

## NEW TECHNOLOGY DEMONSTRATIONS AT FARMERS FIELDS

### 1. Sugarcane bagasse as bioremediation in brackishwater aquaculture ponds (2 demonstrations)

In two demonstration sites, the treatment pond recorded an increase in the survival rate by 47.0 and 16.7 % and the total yield by 23.5 and 30.8 % over the control pond respectively. Apart from this, an average body weight at harvest in treatment pond was 15.3 % more than the control pond. The Feed Conversion Ratio (FCR) was better in case of treatment pond than control. The improvement in shrimp production and higher survival rate in treatment pond is substantiated due to lower concentrations of  $\text{NH}_4$  and  $\text{NO}_2\text{-N}$  values in treatment pond as compared to control pond. Also, the periphyton growth on bagasse serves as a feeding material to the growing shrimp which contributes to the higher production level in treatment pond.

#### Sugarcane bagasse as bioremediation



### 2. Immunostimulant (CIBASTIM) at farmers' fields (15 demonstrations)

To evaluate the effect of *Vibrio* bacterial product 'CIBASTIM' an immunostimulant, on production of *P.monodon* culture. So far, fifteen commercial shrimp farmer's ponds in Navsari district of Gujarat during the year 2010-11. A significant improvement in the average body weight (10.13 %), average daily gain (10.56 %), survival rate (16.86 %), FCR (-8.42 %) and the production per ha (25.93 %) was recorded over the control ponds of the same farm. The product is available on sale to the farmers @ Rs.800/litre.



CIBASTIM product



Good Quality and fully active shrimps in CIBASTIM fed farmers pond

### 3. First successful culture demonstration of diversified shrimp species-Banana shrimp at farmer's field

The successful culture of banana shrimp during the monsoon crop during the year 2010-2011 and its tolerance towards high salinity and low temperature at Danti farm, NAU, Navsari, have paved the way for farming of this species in this region. With respect to this, trial demonstration of banana shrimp culture at farmer's pond at Danti village of Umbharat, Navsari was carried out.

A brief summary on the culture progress of banana shrimp at farmer's pond is presented here.

Package of practices for banana shrimp has been developed by NAU-CIBA scientists which includes pond preparation, stocking of seeds, feed management, soil and water quality management.

Farmer Name: Mr. Vinodbhai D. Patel

Location: Danti, Dist. Navsari

Stocking date: 17/12/2011



#### Production details

Sr.No.	Particulars	
1	WSA (ha)	0.6
2	Culture Period(days)	113
3	Stocking Density(Pcs/m <sup>2</sup> )	17.5
4	ABW (g)	9.90
6	Biomass(Harvested)	725
7	Survival Rate (%)	70
8	FCR	1.28
9	Production(kg)/ha	1208.3

## Cage culture demonstrations at farmers' field

During the year 2012-13, small scale cage farming, was initiated in five villages for ST farmers of the region. The farmers were trained for cage making and cage culture. The culture is in progress in Pathri, Kabilpore, Dharagiri, Mahuvas and Kurshad villages.



Cage culture demonstration trials in village ponds

### 1. Brackishwater aquaculture survey

With an objective to assess the shrimp culture practices and the constraints faced by the farmers in the four districts of South Gujarat viz. Navsari, Surat, Bharuch and Valsad a survey was conducted in November 2009 jointly with CIBA, Chennai. Based on the survey, certain issues have been identified which are to be addressed for developing sustainable aquaculture farming.



Scientist interacting shrimp farmers during Survey in Danti, Dist. Navsari



Scientist interacting shrimp farmers during Survey in Diu (U.T)

### Salient features of the survey

1. All farmers raise one crop per year (closed season is winter).

2. Almost all farmers' culture tiger shrimp @ 5 to 12 pcs/m<sup>2</sup> and the soil type was found to be clayey loam.
3. The farms are situated very close to the creek with few farmers possessing bird fencing and no effluent treatment plants.
4. Farmers have reported a production of 1.5 to 3.0 t/ha, average count of 27 with a FCR of 1.3 to 1.7 and cost of production varied from Rs. 120 to 140/kg.
5. The major technical problems identified by farmers were: lack of technical guidance, non-availability of quality seed, incidences of diseases such as *Zoothamnium* infestation, loose shell, lack of adequate analytical laboratories, high salinity during summer (beyond 50 ppt)
6. The major social problems faced by the farmers were non-availability of required labour,
7. The institutional problems faced were high unit cost of three phase electricity connection, absence of cold storage facility to store emergency harvest, lengthy procedure in land allotment, very slow pace of registration for Aquaculture Authority of India certification.

## **2. Farmers' Day celebration**

A farmers' day was celebrated during the harvest of tiger shrimp on 3rd October 2009 to disseminate the technologies to the farmers of Navsari and Surat districts. Hon'ble Vice Chancellor, NAU- Dr. H. C. Pathak, Hon'ble MLA -Shri R. C. Patel, Director, CIBA Dr. A. G. Panniah, Principal Scientist, CIBA Dr. S. M. Pillai, Dean, faculty of Veterinary, Dr. N. H. Kelawala, Dean, faculty of Horticulture Dr. N. L. Patel, Dean, faculty of Agriculture Dr. C. L. Patel, along with other NAU faculty members (18) and farmers(25) participated the celebration.





Hon. Vice Chancellor, NAU Dr. A. R. Pathak addressing farmers during Farmer;s day celebration at Danti farm on 8<sup>th</sup> April 2011



Hon. DDG (fisheries),ICAR, Dr. B.Meenakumari addressing farmers during Farmer;s day celebration at Danti farm on 8<sup>th</sup> April 2011

### 3. Extension material preparation

To address the needs of farmers in Gujarat 11 posters and new technology folders in vernacular languages have been brought out for permanent display at the University and also for display in extension meetings such farmers' meet and exhibitions.

### 4. Awareness training on Brackishwater aquaculture for the ST farmers

A two day awareness training programme for the ST farmers (63 participants) was organized at KVK, Navsari in collaboration with Central Institute of Brackishwater Aquaculture, Chennai.



2 day awareness training on "Brackishwater aquaculture" for the ST farmers of Gujarat



Field day visit of the ST farmers at Danti-Umbharat, ARS, NAU

## 5. Awareness and Demonstration Programme for Tribal Farmers on Cage Farming of Finfishes.

A collaborative awareness programme on cage farming of finfishes was organized for tribal farmers of Gujarat on 20<sup>th</sup> May 2012. The programme was organized at Pathri village, Ta. Gandevi, Dist. Navsari. 66 farmers from three villages took part in the programme where they were taught recent cage farming techniques for culture of finfishes. A practical on cage fabrication was carried out during the programme where the farmers learnt the cage making process and the technique.



ST farmers learning practical cage fabrication techniques at Pathri village



Dr.S.M. Pillai, Principal Scientist, CIBA, Chennai addressing ST farmers of Gujarat at Pathri village

## 6. Farmers-Scientist Interaction Meet on Management of Shrimp Health and Pond Environment.

A farmers-scientist interaction meet on management of shrimp and pond environment was jointly organized by CIBA, Chennai and NAU, Navsari on 21<sup>st</sup> may 2012. 35 progressive shrimp farmers and technicians participated the meet. During the occasion, six leaflets of new technology were released for the farmers. CIBA and NAU scientists delivered talks on shrimp diseases and pond managements technologies.



### **7. Scientists – Farmers Interface Meet on Importance of CIBASTIM in Shrimp Culture**

Under NFDB project, Scientists – Farmers Interface meet on Importance of CIBASTIM in Shrimp Culture was jointly organized by CIBA and NAU at Navsari Agricultural University, Navsari on 29<sup>th</sup> June 2012. The chief guest of the function, Dr. Vasudevappa, CEO, NFDB, Hyderabad and Dr. Paul Pandian, Executive Director, NFDB, Hyderabad along with MPEDA, CIBA and NAU Scientists were present at the meet and 88 farmers participated the program. CIBASTIM –an immunostimulant was distributed to progressive farmers during the meet.



Dr. Vasudevappa, CEO, NFDB addressing progressive shrimp farmers on occasion of interaction meet



Active participation of progressive shrimp farmers during the interaction meet