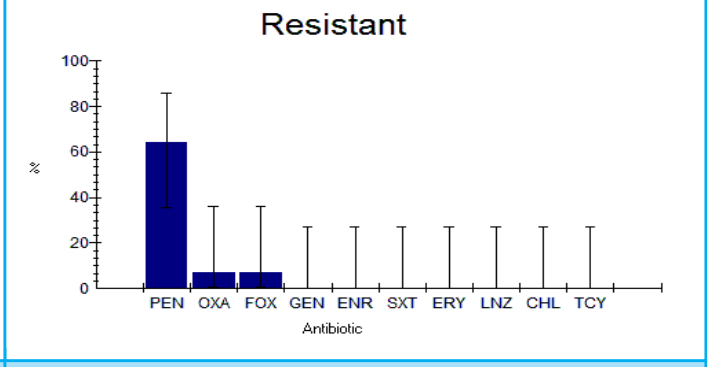


Fig 10. AMR Profile of *Staphyloccus* sp. isolates from fish (n=14)

Effect of different carbon sources on ammonium and NO_3-N removal efficiencies by *Pseudomonas aeruginosa* WS L-9 after 2 days

Four different carbon sources namely acetate, glucose, citrate and succinate were used for evaluating the nitrogen removal capacity of the isolate WS L-9. In basal media having ammonium chloride as (nitrogen) N- source and different (carbon) C – sources such as acetate, glucose, citrate and succinate was used as carbon sources at C: N ratio of 10. The results revealed that with the use of glucose and citrate as carbon source in the media, the nitrogen removal (ammonium-N) capacity of the isolate WS L-9 was more than 80 % (Fig. 11). The isolate could remove ammonium more than 80% and nitrate more than 60% after using glucose and citrate as C- sources in the media after 48 hour.

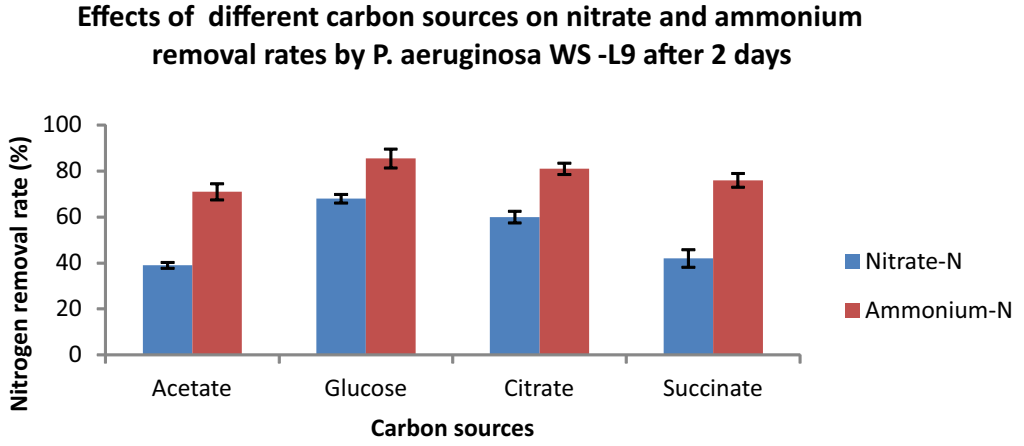


Fig. 11. Nitrogen removal capacity of *Pseudomonas aeruginosa* WS L-9 in different c- sources

Selective breeding & dissemination of Jayanti rohu and improved catla from ICAR-CIFA

During breeding season (July-September, 2021) 56 full-sib families for 2021 year class of Jayanti rohu and 33 full-sib families of improved catla were produced along with resistant and control group of rohu against *A. hydrophila* (Fig.12). All the families were stocked in separate nursery pond & were reared till fingerling size for tagging. During breeding season total 135 lakh Jayanti rohu and 25 lakh improved catla spawn were produced (Fig.13). Out of that 40 lakh Jayanti rohu spawn had been supplied to National Freshwater Fish Brood Bank (NFFBB), Kausalyaganga, Bhubaneswar and rest were disseminated to 9 different states across India as shown in the Table 2. Total 24.75 lakh improved catla spawn were distributed to the farmers from six states for field trial (Table 3).

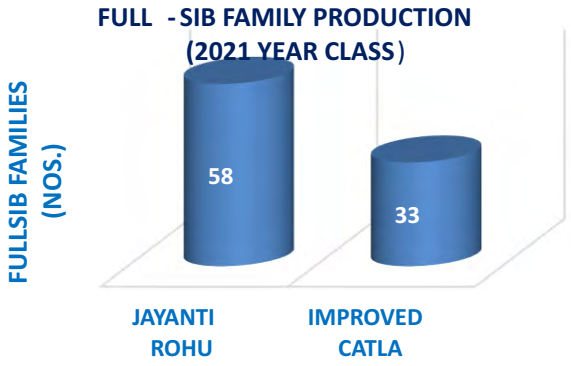


Fig 12: Production of Full-Sib Families (June-Sept, 2021)

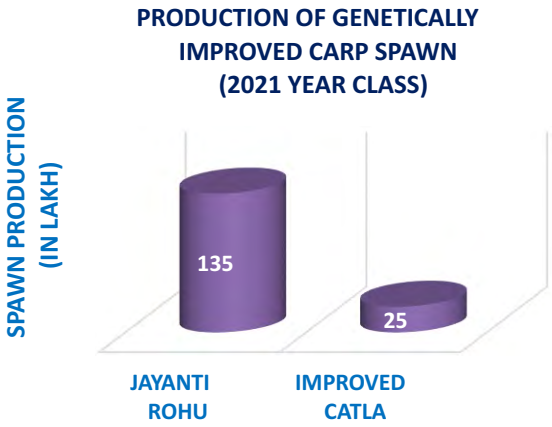


Fig 13: Production of improved carp spawn (June-Sept, 2021)

Table 2: Dissemination of Jayanti rohu spawn from ICAR-CIFA (2021)

S.N.	State	Quantity (Lakh)
1.	Odisha	54.75
2.	NFFBB, Kausalyaganga	40.00
3.	West Bengal	10.00
4.	Meghalaya	5.00
5.	Gujarat	2.50
6.	Assam	8.00
7.	Tripura	1.00
8.	Jharkhand	8.00
9.	Punjab	3.00
10.	Bihar	2.00
	Total 1	**34.25 lakh**

Table 3: Distribution of Improved Catla spawn from ICAR-CIFA (2021)

S.N.	State	Quantity (Lakh)
1.	Odisha	18.25
2.	West Bengal	2.5
3.	Meghalaya	2.0
4.	Kerala	1.0
5.	Jharkhand	0.5
6.	Maharashtra	0.5
	Total	**24.75 lakh**

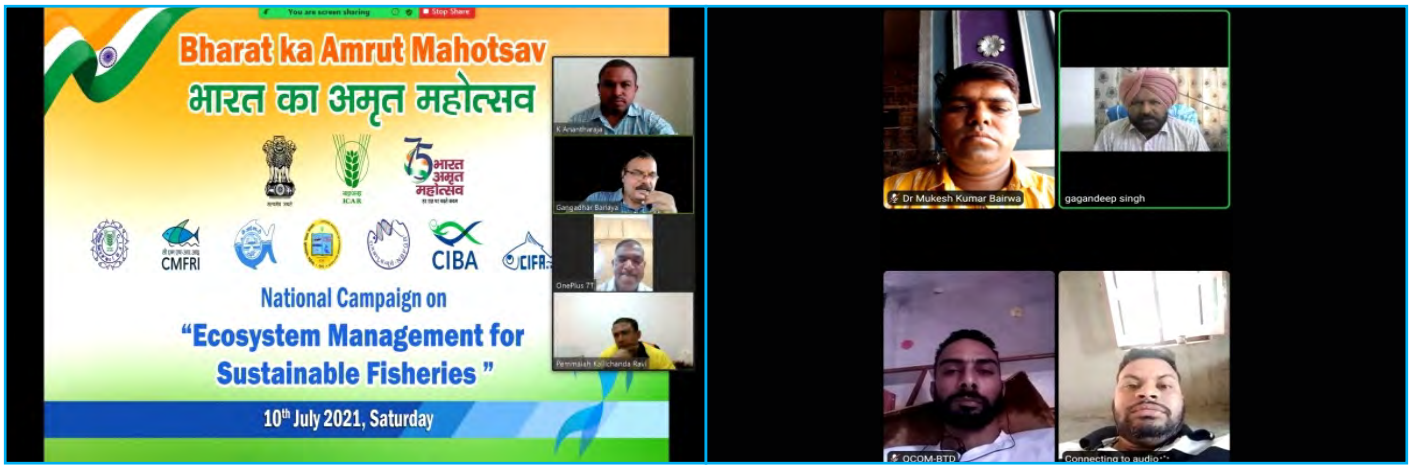
IMPORTANT EVENTS

Launching of Matsya Setu-The Virtual Learning App

The Matsya Setu App, developed by ICAR-CIFA with funding support of NFDB has been virtually launched by the Hon'ble Union Minister for Fisheries, Animal Husbandry & Dairying, Shri Giriraj Singh on 6th July, 2021 attended by Shri Pratap Sarangi, the then Hon'ble MoS, MFAHD & MSME, Govt. of India; Shri Jatindra Nath Swain , IAS, Secretary, DoF, MoFAHD, Govt. of India; Dr J.K. Jena, DDG (FS), ICAR; Dr C. Suvarna, Chief Executive, NFDB, Hyderabad and Dr S.K. Swain, Director, ICAR-CIFA. Due to COVID-19 pandemic situation many fish farmers are not able to come to research institute for attending training programmes physically and therefore, this App will serve as learning tool for them. The App teaches the advanced aquaculture technologies to fish farmers through free online classes with practical demonstrations on breeding, seed production and grow-out culture of commercially important fishes and shellfishes, Better Management Practices (BMPs) to be followed in maintaining the soil & water quality and also feeding and health management in aquaculture operations. The App has been developed to include all the major regional languages of India. At present, the App is in English and Hindi (selected course modules) and the course modules are being made in the regional languages such as Marathi, Bengali, Kannada, Malayalam, Odia, Telugu and Tamil. Additional learning materials can also be provided to the learners within the course modules. To motivate the learners and provide a lively learning experience, Quiz/Test options were also provided for self-assessment. Upon successful completion of each course module, an e-Certificate will be auto-generated. To solve any queries raised by the learner, an option has been given to submit the questions in the video chapter itself. Appropriate, specific advisories by experts will be sent to the app as push notifications. The link for the same is https://play.google.com/store/apps/details?id=com.fish.cifa

Webinar on National Fish Farmers' Day-2021 and Bharat Ka Amrut Mahotsav– National Campaign on Ecosystem Management for Sustainable Fisheries

ICAR-CIFA had organised a Webinar on 21st National Fish Farmers' Day along with Bharat Ka Amrut Mahotsav – National Campaign on Ecosystem Management for Sustainable Fisheries on 10th July, 2021. Dr. S. K. Swain, Director- ICAR-CIFA welcomed all participants virtually and introduced the Guests. The lead speakers of 1st session were Dr Shakuntala Haraksingh Thilsted, Global Lead for Nutrition and Public Health, WorldFish, Malaysia & World Food Prize Laureate 2021 and Dr J. K. Jena, DDG (Fisheries Science), ICAR, New Delhi. Dr. J. K. Jena welcomed the esteemed gathering of the programme and remembered the epoch-making discovery of induced breeding of Indian major carps by Dr K H Alikunhi and Dr Hiralal Chaudhury on 10th July 1957. He also emphasized on the importance of the day. Madam Dr Shakuntala was unable to join the programme but had sent her presentation on 'The Role of Aquatic Foods in Nourishing India". In the second session as a part of the Bharat Ka Amrut Mahotsav – National Campaign on Ecosystem Management for Sustainable Fisheries, Dr P.C. Das, Principal Scientist, ICAR-CIFA delivered a lecture on "Pond Ecosystem Management for Sustainable Aquaculture". Progressive fish farmers from different parts of the country participated in the event and the aquaculture experts from the institute had a detailed discussion on various problems faced by the farmers. Director, ICAR-CIFA had felicitated 15 fish farmers on this occasion. Similarly, all the four RRCs of ICAR-CIFA have observed the National Fish Farmers' Day and Bharat ka Amrut Mahotsav in their respective regional languages. More than 600 participants had joined the webinar including all staff of ICAR-CIFA.



- The Institute conducted a plantation programme in collaboration with Inner Wheel Club, Bhubaneswar on 14th July 2021. Smt. Aparajita Sarangi, Hon'ble MP, Bhubaneswar was the Chief Guest on the occasion.

- ICAR-CIFA organized National Campaign on "System Diversification in Aquaculture" under *Azadi ka Amruth Mahostav* on 1st September, 2021. All scientist, technical staff members and research scholars were participated the programme on virtual mode. Also, RRCs of ICAR-CIFA organized the same on the occasion. An interactive session with fish farmers in Kannada language was organized.

- An Awareness Workshop on "Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act 2013' was organised on 21st September, 2021. Smt. Namrata Chadha, Former Member, Odisha Mahila Ayog was the chief guest on the occasion.

- An Interactive Workshop and Awareness Programme on 'Scientific Fish Farming for Generation of Livelihood and Income" at Mantripalem, Krishna District, Andhra Pradesh was organized by RRC, ICAR-CIFA, Vijayawada on 15th September 2021.

- As a part of the "Poshan Vatika Maha Abhiyan & Tree Plantation" programme, tree plantation campaign with planting of trees in the campus was undertaken on 17th September, 2021 at the Headquarters, RRCs of the institute and KVK, Khordha. Including 155 farmers, there were 323 participants attended the programme. A total of 315 sapplings and 100 packets vegetable seeds were distributed to public by the Institute including RRCs and KVK, Khordha. Also, RRC, Rahara had served food prepared from millets to the farmers/stakeholders participating in the event.



Direct telecast of Hon'ble Prime Minister's address to the farmers

A live telecast was organised by ICAR-CIFA and KVK, Khordha for the farmers, students, staff and other stakeholders to showcase inauguration of National Institute of Biotic Stress Management, Raipur, Chhattisgarh by the Hon'ble Prime Minister Shri Narendra Modi ji on 28th September 2021. On the occasion Honourable PM discussed and interacted with the farmers and also distributed "Clean Green Campus Award" to 4 universities and dedicated 35 crop varieties to the Nation. An awareness camp for large scale dissemination of climate resilient technologies and methods was also organized. Earlier, Dr. S. K. Swain, Director, ICAR-CIFA welcomed the farmers and other dignitaries. Dr. P. Swain, Principal Scientist interacted with the farmers about the climate resilient aquaculture technologies. A farmer-scientists interaction meet was also held and the queries related to agriculture and allied sectors were addressed by the KVK scientists. Around 185 participants including 100 farmers and farmwomen attended this event and watched the live telecast of the Hon'ble Prime Minister's address to the farmers.


Hindi pakhwada

- Celebration of Hindi Divas and Inaugural Session of Hindi Pakhwada (14-28 September) was organized in the Institute on 14th September, 2021. All the staff of the institute have participated in the event. "Rajbhasha Workshop on Grammatical Mistake and Solutions' was held on 17th September, 2021.

Awareness programme on "Scientific fish farming for livelihood generation" organized during celebrations of National Fish Farmer's day

Regional Research Centre of ICAR-CIFA, Vijayawada organized the "National Fish Farmers Day" and "Bharat ka Amrut Mahotsav National Campaign on Ecosystem Management for Sustainable Fisheries" to mark the 75 years of Independence at Venkatapuram village, Mopidevi mandal, Krishna District, Andhra Pradesh on 10th July 2021. Along with the staff of RRC, Vijayawada, 75 participants mainly the fish farmers attended the programme. Shri. S. Sanjeev Rao, Asst. Director of Fisheries was the Guest of Honour and explained the farmers about the departmental schemes and their applications. Dr. P.V. Rangacharyulu has given inaugural address and enlighten about the "Bharat ka Amrut Mahotsav-National Campaign on Ecosystem Management for Sustainable Fisheries". The participants were made aware about the need of celebrations of fish farmers' day, scientific fish farming and the recently laucnched PMMSY scheme of Govt. of India for their benefit to avail the subsidies for the development in aquaculture and fisheries sector. Avanigadda T. Ravi, Sarpanch, Venkatapuram Village and K. Rajeshwara Rao, President of Sri Rama Fishermen Co-operative Society were also present in the programme.

Virtual National Awareness Programme on "ICAR-CIFA-GI Scampi: The Genetically improved and fast-growing strain of scampi for higher production and income"

ICAR-CIFA in collaboration with the DoF, MoF, Animal Husbandry and Dairying, GoI and NFDB, Hyderabad organized a Virtual National Awareness Programme on "ICAR-CIFA-GI Scampi: The Genetically Improved and Fast-growing Strain of Scampi for Higher Production and Income" on 27th July, 2021. Shri J.N. Swain, I.A.S., Secretary, Department of Fisheries, Ministry of Fisheries, Animal Husbandry & Dairying, Government of India marked his presence as the Chief Guest of the occasion. Dr. J.K. Jena, Deputy Director General (Fisheries Science), ICAR; Dr. C. Suvarna, I.F.S, Chief Executive, NFDB, Hyderabad and Shri Sagar Mehra, Joint Secretary (IF), DoF, MoF, Animal Husbandry and Dairying, GoI were among the Guests of Honor during the occasion. The awareness programme was organized under the PMMSY CS Scheme on "Scaling-up of Genetic Improvement Programme of Freshwater Prawn *Macrobrachium rosenbergii* (Scampi)" sanctioned to the ICAR-CIFA, Bhubaneswar. A total of 364 participated including the State Fisheries Department Officials from 9 States, Scampi hatchery operators and farmers, scientists and academicians participated in the awareness programme.

Training Programmes

S. N.	Title of Training Programme	Duration	No. of participants		
			Male	Female	Total
1.	Online Training on Freshwater Pearl Culture for Entrepreneur Development - First Batch	14-16 July 2021	527	109	636
2.	In-Plant Attachment Training Programme of College of Fishery Science, Jabalpur, MP	26 July-3 Aug 2021	–	–	30
3.	Hands on Training on "Pabda breeding, Rearing and Culture" for Officers of DoF, Govt. of Bihar	09 -12 Aug 2021	02	–	02
4.	Online Training on Polyculture of Scampi with Indian Major Carps	20 Aug 2021	–	–	376
5.	Online Training on Breeding & Culture of Murrel and Anabas	25-27 Aug 2021	113	17	130
6.	Online Training on Soil and Water Analysis and its Management in Aquaculture	1-3 Sept 2021	87	08	95
7.	Online Training on Breeding & Culture of Minor Carps and Barbs	15-17 Sept 2021	52	05	57
8.	Online Training on Breeding, Seed Production and Culture of Freshwater Prawn	21-23 Sept 2021	78	13	91
9.	Fish Species Diversification in Freshwater Aquaculture (organized by RRC, Vijayawada)	28-30 Sept 2021	13	01	14
	Total				1431

Technical guidance (individual)

Months	Samples tested				Tech. queries
	Water	Soil	Fish disease	Feed	
July 2021	41	-	-	10	51
Aug 2021	37	03	-	-	59
Sept 2021	30	01	-	-	52
Total:	**108**	**04**	**-**	**10**	**162**

OTHER EXTENSION ACTIVITIES

MoUs signed:

During this quarter the Institute has signed the MoUs with the following organizations for undertaking collaborative works.

S. N.	Title of Training Programme	Date of Signed	Purpose
1.	Rajnandgaon Agri & Fisheries, Chhattisgarh	05.08.2021	Providing Technical Support for Murrel Seed production and Culture.
2.	Sambalpur University, Jyoti Vihar, Sambalpur (Odisha)	23.09.2021	Academic and Research Collaboration
3.	M/s MR Aquatech, Bhubaneswar through Agrinnovate India Ltd	08.09.2021	Technology License Agreement for FRP Carp Hatchery
4.	Indian Farmers Fertilizer Cooperative (IFFCO) Ltd., IFFCO Sadan, New Dehli	02.09.2021	A Contract Research Project on "Evaluation of Seaweed Based Dietary Formulation on Growth Performance in *Labeo rohita*"

Public outreach

- Six lakh catla and 10,000 magur spawn were produced through breeding at Kumirmari Island. Spawns were kept in big hapa in absence of proper nursery ponds and distributed among 50 scheduled caste women of 5 self help groups. Farmers were given hands on training in breeding.

Hatching activities of magur at Kumirmari

50 SC women of 5 SHGs of Kumirmari

- Aquaculture inputs such as lime, fertilizer (organic and inorganic), fish feed and seed (IMC and GI scampi) were distributed to the selected farmers of West Bengal and demonstration was done for MLT of scampi. A sampling was done in the four ponds where demonstration was conducted to assess the growth of GI scampi and IMC in the carp scampi polyculture system.

- 500 nos of pabda, *Ompok bimaculatus* fry were stocked in the rearing pond of Rahara Fish farm for maintaining its stock.

Distinguished Visitors

- Dr J. K. Jena, DDG (FS), ICAR, New Delhi had visited the Institute during 6-8 September 2021 and interacted with Scientists, Technical Officer and Administrative Staff.

- Demonstration & input distribution to tribal farmers of Nabarangpur, Odisha and field survey in Kalahandi district, Odisha was done during 26-30 July, 2021.
- Inputs were distributed to 5 SHG members in the presence of District Collector and DM, Kalahandi on 27th July, 2021.
- An Awarenes cum exposure visit of WSHG on "Development of oranmental fish cluster" was organized on 28th July 2021 in the presence of District Collector, Sub-Collecctor, Chief Agriculture Development Officer and District Fisheries Officer at Nabarangpur. Around 100 participants attended the programme. Also, the cemented hatchery developed under S&T intervention project of ICAR-CIFA was inaugurated by Director, ICAR-CIFA in presence of a team of Scientists, DFO and AFO, Nabarangpur.
- A three-day training programme on 'Ornamental Fish Breeding & Culture' was conduced at the Institute during 10-12 August, 2021 for the farmers of Nabarangpur. The total participants were 31.
- A three-day training programme on 'Carp Hatchery Management and Seed Production' was organized at the Institute during 16-18 August 2021 under STC Program and S&T Intervention Project for the farmers of Koraput district. The total participants were 25.
- A three-day training programme on "Carp Breeding and Seed Production for Farmers of Kalahandi" was organized during 16-18 August 2021. In this programme, the farmers from Junagarh, Golamunda, Madanpur Rampur and Koksara blocks were participated. A total of 23 farmers were present during the programme. Shri. Dibya Shankar Mishra, Hon'ble Minister of State for Home, Energy, Industry and MSME, Odisha as the Chief-Guest on the inaugural function. Dr S.K. Swain, Director and team of Scientists ICAR-CIFA were present on the occasion.
- Training and demonstration on carp breeding and culture was organized during 27-31 August 2021 at Koraput. Farmers were given hand-holding on induced breeding. 40 farmers from Kotpad, Boriguma and Koraput blocks were participated in the programme
- Organized a three days training-cum-demonstration programme on "Carp Breeding and Culture" in collaboration with PRAGATI, Koraput during 28-30 August, 2021 at Dayanaddiguda, Koraput, Odisha under TSP programme. 34 tribal farmers' alongwith the staff of NGO named PRAGATI participated the training programme.

Training at Dayanadiguda, Koraput

Demonstration on brooder identification and hormone injection

Workshop cum training on "BMPs for Quality Fish Seed Production" was organized on 13th August 2021 through virtual mode for Tribal Fish Farmers of Koraput district, Odisha, under TSP programme to sensitize the tribal fish farmers on better management practises for quality fish seed production to enhance the farmers' income. The workshop involved shairing of knowledge and skill on different aspects of aquaculture such as pond preparation, soil and water quality testing, seed stocking, post stocking management such as pond fertilization, feeding and health management in freshwater aquaculture. Twenty numbers of tribal farmers along with staff of NGO Pragati, Koraput, Odisha attended the event.

Dr. P. Routray, Dr. Subhas Sarkar, Dr. K. D. Mahapatra, Dr. Debabrata Panda and Mr. Avinash Rasal were the resource persons in the workshop. During farmer-scientist interaction Dr. Luna Panda, Executive Directior, Pragati Koraput interacted with the farmers.

Resourse persons and Participants of Online workshop cum training

NEH Activities

Input supply for the paddy-cum-fish cultivation in Ziro valley, Arunachal Pradesh

Paddy-cum-fish cultivation is being carried by the Apatani tribe in Ziro valley at an altitude of 1500 meters above mean sea level in Arunachal Pradesh and about 43.38% of land of this valley is used for this cultivation. The said tribe, came about 500 years ago, are living in seven villages and believed to practice this unique integrated farming since then. The landscape was listed under tentative list of UNESCO world heritage due to its unique settlement system and man-nature relationship. They were stocking mainly common carp in small pits in paddy fields. From mid of June when plenty of water makes the land fill up to 15 cm, the carps were moving around the whole submerged land. Due to very poor quality of common carp seed, the growth of fish was reported to be very poor. Up on the request of Mr. Tage Taki, the honourable Fishery Minister of Arunachal Pradesh, the ICAR-CIFA has provided 30,000 quality Amur carp seeds on 30th July 2021 as an input support.

ICAR-CIFA in collaboration with SEWA international conducted training programme on "Fish Culture and its Better Management Practices" for the Tribal fish farmers of Tripura

With the main objective of livelihood development through scientific fish culture, ICAR-CIFA along with Sewa International, a Non-profit Organization collaboratively launched a livelihood development programme for the fish farmers in the tribal dominated areas of Tripura to increase the income through fish based integrated farming system. The essential inputs like fish fingerlings (rohu, catla and mrigal), floating pelleted feed, lime, mustard oil cake, single super phosphate, and vegetable seeds were distributed to the beneficiaries under this livelihood programme early this year to 50 ST and SC fish farmers (30 from Kanchanpur and 20 from Teliamura). Further, to boost the knowledge on scientific fish farming among the beneficiaries, ICAR-CIFA in collaboration with Sewa International organised a training on "Fish Culture and its Better Management Practices" on 5th September at Manikbazar, Teliamura, Khowai and on 7th September, 2021 at Satnala, Kanchanpur, North Tripura in which 35 farmers took part in the programmes. During the training programmes, Mr. Jackson Debbarma and Mr. Anirban Paul, Scientists of ICAR-CIFA briefed the farmers about the scientific fish farming technique, post stocking management, better management practices, fish health management and livelihood generation through integrated fish farming. The Sewa International team spoke about sustainability and other livelihood development programmes initiated in collaboration with ICAR-CIFA. Medical kits were also distributed to the beneficiaries during these programs. Visit was made to 12 farms and fishes were sampled to observe the growth and health status.

- RRC of ICAR-CIFA, Rahara and SSKVK, Sonarpur provided aquaculture input support (fountain aerators) to 15 Farmers of the villages Saheberabad 1 & 2 and Baburabad. The installation and demonstration of fountain aerators were completed on 5th July 2021 in the presence of Dr. S. Adhikari and Dr. B.N. Paul, Principal Scientists of ICAR-CIFA and Dr. N.C. Sahu and Dr. S. Ghosh of SSKVK.
- The inputs (fish seed and feed) were supplied to 74 beneficiaries in Krishna and Guntur districts of Andhra Pradesh. Fish seed (spawn @ 30 million) and feed (Rice bran and GNOC @ 1.5 tonnes) were distributed to 40 beneficiaries in Kuchipudi village, Guntur and the advanced fingerlings of rohu and catla (4500 nos.) and feed (Rice bran and GNOC @ 1.7 tonnes) was supplied to the 34 beneficiaries in Venkatapuram village, Krishna District of Andhra Pradesh during 20-21 July 2021. Dr. P.V. Rangacharyulu and team from RRC, ICAR-CIFA, Vijayawada and State department officials were presented during the inputs distribution programme.

- Beneficiaries details of around 200 SC Farmers of Panchuakhali village of Kultali block of South 24 Parganas, WB were collected on 4th August 2021. During the meet, around 10 farmers were present following covid 19 protocol.
- Dr. B.N. Paul, Nodal Officer of SCSP Scheme of West Bengal visited different villages viz., Beri, Subidpur, Tentulberia, Purandarpur, Garjala and Sashadanga and collected detail information of 100 beneficiaries on 17th August 2021. It was noted that some ponds are inundated with water so they covered with net, bamboo and plastic sheet. They do fish culture within the covered area till the water recedes. During the visit he met about 30 farmers at different locations. The farmers will be provided aquaculture input support during 2021-2022 under SCSP Scheme.
- The ICAR-CIFA in association with District Fishery Officer, Kendrapara organized a one-day Orientation programme on 'Promotion of Ornamental Fish Farming among Women Self-Help Groups' on 17th August 2021 at KVK Kendrapara. District Collector Shri Amrut Ruturaj, IAS and Director, ICAR-CIFA handed over FRP tanks to the beneficiaries. The meeting was attended by 40 farmers and farm women.

- Shri Pratap Chandra Sarangi, Hon'ble Member of Parliament (Lok Sabha) launched the SCSP activities of ICAR-CIFA in Balasore district of Odisha on 21st August 2021. Dr. Saroj Kumar Swain, Director, ICAR-CIFA appraised about the SCSP activities presently being carried out in different districts of Odisha including the Balasore district. Shri Sarangi distributed the genetically improved carp fingerlings and floating fish feed developed by ICAR-CIFA to 34 beneficiaries of Nilagiri and Balasore blocks. A farmers-scientists interaction meet was also organized as a part of this programme. The programme was attended by Dr. M. K. Sinha, Senior Executive, NFDB; Shri Santosh Kumar Dalai, Deputy Director Fisheries, Govt of Odisha; Dr. H.K. De, Pr. Scientist and Chairman SCSP, and team of scientists and technical officers, ICAR-CIFA. The meeting was attended by 80 farmers and farm women.
- ICAR-CIFA organized a two-days training programme on "Ornamental Fish Breeding and Culture" for capacity building of 25 schedule caste women belonging to Jaya Durga SHG, Derabish and Om Sai Ram SHG, Kendrapara during 2-3 September 2021 at ICAR-CIFA Headquarters. Inaugurating the training programme, the Former Director, College of Fisheries, Rangeilunda and ICAR-Emiretus Scientist, Dr. Kasturi Samantray appreciated ICAR-CIFA's initiatives in promotion of ornamental fish culture through SCSP programme. She also urged the trainees to learn the basics of ornamental breeding and culture which has got tremendous potential in improving their socio-economic condition. The participants were exposed to basics of ornamental fish breeding for both egg layers and live bearers. Various aspects of culture, water quality aspects, feeding, and health management were also dealt with. The women took active interest about ornamental fish rearing as a source of supplementary income for the household.

- ICAR-CIFA launches Ornamental Aquaculture Field School at Kochila Nuagaon, Dasa Sahi, Cuttack, Odisha on 4th September 2021 under SCSP scheme. This is the first Ornamental AFS in Odisha. The meeting was attended by 30 farmers and farm women.
- Fingerlings and floating fish feed were distributed among 37 beneficiaries of SCSP scheme in Kasafala and Nilgiri block of Balasore district on 14th September 2021.
- An "Interactive Workshop and Awareness programme on Scientific Fish Farming for Generation of Livelihood and Income" was organised at Mantripalem village, Krishna District, Andhra Pradesh under SCSP scheme on 15th September 2021. Fifty-two fish farmers attended the programme. A technical booklet on 'Composite Fish Farming in Freshwater Aquaculture" released on this occasion and distributed to the beneficiaries.

- Interaction with SCSP beneficiaries of Khordha district and imparting training on pre-stocking management measures were organised in Balipatna block on 20th September 2021. The 32 beneficiaries participated and interacted with the scientists of ICAR-CIFA, Bhubaneswar.

- RRC of ICAR-CIFA, Bathinda, Punjab in collaboration with KVK, Bikaner 2 (Lunkaransar) and DoF, Rajasthan organised two days "Training-cum-input Assistance Programme for Stunted Carp Fingerling Production in Farm Ponds" during 28-29 September 2021 at Poogal, Bikaner, Rajasthan. A team of Scientists (Dr. Khuntia Murmu, Dr. Mukesh Kumar Bairwa and Mr. Anirban Paul) explained the farmers regarding stunted fingerling concept, nursery and disease management in fish farming. The inputs for stunted fingerling production were distributed to 35 farmers from three villages (2DO, Deli Talai and Ramda) of poogal Panchyat, Bikaner Rajasthan. Individual farmer was assisted with fish seed (30,000 number rohu fry), mustard cake (100 kg) and plastic tub (70 litres). Along with the above inputs, 3 number fry collection nets were also given to group leaders of each village. During the programme, Dr. H K Narula, Head, Arid Regional Complex, CISWR, Bikaner was the Chief guest, and he appreciated efforts of ICAR-CIFA for livelihood development of farmers in Bikaner, Rajasthan through fisheries activity. On this occasion one publication (Talab Prabhandhan Diary- Pond management Diary in Hindi-English) was released and distributed to the participants. Mohd Irshad Khan, Fisheries Development Officer, Suratgarh was also present in the occasion.

Inauguration of Aquaculture Farmer Field School (AFFS) at Goranbose, WB

- ICAR-CIFA in collaboration with Sasya Shyamala Krishi Vigyan Kendra, Sonarpur has inaugurated Aquaculture Farmer Field School (AFFS) at Goranbose, Basanti Block, South 24 Parganas district, West Bengal on 29th September 2021. Over 2000 farmers of 10 nearby villages will be benefitted through AFAS. The AFFS was virtually inaugurated by Dr. S.K. Swain, Director, ICAR-CIFA and urged the farmers for cooperation and to get connected with CIFA and SSKVK for the fish farming activities. The field school will contribute greatly for extension and advisory services delivery. Dr. Adhikari, SIC, RRC, Rahara highlighted the role of CIFA in developing livelihood of SC farmers of West Bengal. The programme was coordinated by Dr.B.N. Paul and Dr.H.K. De, Pr. Scientist and Chairman, SCSP Committee of ICAR-CIFA. In addition to opening of AFFS, one day training programme was also organised by RRC, Rahara of ICAR-CIFA on 'Freshwater Aquaculture' at Goranbose. A Farmer-Scientists interface meeting was also organised to gauge the interest and the visibility of the institute in bringing farmers, stake holders, state Government and KVK in one platform. Around 75 farmers including farm women attended the programme. Prior to this installation and demonstration of 15 fountain aerators were made in 15 private fish farms. Further, 150 pond soil samples were also analysed for different chemical parameters.


PROMOTION

- Dr Bibhudatta Mishra, T-6 promoted to T-7-8 w.e.f. 4th January, 2019.
- Sri Sukanta Sarkar, UDC promoted to Assistant w.e.f. 30th July, 2021.
- Miss Singa Soren, Personal Assistant promoted to Private Secretary w.e.f. 30th July, 2021.
- Sri Tapas Kumar Mishra, Assistant promoted to Assistant Administrative Officer w.e.f. 30th July, 2021.
- Sri Dusmanta Sahoo, SSS promoted to LDC w.e.f. 23rd August, 2021.
- Sri Bikram Kishore Kahali, SSS promoted to LDC w.e.f. 23rd August, 2021.
- Sri Bhikari Charan Bhoi, SSS promoted to LDC w.e.f. 23rd August, 2021.
- Sri Simachal Behera, SSS promoted to LDC w.e.f. 23rd August, 2021.
- Sri Ajaya Kumar Dash, ACTO promoted to CTO w.e.f. 30th August, 2021.
- Sri Surendra Singh, ACTO promoted to CTO w.e.f. 30th August, 2021.

OBITUARY

The ICAR-CIFA family deeply mourns the demise of Sri Maheswar Bhoi, SSS on 26th August, 2021.

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