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Hyderabad

November 2018

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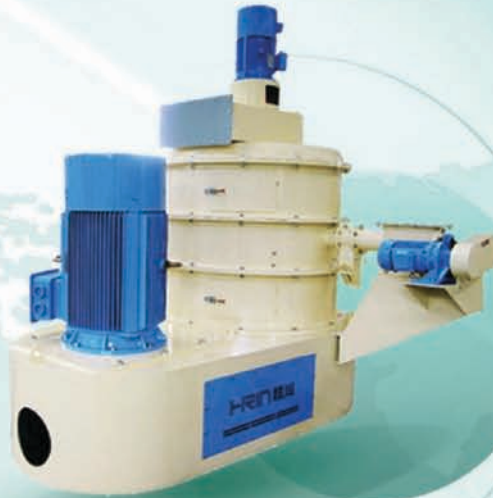
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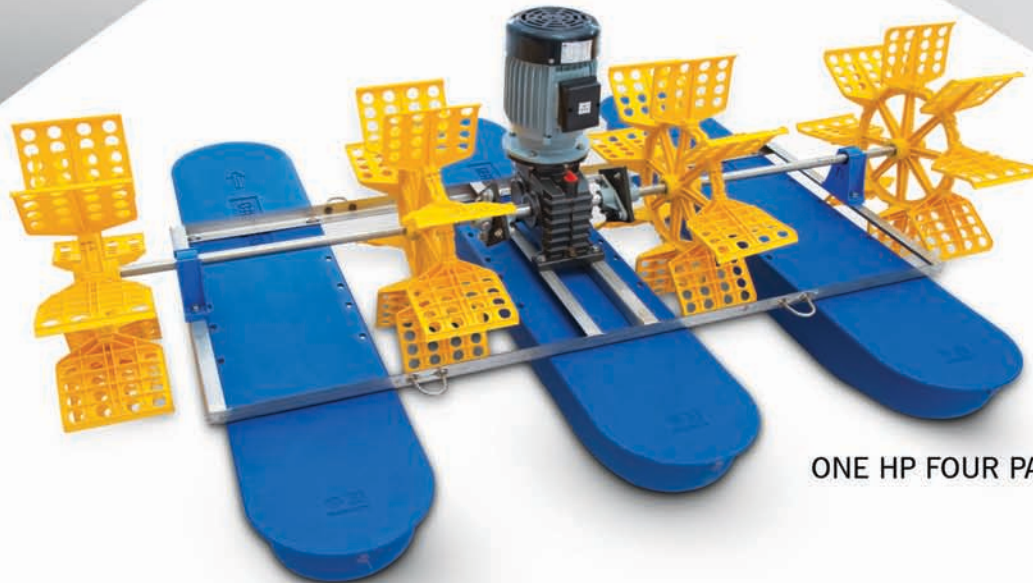
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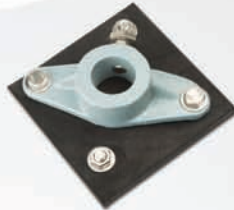
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- Editor



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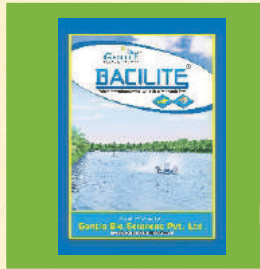
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Indian Farmed Shrimp Production may be Down by 20% this year



Dear Readers,

The November 2018 issue of *Aqua International* is in your hands.

Special Feature: Aqua International organised its prestigious annual event **Aquaculture CEOs Forum India &**

AI Awards 2018, the national forum to bring the stakeholders of Aquaculture industry on to a common platform to discuss the issues and come out of solutions on October 9, 2018 at Hyderabad. The 5th edition of Aqua International Awards 2018, national awards to recognize and appreciate the individuals and organizations for their outstanding performance, excellence and contribution to the profession and to the development of Indian Aquaculture industry were presented to the winners. Aqua International presented awards for different categories of Aquaculture industry. A cake cutting ceremony was also held to mark the Silver Jubilee celebration of Aqua International magazine. Details may be seen inside pages.

In the News section, you may find news about marine products export from India is likely to be flat this year as production woes continue to plague the seafood sector with a supply crunch of farmed shrimp, which accounted for nearly 70 % of Rs 45,000 crore seafood exports last year. The shrimp production seems to be down due to late stocking and diseases in the eastern coast. The harvest in the west coast has also been no better.

ICAR-CIFT, Cochin, the Central Institute mandated for research and development in harvest and post harvest technologies of fisheries, organized three-day Skill Development Programme on "Microbiological Examination of Fish and Fishery Products" The training programme was sponsored by National Fisheries Development Board (NFDB), Hyderabad. 25 seafood technologists from different seafood processing plants from different parts of the country participated in the programme. The programme focused on

improving the skill of seafood technologists and post graduates for testing the fish and fishery products on microbial parameters to meet the food safety standard.

State-run Central Marine Fisheries Research Institute (CMFRI) has said that draft national policy on mariculture has mooted mariculture zones by demarcating special areas in the sea for different mariculture activities such as cage farming, bivalve farming, pen culture, seaweed culture, hatcheries and nurseries based on scientific criteria. The draft policy was formulated by an expert committee formed by the National Fisheries Development Board (NFDB) with CMFRI Director A. Gopalakrishnan as its Chairman.

Veraval is a coastal town in Gir Somnath district in the state of Gujarat. 'Kharwa', the fishermen community, form a sizable part of the local population in the coastal regions of Gujarat like Veraval. Fisheries have always been the main industry in Veraval and are dominated by the Kharwas. The Kharwa fisherwomen belonging to one of the backward classes in Gujarat are already involved in fresh fish selling in the local markets, peeling of shrimps, fish drying and pre-processing and processing activities in seafood export units as workers. In Veraval, fish is sold either in fresh or dried form in the domestic market by these women. There are other fish related micro enterprises such as preparation of value added products like fish pickle, fish ball, fish cutlet, fish samosa etc., which has not been explored.

Readers are invited to send their views and comments on the News, Special feature and Articles published in the magazine which would be published under "Readers Column". Time to time, we shall try to update you on various aspects of Aquaculture industry. Keep reading the magazine regularly and update yourself. Wish you all fruitful results in your efforts.

M.A.Nazeer
Editor & Publisher
Aqua International



Aqua International

Our Mission

Aqua International will strive to be the reliable source of information to aquaculture industry in India.

AI will give its opinion and suggest the industry what is needed in the interest of the stakeholders of the industry.

AI will strive to be The Forum to the Stakeholders of the industry for development and self-regulation.

AI will recognize the efforts and contribution of individuals, institutions and organizations for the development of aquaculture industry in the country through annual Awards presentation.

AI will strive to maintain quality and standards at all times.

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Training on Skill Development



Dr C.N. Ravishankar delivering the inaugural address (Also seen: Dr V. Murugadas, Dr M.M. Prasad and Dr S. Visnuvinayagam)

ICAR-CIFT, Cochin, the Central Institute mandated for research and development in harvest and post harvest technologies of fisheries, organized three-day Skill Development Programme on “Microbiological Examination of Fish and Fishery Products” during 25-27 September, 2018.



Participant giving feedback

The training programme was sponsored by National Fisheries Development Board (NFDB), Hyderabad. Twenty Five seafood technologists from different seafood processing plants from different parts of the country have participated in this programme. The programme focused on improving the skill of seafood technologists and post graduates for testing the fish and fishery products on microbial parameters to meet the food safety standard.

The programme was

inaugurated by Dr C.N. Ravishankar, Director, ICAR- CIFT. At the outset, Dr Ravishankar welcomed the participants of the training programme and expressed gratitude for the overwhelming response for the programme from the fishing industry. He stressed on the need of assessing and monitoring the microbiological parameters of seafood in perspective of the present food safety regime. He also stressed the need for the participants to make use of all the laboratory and library facilities available at ICAR-CIFT for improving the food safety standards of the highly sensitive seafood industry. He also thanked NFDB for having

sponsored the programme. Dr M.M. Prasad, Head, MFB Division and Course Director gave the details of the programme schedule and briefed how it is beneficial to the participants. Earlier, Dr V. Murugadas, Scientist welcomed the gathering and Dr S. Visnuvinayagam, Scientist proposed the vote of thanks.

There were theoretical and practical sessions on different topics in Microbiology. The topics covered in the training included: Human health bacteria associated with fish and fishery products, Importance of sampling techniques in seafood industries, Interpretation of microbiological data in seafood, Enumeration of aerobic plate count of different pathogenic organisms, Isolation and identification of different microorganisms, Biochemical and serological tests based for different microorganisms, Identification of organisms by using PCR methods and Gel electrophoresis and visualization of amplicon by Gel documentation.

The valedictory function was held on 27 September, 2018 which was presided over by Dr Ravishankar. Dr N. Bhaskar, Advisor (Quality Assurance), FSSAI, New Delhi was the Chief



Participant receiving certificate

Guest of the function. While addressing the participants the Chief Guest congratulated ICAR-CIFT for conducting the ‘need of the hour’ programme, wherein microbial quality of fish and fishery products is of utmost importance. The programme was highly appreciated by the participants as they could learn many microbiological tests to enumerate and identify microorganisms that are present in different fish and fishery products. After the feedback, certificates were distributed by the Chief Guest to the participants. The programme came to an end with vote of thanks by Dr M.M. Prasad.




Participants of the programme with resource persons and Director

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Indian farmed shrimp production may be down by 20% this year

The US, the top buyer of Indian shrimp with 33% share of exports, was buying less in the first few months as it had excess stock.

KOCHI: Marine products export from India is likely to be flat this year as production woes continue to plague the seafood sector with a supply crunch of farmed shrimp, which accounted for nearly 70% of Rs 45,000 crore seafood exports last year.

“The shrimp production was down due to late stocking and diseases in the eastern coast. The harvest in the west coast has also been no better,” said Rahul Kulkarni, Director of WestCoast Fine Foods Pvt. Ltd, a major exporter .

Andhra Pradesh, the leading producer of farmed shrimp in the country, accounts for 60% of the national production. Lower prices for shrimps early this year impacted the stocking density in the farms, which along with occurrences of white spot diseases, resulted in poor harvest in the state.

Shrimp production in India touched 6 lakh tonnes last year but is expected to slow down in 2018-19. “We expect 15 to 20% drop in output. If prices had been good in June and July, the production would have gone up. Now they have started stocking more,” said S Muthukaruppan, past president of Society of Aquaculture Professionals. Shrimp prices have rallied and are on par with that in last year. The steep depreciation of rupee against dollar is expected to bring more revenue to



the exporters as well as the farmers. “The rupee has fallen from 65 to nearly 73 against dollar from last year, which is a significant drop,” Muthukaruppan said.

The US, the top buyer of Indian shrimp with 33% share of exports, was buying less in the first few months as it had excess stock. “The US has started buying aggressively now and the shipments for Christmas season started last month,” Kulkarni said. South East Asia is the next largest buyer of seafood from India.

Detection of shrimp haemocyte iridescent virus (SHIV) in the farms of China and Thailand, a new kind of virus, is feared to push global shortage of shrimps, though at present it has low prevalence. Both these countries have just recovered from the disease early mortality syndrome that devastated farms a few years ago.

Shrimp supply from India, Ecuador and Indonesia increased after the shipments from China and Thailand fell. “The second crop from the farms in Andhra Pradesh will dictate the course of seafood export in the next few months, Kulkarni pointed out.

EU ambassador rules out possibility of a ban on Indian shrimp imports



There was growing concern that the EU was seriously worried over the use

of antibiotics in Indian shrimps- a fact that surfaced continuously in its findings

The European Union (EU) has ruled out the possibility of a ban on imports of Indian shrimps.

Clearing the air, Tomasz Kozlowski, Ambassador of the European Union (EU) to India, recently said, “We are not going to put any ban on Indian shrimps. Only one thing is that we have some health regulations in Europe and all imports from abroad should meet our requirement.”

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CIFT intervention in women entrepreneurship development:

A success story from Kharwa fishing community in Veraval.



The stall set up by fisherwomen in the Chorwad Fair Mr Velji Bhai Masani, Chairman, GFCCA with the fisherwomen in the stall

Background Veraval is a coastal town in Gir Somnath district in the Indian state of Gujarat. 'Kharwa', the fishermen community, form a sizable part of the local population in the coastal regions of Gujarat like Veraval. Fisheries have always been the main industry in Veraval and are dominated by the Kharwas. The Kharwa fisherwomen belonging to one of the backward classes in Gujarat are already involved in fresh fish selling in the local markets, peeling of shrimps, fish drying and pre-processing and processing activities in seafood export units as workers. In Veraval, fish is sold either in fresh or dried form in the domestic market by these women. There are other fish related micro enterprises such as preparation of value added products like fish pickle, fish ball, fish cutlet, fish samosa etc., which has not been explored.

Intervention by ICAR-CIFT through skill development programmes

Fish is a highly perishable commodity, which requires proper handling,

processing and distribution if it is to be utilized in a cost effective and efficient way. Technological interventions are essential for better utilization of fishery resources for better profitability. Product diversification can be an option to expand the marketing of fishery products. Various value added products can be prepared out of fish without much investment. Although the demand for such kind of products is huge, fisherwomen don't venture much into entrepreneurship of value added fishery products, due to lack of skills and marketing opportunities.

Veraval Research Centre of Central Institute of Fisheries Technology (CIFT) extended technical knowhow to Kharwa fisherwomen through a series of NFDB (National Fisheries Development Board, Hyderabad) funded skill development programmes aiming at livelihood enhancement of fisher folk. The first in the sequence of year long training programmes started on

24th July, 2018 on value addition of fish and fishery products and each time, as many as 25 participants including fishermen/ fisherwomen and small scale entrepreneurs from Gujarat participated in the hands-on training programmes. The fisherwomen were trained on different value added products from fish namely burger, samosa, cutlets, pickle, balls, fingers etc. The three day programme was designed for improving the skill of women for preparing variety of fish products to increase consumer appeal and to empower the budding women entrepreneurs of fishermen community to enhance their income and improve their livelihood.

Impact of the intervention programmes by CIFT

The intervention programmes by CIFT facilitated women from a disadvantaged community to organise into groups to empower themselves as

businesswomen taking their families and community forward in the process. The regular training programmes organized by CIFT resulted in the women being able to produce low cost higher value fish products that will generate increased income. them, 25 women from a group named 'Sagar Manthan Machhimar Utthan Mandal' trained at CIFT participated in the recently held Chorwad Fair in Gujarat and could earn handsome amount as profit by selling the seafood delicacies in the three day Fair during 8-10 September, 2018. The profit earned in the fair was distributed to the members by Collector of Gir-Somnath District, Mr Ajay Prakash, IAS in a programme organized at Veraval Research Centre of CIFT to congratulate the women entrepreneurs on 19 September, 2018. Taking a cue from the success at the Chorwad Fair, the group is planning to attend similar fairs and festivals in and around Gir-Somnath District. They will be soon opening a stall in Veraval for selling fish-based value added products in addition to home delivery of seafood snacks.



Preparation of value added fishery products in the stall under the guidance of scientists from ICAR-CIFT

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Draft policy moots mariculture zones

The draft policy was formulated by an expert committee formed by the National Fisheries Development Board (NFDB) with CMFRI director A Gopalakrishnan as its chairman.

State-run Central Marine Fisheries Research Institute (CMFRI) has said that draft national policy on mariculture has mooted mariculture zones by demarcating special areas in the sea for different mariculture activities such as cage farming, bivalve farming, pen culture, seaweed culture, hatcheries and nurseries based on scientific criteria. The draft policy was formulated by an expert committee formed by the National Fisheries Development Board (NFDB) with CMFRI director A Gopalakrishnan as its chairman.

The policy aims to enhance mariculture production in the country and increase income and employment opportunities in a sustainable way, in addition to promoting entrepreneurship in mariculture by facilitating technical and financial inputs. The national policy on mariculture also touches upon scores of areas such as market support, food safety and health management, ecolabelling and certification, capacity building, legal frame work etc.

According to the policy, satellite remote sensing data and GIS will be used to identify potential zones for mariculture on the basis

of scientific evaluation of environmental parameters suitable for various types of farming avoiding conflict other users and protecting livelihoods of local fishing communities. Sea areas identified in this manner will be designated as mariculture technology parks by the respective states. CMFRI sources said that ecologically sensitive areas like coral reefs, mangroves, seagrass beds, and other coastal areas with strategic interest would not be considered for mariculture zones.

In a bid to support fish breeding, culture, packaging and trade, the policy proposes encouragement to set up off-shore technology parks and coastal embankment systems. Referring to the security of the mariculture enterprises in the open sea waters, the policy has made provisions for leasing the water bodies and regulating the activities through changes in the law. All mariculture farms in the sea would operate only in an area leased out for the purpose by the respective maritime states.

In addition, the state would register and license all farms for a specific period ensuring all protection to the farm assets. Touching upon the selection of the species for the farming, exotic and genetically modified (GM) species will not be permitted for open sea culture even though the policy allows to farm these species in closed mariculture systems after stringent risk assessment and monitoring.

US demand revival brings new hope to Indian aquaculture firms



With the US raising the duty on shrimp and other aquaculture products from China to 25% in the latest round of tariff levies, experts believe US orders would now shift to India. After slowing down for a while, Indian aquaculture companies are stepping ahead for a turnaround due to a revival in demand from America, the world's largest consumer.

Most companies saw a

sharp decline in revenue and profit till the December 2017 quarter, spilling over in some cases to the March 2018 one, too. However, leading companies in the segment posted an increase in sales and profit during the June 2018 quarter.

This was thanks to a high import duty levied by the US government on its largest supplier, China, in an ongoing trade war.

Starting with 15 per cent early this year, the US administration raised the duty on shrimp and other aquaculture products from China to 25 per cent in the latest round of tariff levies, totalling \$200 billion. Experts believe US orders would now shift to India.

Correction:

In the article entitled 'Pond rearing of *Hilsa ilisha* at Chatterjee Brothers Fish Farm, WB' published in August 2018 issue of Aqua International magazine in Page 54, 2nd column, last paragraph, it has been erroneously mentioned by author Subrato Ghosh that: 'Mr S. C. Chatterjee conducted breeding experiments in this farm. Brooders were collected from river Hooghly and carefully brought to the farm with special arrangement. Males and females were stripped for milt and ova respectively'.

The fact is that breeding experiment of *T. ilisha* was done by scientists of ICAR-CIFA Kalyani RC on-board and fertilized eggs were maintained in this farm/hatchery after being supplied. In Page 56, 1st column, it is erroneously mentioned that fertilized eggs of *H. ilisha* were found to hatch on 13th-14th hour, but correct information is that takes 19 to 30 hours for *H. ilisha* eggs to incubate and hatch.

Author S. Ghosh regrets for providing these incorrect information in the article unintentionally. It is mentioned that the fish will not attain maturity in confinement. Since research is in progress, it cannot be conclusively stated right now that '*T. ilisha* will not attain maturity in confinement'. Also it cannot be stated right now that '*H. ilisha* cannot be bred in freshwater'. Less than 50% of supplied advanced fry and fingerlings of *T. ilisha* survived at Chatterjee Brothers Fish Farm due to less-favourable pond water conditions.

-Editor, Aqua International.



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Dynaqua of Nutriera Group won the award of Annual Significant Aquatic Animal Health Enterprise



From left: Dynaqua Technical Manager Mr Robin Li, Technical Manager, Mr Huang Yuexiong. Technical General Manager: Dr Frank He with the ASAHE Award.

On 19th & 20th of October 2018, the second Chinese Aquatic Animal Health Summit & Animal Health Formulation Technology Forum and 2018 Chinese Aquaculture Animal Health Annual Honorable Award Ceremony which was organized by Current Fisheries and Tensfish was grandly held in Zhanjiang, China.

After the voting of

Committee Organization and the evaluation of authoritative industrial experts, Dynaqua of Guangdong Nutriera Group stood out from thousands of animal health enterprises to gain the award of the **Annual Significant Aquatic Animal Health Enterprise** based on its professional technical service and good reputation of domestic and abroad.

The forum aims to share and exchange new concepts of formulation technology, enhance the product

over 500 people from industry authoritative experts, scholars, teachers and students as well as excellent enterprise representatives to attend. The keynote presentations not only cover heat technologies on aquaculture probiotics, Chinese herbals and vaccines, but also present wonderful practical contents such as the production process of preparations and micro-spectral techniques.

As the core subsidiary of Guangdong Nutriera Group, Dynaqua has always been focusing on the R&D and marketing promotion of animal health products. With clear international marketing strategy, first-class service and strong product technology, it has achieved rapid development.

In the future, Dynaqua will keep promoting internationalization, optimizing product structures and striving to create the best service



A view of the Forum held in Zhanjiang, China on October 19 & 20



R&D and innovation for enterprises and promote the healthy development of aquatic animal health industry, which attracted

teams, so as to promote the sustainable healthy aquaculture and help to make --aquaculture industry more and more prosperous.

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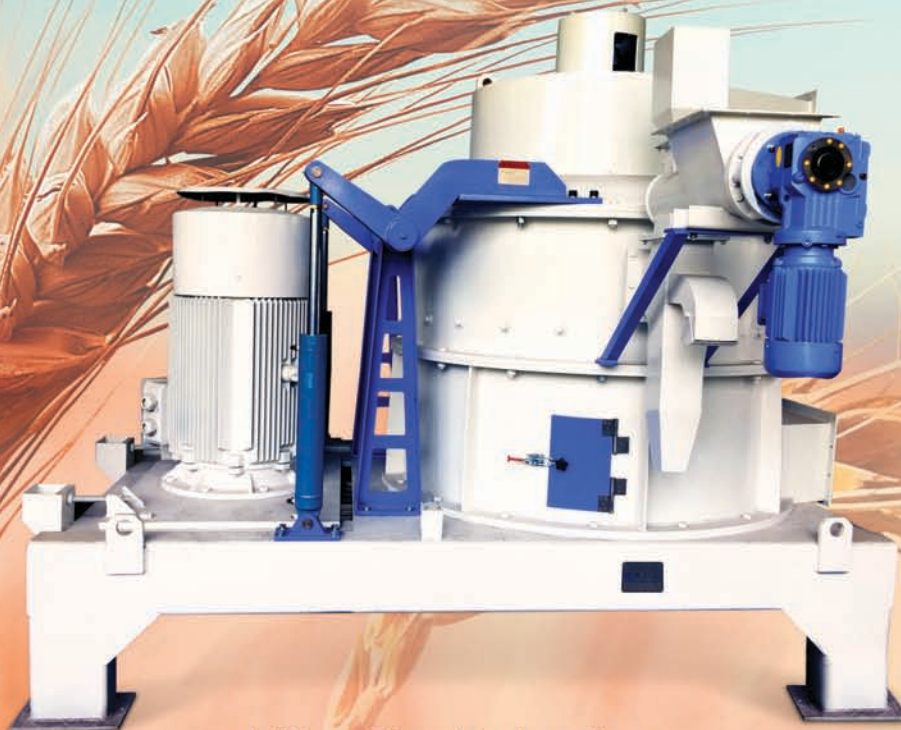


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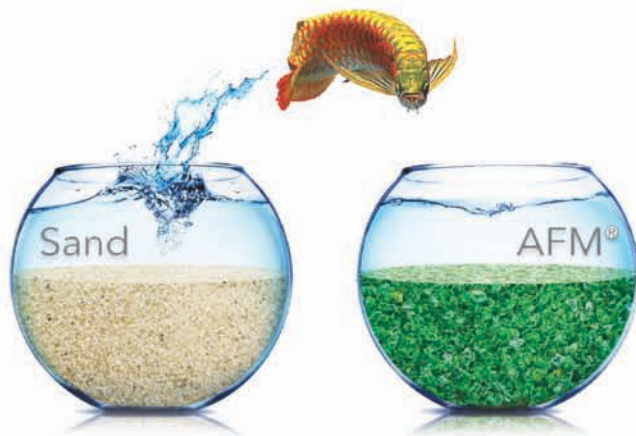
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Aquaculture CEOs Forum brings Industry Stakeholders together

Aquaculture Issues Discussed; Aqua International presents 30 prestigious National Awards



Panalists - from left: Pradip Navik, Ravi Kumar Yellanki, Dr A.G. Ponniah, Amit Sarogi, Dr D. K. Dey, Naresh Kumar Reddy K and K. Bhaskara Raju.

Hyderabad: The fifth edition of Aquaculture CEOs Forum India and AI Awards 2018 was held in Hotel Taj Deccan, Hyderabad on October 9,

2018 which was organized by Aqua International, the national English monthly published from Hyderabad, India.

industry on to a common platform and discussing on the present status and future prospects of the industry in the country.



Etela Rajender, Minister for Finance & Planning, Govt of Telangana

While the CEOs Forum with the theme “How the Stakeholders should Work to Meet the Challenges in Indian Aquaculture Sector?” was addressed by four stalwarts and experts with presentations on various aspects of Aquaculture industry, the Aqua International Awards 2018, national awards to recognize and appreciate the individuals and organizations for their outstanding performance, excellence and contribution to the profession and to the development of Indian aquaculture industry were presented to the winners. Aqua International presented awards for different categories of Aquaculture sector.



Ms I. Rani Kumudini, IAS Chief Executive, National Fisheries Development Board (NFDB)



Sandeep Kumar Sultania, Secretary, Department of AHD & Fisheries

Seven expert panalists took part in the Panel Discussion held on different issues of the industry.

AI Silver Jubilee

Aqua International, which completed 25 years of its publication and services to the industry organized Silver Jubilee celebration with cake cutting on this occasion.

Aqua International is organizing Aquaculture CEOs Forum & AI Awards function since 2014 bringing all segments of Indian aquaculture



M.A. Nazeer, Convener, Aquaculture CEOs Forum India 2018

Speakers of Aquaculture CEOs Forum India 2018



Ravi Kumar Yellanki,
"The Changing Face of Indian Shrimp Aquaculture"

Mr Ravi Kumar Yellanki spoke on *"The Changing Face of Indian Shrimp Aquaculture"* in Aquaculture CEOs Forum India 2018.

Mr Ravi Kumar Yellanki, Managing Director, Vaisakhi Bio-Marine Pvt Ltd and Vaisakhi Bio-Resources Pvt Ltd, has been familiar with shrimp hatchery operations in India for more than 20 years. Remarkably through his numerous written papers and publications, he shared his experiences and knowledge concerning shrimp hatchery sphere such as the management and its role in changing environment. His expertise in terms of local market trends and opportunities is unquestionable. Today, he concentrates his awareness on building sustainable strategies for Indian Shrimp Aquaculture.

Mr Ravi Kumar is also the President of Society of Aquaculture Professionals (SAP) and former Secretary of All India Shrimp Hatcheries Association (AISHA).



Dr D. K. Dey,
"Regulatory Requirement on Aquaculture Sector!"

Dr D. K. Dey made a presentation on *"Regulatory Requirments in Aquaculture Sector"*

Dr Dibyendu Kumar Dey did his B.V.Sc and AH, Field of Study Veterinary Medicine from Bengal Veterinary College. Dr D. K. Dey is the Chief Executive Officer of Globion India Private Limited, a Joint Venture Company of Suguna Holdings Pvt Ltd and Lohmann Animal Health GmbH, Germany. He was engaged in conceptualization of a state-of-the-art Poultry Vaccine manufacturing unit in India and has set up entire teams of R&D, Quality Control, Production as well as Regulatory and Marketing. He has expertise in the field of project conceptualization, management and execution for animal vaccine manufacturing units. He is well versed with regulatory affairs and works closely with Ministry of Agriculture, Animal Husbandry Department, FDA and various Research Institutions in India.

Dr Dey is also the President of INFAH – Indian Federation of Animal

Health Companies. INFAH has 48 members of Indian Animal Health Industry representing almost 85 per cent of the market involving multinational & Indian companies. INFAH works closely with National Policy makers and Regulators of India to uplift the quality standards and greater regulatory compliance of its members. INFAH is affiliated to HFA.



Channing Ke,
"How to Produce High-Quality Aquatic Extruded Feed"

Mr Channing Ke, General Manager, I.B.D, Guangzhou Tinder Industry Co. Ltd, spoke on *"How to Produce High-Quality Aquatic Extruded Feed"*

Mr Channing Ke is the General Manager of I.B.D of Guangzhou Tinder Industry Co. Ltd. He graduated from Food Engineering School of Wuhan Polytechnic University. He earlier worked in one large feed machinery enterprise responsible for International marketing and management with rich experience of feed processing technology and international marketing. Mr Channing hopes to bring Tinder feed machinery to Indian customers and make contribution to Indian feed industry.



Dr A.G. Ponniah,
"Public Private Partnership Towards sustainable Aquaculture Development in India"

Dr A.G. Ponniah, Former Director, CIBA made a presentation on *"Public - Private Partnership towards Sustainable Aquaculture Development in India"*.

Dr A.G. Ponniah started his career as a Scientist in Indian Council of Agricultural Research (ICAR) - Central Marine Fisheries Research Institute (CMFRI) and initiated work on genetic characterization of marine fin and shellfish. He was part of the team on remote sensing for chlorophyll mapping, tagging of shrimp, shrimp pond environmental dynamics and estuarine pollution monitoring.

At National Bureau of Fish Genetic Resources (NBFG) as Principal Scientist and later as Director, initiated the work on population genetics of endangered species, database on fish germplasm, risk and impact assessment of exotic species and establishment of a min-gene bank.

As Program Leader of Biodiversity and Genetic Resources Research Program, World Fish Center, Malaysia (CGIAR – World Bank funded institute) was responsible for FISHBASE, the most widely used web biological

database and of GIFT, the program on Tilapia genetic improvement and dissemination of improved strains was Coordinator of International Network of Genetics in Aquaculture (INGA).

As Director of Central Institute of Brackishwater Aquaculture (CIBA), the work programs he directly coordinated were use of remote sensing to evaluate impact of aquaculture on mangroves, nutrient profiling of aquaculture species, fish health monitoring and evaluating impact of climate change and development of mitigation measures. He was responsible for the risk assessment on alien shrimp vannamei and based on the report, the Department of Animal Husbandry, Dairy and Fisheries (DADF) implemented the controlled introduction of Vannamei with quarantine and guidelines for hatcheries and farms. Led the

active surveillance multi institutional team that established the absence of the exotic disease AHPNS in India.

He coordinated multi-country/multi institutional projects while at World Fish Center and NBFGR and developed public-private partnership research programs at CIBA. He had been a member of scientific committees in Indian Council of Agricultural Research (ICAR), Department of Biotechnology (DBT), National Biodiversity Authority (NBA) and Coastal Aquaculture Authority (CAA). Elected as Fellow of the prestigious National Academy of Agricultural Sciences (NAAS).

After retirement, Dr Ponniah served as Emeritus Scientist in CMFRI for two years and as Associate Editor of Journal of World Aquaculture Society. After retirement, he worked as ICAR Emeritus Scientist in

the (CMFRI), Chennai on exotic species. At present, he is member of Research Advisory/Expert Committee (RAC) of ICAR - National Institute of Abiotic Stress, and Chairman RAC, ICAR-Central Freshwater Research Institute, ICAR-National Innovations in Climate Resilient Agriculture

(NICRA) and member Quinquennial Review Team of ICAR- Central Island Agricultural Research Institute (CIARI). As member of the Expert Committee of DADF, framed the 'Inland Fisheries and Aquaculture Policy 2018' and presently engaged with developing the Mariculture Policy.

Panel Discussion

Below are the points discussed:

- ◆ How to achieve Govt of India's Slogan of Doubling Farmers' Income by 2020 ? How the Aqua Industry can Plan & Work to achieve it?
- ◆ During the first crop, farmers lost lot of shrimp seed affecting the economy and confidence of farmers. What was the reason for the huge early mortality.
- ◆ Diseases Situation in Aquaculture in the country is grim. How to prevent and control diseases.
- ◆ Shrimp Farmers constantly complain of lower Shrimp Prices. How to Overcome this Issue?
- ◆ What is the State of Technology Advancement and Utilization in Aquaculture? What are the Advantages a Farmer or a Feed Manufacturer, Processor & other stakeholders can get by using latest and Advanced Technology.



Panel Discussion in progress during Aquaculture CEOs Forum India & AI Awards 2018

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Glimpses of Aqua International Silver Jubilee Celebration



Aqua International celebrated Silver Jubilee of Aqua International publication on October 9, 2018 at Hyderabad coinciding with Aquaculture CEOs Forum. Aqua International Editor M.A. Nazeer expressed his gratitude to all those who helped him in the past 25 years in developing Aqua International with the best quality and standards. Seen in the above pictures are I. Rani Kumudini, Sandeep Kumar Sultania, Ravi Kumar Yellanki, M.A. Nazeer, Dr D. K. Dey, Dr A.G. Ponniah, D.K. Chopra Pradip Navik and M.A.Nadeem.

Dr A.G. Ponniah, Former Director, ICAR-CIBA & NBFGR honoured with 'Life Time Achievement Award 2018'



Dr A.G.Ponniah, Former Director, CIBA and NBFGR receiving Aqua International Life Time Achievement Award 2018 from Finance Minister, Etela Rajender, Govt of Telangana. Ms I. Rani Kumudini, IAS, Chief Executive, NFDB, Sandeep Kumar Sultania, Secretary, Dept of AHD & Fisheries, Govt of TS and M.A.Nazeer, Editor, Aqua International are also seen.

Dr A.G. Ponniah, Former Director, ICAR-CIBA and NBFGR received Life Time Achievement Award 2018 at the AI Awards 2018 gala evening held in Hyderabad on October 9, 2018.

Dr A.G. Ponniah started his career as scientist in Indian Council of Agricultural Research (ICAR) - Central Marine Fisheries Research Institute (CMFRI) and initiated work on genetic characterization of marine fin and shellfish. He was part of the team on remote sensing for chlorophyll mapping, tagging of shrimp, shrimp pond environmental dynamics and estuarine pollution monitoring.

At National Bureau of Fish Genetic Resources (NBFGR) as Principal Scientists and later as Director, initiated the work on population genetics of endangered species, database on fish germplasm, risk & impact assessment of exotic species and establishment of a min-gene bank.

As Program Leader of Biodiversity and Genetic Resources Research Program, World Fish

Center, Malaysia (CGIAR – World Bank funded institute) was responsible for FISHBASE, the most widely used web biological database and of GIFT, the program on Tilapia genetic improvement and dissemination of improved strains was Coordinator of International Network of Genetics in Aquaculture (INGA).

As Director of Central Institute of Brackishwater Aquaculture (CIBA), the work programs he directly coordinated were use of remote sensing to evaluate impact of aquaculture on mangroves, nutrient profiling of aquaculture species, fish health

“
Hoping to bridge industry and researchers so that the services of scientists and outputs of research projects are better utilized.
 ”

monitoring and evaluating impact of climate change and development of mitigation measures. He was responsible for the risk assessment on alien shrimp vannamei and based on the report the Department of Animal husbandry, dairy and fisheries (DADF) implemented the controlled introduction of vannamei with quarantine and guidelines for hatcheries and farms. Led the active surveillance multi institutional team that established the absence of the exotic disease AHPNS in India.

He has coordinated multi - country / multi institutional projects while at World Fish Center and NBFGR and developed public-private partnership research programs at CIBA. He has been a member of scientific committees in Indian Council of Agricultural Research (ICAR), Department of Biotechnology (DBT), National Biodiversity Authority (NBA) and Coastal Aquaculture Authority (CAA). Elected as Fellow of the prestigious National Academy of Agricultural Sciences (NAAS).

After retirement, Dr Ponniah served as Emeritus Scientist in CMFRI for two years and as Associate Editor of Journal of World Aquaculture Society. After retirement, worked as ICAR Emeritus Scientist in the (CMFRI), Chennai on exotic species. At present, he is member of Research Advisory/Expert Committee (RAC) of ICAR - National Institute of Abiotic Stress,

and Chairman RAC, ICAR-Central Freshwater Research Institute, ICAR-National Innovations in Climate Resilient Agriculture (NICRA), and member Quinquennial Review Team of ICAR- Central Island Agricultural Research Institute (CIARI). As member of the Expert Committee of DADF, framed the Inland Fisheries and Aquaculture Policy 2018' and presently engaged with developing the Mariculture Policy.

Turning point in career

Speaking about the turning point in his career, Dr Ponniah said, the risks taken in embracing the change of field to genetics and shift to Allahabad to join NBFGR early in career.

“
Mentoring of young scientists which I have started by helping them draft better research proposals.
 ”

Future plans

- Mentoring of young scientists which I have started by helping them draft better research proposals.
- Hoping to bridge industry and researchers so that the services of scientists and outputs of research projects are better utilized.
- Writing on topics like research management, research communication and impact of research.

Dr Ponniah's Contribution

- Many of the M.Sc Mariculture students who passed out when he was in the faculty are now leading entrepreneurs in shrimp aquaculture.
- CIBA Carried out two
(Contnd. on page 39)

Devendra Kumar Chopra, Executive Director, SRIBS Biotechniqs Pvt Ltd, honoured with 'Life Time Achievement Award 2018'



Devendra Kumar Chopra receiving Aqua International Life Time Achievement Award 2018 from Finance Minister, Etela Rajender, Govt of Telangana. Ms I. Rani Kumudini, IAS, Chief Executive, NFDB, Sandeep Kumar Sultania, Secretary, Department of AHD & Fisheries, Govt of Telangana and M.A.Nazeer are also seen.

Mr Devendra Kumar Chopra, Executive Director, SRIBS Biotechniqs Pvt Ltd received Life Time Achievement Award 2018 at the AI Awards 2018 function held in Hyderabad on October 9, 2018.

Mr D.K. Chopra was born and brought up in Saharanpur, Uttar Pradesh. He completed his Masters of Science in Plant Pathology. He also did Diploma in Management Development Program from Indian Institute of Management, Ahmedabad, India and Leadership Development Program in Asian Institute of Management, Manila, Philippines and Harvard Business School, Boston, USA. He lives with his wife Mrs Sunita Chopra, son Mr Yatin Chopra and daughter

Ms Vani Chopra. Both the children got married and settled in USA.

Mr D.K. Chopra started his career in 1974 as Chief Sales Manager in Indofil Chemicals Ltd and Group CEO in Biostadt India Ltd. Presently he is the Executive Director of SRIBS Biotechniqs Pvt Ltd.

Success rate of organizations promoted

Chopra has been successful in building up strong organizations to drive excellent growth in over four decades of his career with only two companies, he stated.

Other activities

Besides aquaculture, he primarily focussed on Agriculture business management including

R&D, Manufacturing and Supply chain Management. In addition he played active part in Industry Associations like Crop Care Federation of India and PMFAI as Director.

He felt that excellent products, processes and systems with strong orientation to build successful teams are the positive and best aspects of the company.

Turning Point

Mr D.K. Chopra launched Agriculture and Aquaculture Business divisions in Wockhardt and nourished them to grow to great heights. When there were no specific products / technologies were available at the time of 1990s, he pioneered to introduce speciality Aquaculture Healthcare products for shrimp / fish.

Future plans

Speaking about his future plans, Chopra said Business consultancy, Corporate Advisory, Helping / mentoring young Entrepreneurs in Agriculture and Aquaculture. Also wants to use his experience to help promote amongst farmers new technologies for Agriculture / Aquaculture crop productivity.

Motivation / Inspiration

Mr Chopra stated that Mr Habil Khorakhiwala, Chairman & Managing Director of Wockhardt Ltd inspired and motivated him the most. He was given freedom to implement his ideas to revenue generating business units, he added.

Milestone

Building up an organisation from almost scratch to USD100 mn in Business in 20 years time is a milestone of his life, said Mr Chopra.

Message to the Industry

Mr D.K. Chopra advised the industry that "All stakeholders, Govt Research Institutions, Corporates, Trade and above all the farmers need to join hands to formulate a long term strategic approach. Food Security for future generations is going to be a challenge".

“All stakeholders, Govt Research Institutions, Corporates, Trade and above all the farmers need to join hands to formulate a long term strategic approach. Food Security for future generations is going to be a challenge.”

(Contn. from page 38)

- PCR ring tests in 2007 and 2009 along with MPEDA for improving the standards of PCR labs.
- c. Services provided to CAA to implement the quarantine and monitoring of hatcheries and farms.
- d. Capacity building of line

department officials on following the guidelines on Vannamei farming

- e. Facilitating the development a full package of seabass culture covering seed and feed.

Message to the Industry

In a message to the industry Dr Ponniah said

that the industry and research institutions should be proactive in developing collaborative programmes. For the industry and government institutions, to ensure that farmers adopt BMPs with regard to pond management and disease control.

For the industry and government to develop a joint programme on

- i. Replacement for fish meal
- ii. Genetic programme for improvement of Indian white shrimp.

He has 103 peer reviewed research papers and 162 other publications.

Ravi Kumar Yellanki, Managing Director, Vaisakhi Bio-Marine Pvt Ltd honoured with 'Best CEO in Aquaculture Sector Award 2018'



Ravi Kumar Yellanki receiving Best CEO in Aquaculture Sector Award 2018 from Finance Minister, Etela Rajender, Govt of Telangana and Ms I. Rani Kumudini, Chief Executive, NFDB.

Mr Ravi Kumar Yellanki, Managing Director, Vaisakhi Bio-Marine Pvt Ltd and Vaisakhi Bio-Resources Pvt Ltd received Best CEO in Aquaculture Sector Award 2018 during AI Awards 2018 gala evening held in Hyderabad on October 9, 2018.

Mr Ravi Kumar Yellanki is

“
No compromise on anything and giving a product to the customers that helps us make profits is the best and positive aspects of our company and to our customers
”

the Managing Director of Vaisakhi Bio-Marine Pvt Ltd, Vaisakhi Bio-Resources Pvt Ltd, the leading shrimp hatchery operators in India with a turnover of Rs

150 crores to 200 crores. Between the two companies, a quantity of 2.5 billion fry is produced to cater to the needs of shrimp farmers of several maritime states of the country. As such, Vaisakhi has a pan Indian presence.

Ravi Kumar holds a Civil Engineering degree from Nagarjuna University and post-graduate diploma in management from Xavier Institute of Management, Bhubaneshwar. He has published several papers on modern shrimp management as well as infrastructure requirements and operation, biosecurity measures and sustainable shrimp aquaculture. Apart from this, he visits several aquaculture institutes in the country including IIT, Karaghpur to give guest lectures.

For more than 20 years, Mr Ravi Kumar Yellanki has been familiar with hatchery operations in India.

Sandeep Kumar Sultania, Secretary, Department of AHDF, Govt of Telangana honoured with 'Best Govt Efforts for Promotion of Aquaculture Award 2018'



Sandeep Kumar Sultania, IAS, Secretary, Department of AHD & Fisheries receiving Best Govt Efforts for Promotion of Aquaculture Award 2018 from Finance Minister, Etela Rajender, Govt of Telangana. Ms I. Rani Kumudini, Chief Executive, NFDB, and M.A.Nazeer are also seen.

Remarkably through his numerous written papers and publications, and he shared his experiences and knowledge concerning shrimp hatchery sphere such as the management and its role in changing environment. His expertise in terms of local market trends and opportunities is unquestionable. Today, he concentrates his awareness on building sustainable strategies for Indian Shrimp Aquaculture.

He also happens to be the President of Society of Aquaculture Professionals (SAP) and former Secretary of All India Shrimp Hatcheries Association (AISHA).

No compromise on anything and giving a product to the customers

that helps us make profits is the best and positive aspects of our company and to our customers, he stated.

Best Decision for company

By producing disease free seed from wild monodon broodstock has brought Vaisakhi Bio-Marine Pvt Ltd in to the lime light and also helped the farming fraternity at large, he said.

Message to the Industry

In a message to the industry, Mr Ravi Kumar said Shrimp aquaculture is changing by the day with lot of emerging issues. If we do not think out of the box and come up with new ideas and practices to counter the emerging issues, the industry is going to go down. Change is the name of the game, he added.

Pradip Navik, Director, Zeal Aqua Ltd receives 'Best Emerging Enterprise in Aquaculture Award 2018'



Pradip Navik receiving Best Emerging Enterprise in Aquaculture Award 2018 from Finance Minister, Govt of Telangana, Etela Rajender and Ms I. Rani Kumudini. Sandeep Kumar Sultania and M.A.Nazeer are also seen.

Mr Pradip Navik, Whole Time Director, Zeal Aqua Ltd received Best Emerging Enterprise in Aquaculture Award 2018 at AI Awards 2018 function held in Hyderabad on October 9, 2018.

Mr Pradip kumar Ratilal Navik is a Whole Time Director of Zeal Aqua Limited. He is one of the main promoters of the company. He has more than two decades of experience in aquaculture.

Since 1995 he is in aquaculture activity, thus he has more than 20 years of experience in aquaculture industry. He and his family belongs to fisherman community.

“
Aquaculture is very lucrative business with high risk which has to be tackled very sensibly
”

Mr Pradip Navik started his career as Sarpanch in

Dandi Village, near Surat, Gujarat in 1982, then he started aquaculture pond in his village and in surrounding villages in the year 1985. He started the company by name Zeal Aqua Ltd located at Surat, Gujarat. In the year 2009 which is now a listed company having ponds, trading of aquaculture feed, seed and medicines and started processing house at Orma village near Olpad.

Zeal Aqua Limited also have shrimp farming ponds at villages Delasha, Bhagwa, Mor, Nesh, Mandroi, Ilav, Katpor, Kantiyajal etc at Olpad Taluka, Surat District, Gujarat.

Key Persons

Mr Shantilal Ishwarbhai Patel, Mr Pradip Kumar Ratilal Navik, Mr Rohan Pradipkumar Navik and Mr Dhavalkumar Shantilal Patel are the key persons in Zeal Aqua.

Category of products

Mr Navik stated that Prawn is main product at our pond sites. There are many products like Headless

(Contnd. on page 48)

Saji Chacko, CEO, Onaway Industries Ltd honoured with 'Best Executive with Long Service Award 2018'



Saji Chacko receiving Best Executive with Long Service Award 2018 from Finance Minister, Etela Rajender, Govt of Telangana. M.A.Nazeer is also seen.

Mr Saji Chacko, CEO, Onaway Industries Ltd received Best Executive with Long Service Award at AI Awards 2018 gala evening held in Hyderabad on October 9, 2018.

“
Annual production and Productivity in the Onaway farm per crop is close to 1000 MT at present and now targeting to produce over 1500 MT
”

Mr Saji Chacko did his M.Sc. Mariculture during 1985-87 at CMFRI, Cochin. Later he entered in commercial shrimp farming in Kenya. He worked as Farm Manager in Hort Ltd, Kenya from 1991 to 1993, and also worked as Marketing Manager in Higashimaru Feeds in 1993.

In 1994 he started Onaway Industries Ltd to set up a 100 ha shrimp farm, and recently acquired and developed another

50 ha. Presently he is also a Director of Poseidon Aquatech Pvt Ltd. He lives with his wife Mrs Reny Saji and a daughter in Valsad, Gujarat.

Mr Saji Chacko was the first to obtain L. vannamei farming permission in India and first to introduce Auto Feeders with partners Mr R. Srinivasan and Mr S. Muthukaruppan and designed software based automatic feeder for feeding L. vannamei.

Annual production and Productivity in the Onaway farm per crop is close to 1000 MT at present and now targeting to produce over 1500 MT, he stated.

Contributions to the Development of Coy

Saji increased the turnover of Onaway Industries Ltd from less than Rs 5 crores to Rs 50 crores.

Annual Turnover of Onaway Industries Ltd is around INR 50 crores.

Awards / Recognitions of Onaway Industries Ltd

1. Best Fish Farmer Award by Dr Hiralal Choudhari Fisheries Foundation in 2006-07

(Contnd. on page 49)

Naresh Kumar Reddy K, CEO, Reddy Drugs and Laboratories receives 'Best Young Entrepreneur in Aquaculture Award 2018'



Naresh Kumar Reddy receiving Best Young Entrepreneur in Aquaculture Award 2018 from Finance Minister, Etela Rajender, Govt of Telangana. Ms I. Rani Kumudini and Sandeep Kumar Sultania are also seen.

Mr K. Naresh Kumar Reddy, CEO, Reddy Drugs and Laboratories received Best Young Entrepreneur in Aquaculture Award 2018 at AI Awards 2018 function held in Hyderabad on October 9, 2018.

Mr Naresh Kumar Reddy started his carrier in 2008 as Production Manager in family business named Reddy Drugs and Laboratories after completion of his Masters in Pharmacy from Andhra University.

Mr Naresh Kumar Reddy follows his father's footsteps. After getting some experience in production he started expanding Reddy Drugs and Laboratories products by taking over Marketing responsibilities. Reddy Drugs and Laboratories is the healthcare and supplement manufacturing company for Aquaculture. From 2012 the company got more and more reputation in Aquaculture because of the products they provide to farmers through their distribution network. In a span of 4 years the company's turn over reached to Rs 20 crores.

As I am young, my ambition is to make my family

owned company into top 10 healthcare product manufacturing companies in Aquaculture. For over a decade the company products gained good market across Andhra Pradesh and expanded to Gujarat and West Bengal, said Mr Naresh Kumar.

Turning Point

Turning point in my career is fire accident happened at raw material store sometime back. That accident taught me how to deal during difficult situations. After that accident I involved in each and every aspect in my company rather completely depending on employees. Circumstances made me strong after that incident. So I believe that is a turning point of my career, he stated.

As a second generation business man, I learnt that our family business model is unorganized with lot of talented people. Relationship wise bonding between management and employees was too good. But there is no clear recognition of talented people, responsibility feeling is low among employees, Co-ordination between different sections was not up to the mark. Lot of technology was running

in manufacturing process which is outdated and imported from outside labs and outside persons. At that time I thought I have to set right the unorganized model into a professionally organized model.

I concentrated on improvement of Co-ordination among employees, concentrate on development of innovative products through research according to customer needs.

**“
Young people are quick learners, creative with fresh minds; more time for risk taking, and these things open the doors of new opportunities in any segment so talented young entrepreneurs play key role in the success of a company. It is also good for industry and
”**

The trends and approach of attending to solve the issues of Aquaculture sector were in positive way from farmers, media, technical persons, government etc.

Highly knowledgeable people and government were identifying this sector as highly appreciable industry in future. Best science, technology are incorporating into this field to resolve problems like diseases, growth, harvesting, processing, packing etc.

Testing Labs for Viruses

detection, water quality assessment were developing, but not up to the mark, Transparency in testing has to develop.

Farmers need more support from government on price fluctuation. Government has to educate farmers about export trends why because rumours confuse the farmers and spoils the industry.

As a young entrepreneur the major issue is price fluctuation issue. To resolve this we can improve local retail seafood market with help of government and other seafood related organizations, getting transparency in exporting seafood etc.

Other issues like diseases, growth, harvesting etc.

More Interpretation of science and technology through research to solve those issues.

Other Activities

Besides Aquaculture his activities are social service (he is the Director in CRC old age home for the past 3 years and recently also been elected as Secretary to Government Colleges Development Association.

His Contributions

Mr Naresh Kumar personally met customers, dealers and worked with end sales employees. His experience and science background helped him to give perfect guidelines to R&D department to get best results. He personally involved in product development which gave him best outputs.

Role of a Young Entrepreneur

Usually young people are quick learners, creative with fresh minds; more time for risk taking, and these things open the doors of new opportunities in any segment so talented young entrepreneurs play key role

(Contnd. on page 43)

Malluru Karthik, Managing Partner, Sri Biotech receives 'Best Young Entrepreneur in Aquaculture Award 2018'



Malluru Karthik with his wife Manognya Gorrapati receiving Best Young Entrepreneur in Aquaculture Award 2018 from Finance Minister, Etela Rajender, Govt of Telangana. Ms I. Rani Kumudini and Sandeep Kumar Sultania are also seen.

Mr Malluru Karthik, Managing Partner, Sri Biotech received Best Young Entrepreneur in Aquaculture Award 2018 at AI Awards 2018 gala evening held in Hyderabad on October 9, 2018.

Mr Karthik Malluru completed Masters in advertisement marketing and human resource management from Aurora's School of Business in 2013 from Hyderabad.

Mr Karthik stated that he wanted to do something in sales & marketing and was up for challenges when he took up Sri Biotech in 2015 which was on the verge of closing and planned to refurbish it. The company barely had customers in 2015, but the quality of the product was good. All it needed was a proper marketing and branding to get back in the market. We did not have any representatives in the market and my company's manpower was just 3. To bring increase in sales trend in business was my motivation and then I started hiring for my company in the department of production and sales. Now, my team is of 8 members (4 in production

and 4 in sales).

He built Sri Biotech Company's reputation on the 'Best product quality and affordable price. In the year 2016 - 2017 the business began to improve and company's sales started increasing from 6 to 8 Lakhs P.A and to 25 Lakhs per annum.

Future Endeavours

“
Senior entrepreneurs should encourage entrepreneurs in our aqua industry as we need lot of new ideas and new energy/thoughts and also keep the integrity going among each other and try to give it back to the society as much as we can
 ”

I would like to expand Sri Biotech as a brand to unexplored coastal areas of India. We plan to expand our domain to Poultry and Veterinary divisions as well, Mr Karthik said.

Motivation from Mr M.S.

Dhoni

I draw motivation from Mr M.S. Dhoni and that motivates me to do the thing what I do innovatively. The trait which I admire mostly in Dhoni is trying something different when the odds are against you and not being afraid to fail. I always feel what Dhoni is to cricket, Karthik Malluru should be the same to Aquaculture industry and I am working towards the same, he stated.

Other Activities

Besides aquaculture my personal activities include professional cricketer who represented Hyderabad under 14s. Now I am a part of a cricket team which plays corporate and other tournaments around Hyderabad and I am also a volunteer for dog rescues and I am a part of People for Animals, an animal rescuing NGO, he said.

Turning Point

Speaking about the turning point in his career, Karthik Malluru said, the only turning point I would say is quitting my job due to lack of job satisfaction and going broke without having much more than Rs 40,000 in my savings.

(Contn. from page 42)

in the success of a company. It is also good for industry and stakeholders he stated.

Message to Entrepreneurs

Get the lessons from the stories of successful and unsuccessful business people. Especially unsuccessful people analyze the story and get the reasons of failure. Those reasons help to reach the goal with more pre-cautions he told.

After quitting the job, at that moment when I decided not to quit or give up on what I dreamt of as a student (to have a company of my own and give something back to the society which helps me to be what I am today).

Future Plans

By the end of 2019 we target to enter the veterinary division and restart Poultry wing which was once our USP. I want Sri Biotech to be associated with quality of our products and personally I want to start-up a rescue home for dogs, he said.

Request to senior entrepreneurs

Mr Karthik requested senior entrepreneurs to "please encourage entrepreneurs in our aqua industry as we need lot of new ideas and new energy/thoughts and also keep the integrity going among each other and try to give it back to the society as much as we can".

Message to Farmers: "If you are spending a single penny on any product or any service from aquaculture industry try to use it to its worth and complain to the company if something is wrong as it is your hard earned money, and at the same time I urge them to have mutual respect towards companies and people working for it as together we win and can make wonders; alone we are nothing but mere existence", he said.

Message to Farmers

Farming community should feel that their are in the Ever-Green field (food industry). Try to gain knowledge about culture, new trends, new species, exports etc. That makes you more profitable farmer. Practical observation makes you more perfect in culture, said Mr Naresh Kumar Reddy.

Purna Sri Sai Aqua Feeds receives 'Best Shrimp Feed Distributor Award 2018'



T. V. Srinivasa Reddy receiving Best Shrimp Feed Distributor Award 2018 from Ms I. Rani Kumudini and Sandeep Kumar Sultania.

Mr T. V. Srinivasa Reddy, Proprietor, Purna Sri Sai Aqua Feeds, Neggipudi, Maruteru, West Godavari District received 'Best Shrimp Feed Distributor Award 2018' at AI Awards gala evening held in Hyderabad on October 9, 2018.

Mr T.V. Srinivasa Reddy was born and brought up in a village Akividu in West Godavari district, Andhra Pradesh. He did B.Sc from SVKP Arts & Science College.

“
Purna Sri Sai supplies 15,000 tonnes Shrimp feed and 3,000 tonnes Fish feed annually. We provide free lab service and free technical service to farmers with free water analysis
”

He started Aqua Feed Distribution by name Purna Sri Sai Aqua Feeds in 2002. During the initial days he

was able to sell 750 Tonnes shrimp feed per year. In 2008 he started Fish Feed distribution also where he was able to sell 4000 tonnes of feed per year.

Purna Sri Sai Aqua Feeds supplies Aqua Feed, Aqua Medicines & Minerals of companies like CP, Virbac, Biostadt, Himalaya, Vetguard, Synergy etc with distributorship in Manchili and Veeravasaram villages in West Godavari. They are having godown facility with a capacity of 1000 tonnes.

Aims to achieve 20,000 Shrimp feed sale by 2019

Purna Sri Sai supplies 15,000 tonnes Shrimp feed and 3,000 tonnes Fish feed annually. They provide free lab service and free technical service to farmers with free water analysis. The company aims to achieve 20,000 Shrimp feed sale by 2019.

Besides aquaculture, Srinivasa Reddy is into Petroleum business (Petrol Bunk), Exide Batteries & Inverters distribution, JK Tyres Distribution and Real Estate.

(Contnd. on page 45)

Anmol Feeds Pvt Ltd receives 'Best Upcoming Fish Feed Miller Award 2018'



Amit Saraogi, E. Narayana, & Dr B. M. Hasan receiving Best Upcoming Fish Feed Miller Award 2018 Finance Minister, Etela Rajender, Govt of Telangana. Ms I. Rani Kumudini, Sandeep Kumar Sultania and M.A.Nazeer are also seen.

Mr Amit Saraogi, Managing Director, Anmol Feeds Pvt Ltd, Kolkata, West Bengal received 'Best Upcoming Fish Feed Miller Award 2018' at AI Awards function held in Hyderabad on October 9, 2018.

Anmol Group started its business in Poultry Feed and diversified into Cattle, Fish, Fertilizers and Rice Mill towards catering the entire ecosystem of Livestock Management and Agriculture. Matsya Bandhu, Sathi, Premium, Aqua Choice are the names of feed products (brands) being manufactured by the company. Anmol Feeds has a network of 120 plus dealers across the country with a sales team of about 60 for its fish feeds. Anmol is expanding their market of fish feed in both north East India and Kerala and Andhra Pradesh.

In a small span of over 17 years, Anmol Group has achieved several milestones. Among them the most prominent ones are: Growth in the Cumulative Production Capacity from 10 MT per

day to near 1300 MT per day and Pan India presence along with its presence in the neighbouring countries of Bangladesh, Nepal and Bhutan and has planned to increase Group's presence

“
Apart from our products, we are aware of the potential of organized farming, thus we also take the responsibility to make people aware about its benefits. We achieve this through our market development activities and dealer and farmer meets to bring more awareness of aquaculture and nutrition
”

in international market starting with Africa and Russia in future. Mr Amit Saraogi is the Managing Director of the company.

Amit Saraogi was born in



9 October 2018, Hyderabad, India

Muzaffarpur, Bihar. He did Bachelor of Engineering from Bangalore University and Skill enhancement course in "The International Livestock and Feed Production" from Utah State University, USA. He Started his professional career at the age of 23 in 2000 with his first poultry feed production unit in Muzaffarpur, Bihar with his visionary leadership and "Customer First" philosophy of management. He has proved that achievements are just milestones once we start chasing our dreams. Under his praise worthy leadership and macro management style of work Anmol Group has become one of the most respected and top rated companies in livestock feed within India and commands not only major market share in the category, but has also become a household known Brand among its ever growing consumer base. Anmol is known for its premium quality, competitive pricing and stands by the promises it has made to its consumers.

Products and Services

Anmol Feeds follows European standards to better formulate the aqua feeds which results in better growth of fishes. They also make their feeds more sustainable by improving their retention time, thus keeping the water clean. They also provide training and awareness to farmers for better use of feeds and farming practices that

(Contn. from page 44)

Message to the industry

Mr Srinivasa Reddy advised the industry stakeholders that there is good future to the Aquaculture industry.

makes them a pioneer in the industry.

Acceptance and Satisfaction Level from the Customers

One of the prominent brands in poultry feeds, Anmol Group is catching up fast in the aqua feed division too. With consistent quality and high FCR value and customer satisfaction translating from our success in the poultry feeds, we have a very positive image in the minds of our customers, said Mr Saraogi.

Positive and Bests Aspects

Apart from our products, we are aware of the potential of organized farming, thus we also take the responsibility to make people aware about its benefits. We achieve this through our market development activities and dealer and farmer meets to bring more awareness of aquaculture and nutrition, stated Mr Saraogi.

Company's Future plan

- Venturing into cage culture and shrimp processing
- Venturing into Shrimp Feed Production
- Venturing into Southern Indian Fish Feed Market

Message

Mr Amit Saraogi said that our industry can only grow with the growth of our customers, so it is important that we think as a farmer and work along with them. We have great responsibility on our shoulder to empower the farmers of our country and it should be done ethically and with pride.

Just like every industry there will be ups and downs even in the Aquaculture sector also. Those who brace when the industry is in down, will surely have better future.

Biostadt India Ltd awarded with 'Best Aquaculture Products Exporter Award 2018'



Mr Rama M. Babu and Mr V. Sridhar Kumar receiving Best Aquaculture Products Exporter Award 2018 from Finance Minister, Etela Rajender, Govt of Telangana. Sandeep Kumar Sultania is also seen.

Mr Rama M. Babu and Mr V. Sridhar Kumar, General Managers, Biostadt India Limited received 'Best Aquaculture Products Exporter Award 2018' at AI Awards gala evening held in Hyderabad on October 9, 2018.

Biostadt India Ltd is a renowned name in the Indian Aquaculture Industry and South East Asia as well. The company is supplying inputs to the Aquaculture market for the last 19 years. Biostadt is the first corporate house to introduce Aquaculture products in Indian market. These products are known for their good quality, efficacy and well accepted in the India, Vietnam, Thailand, Philippines and Bangladesh markets. The company is certified as ISO 9001: 2008 series. These products are eco-friendly in nature and the company has been assessed as ISO 14000 Standard of International Environmental Management System. VinhThinh Biostadt got the Award of 'Best Quality Aqua Products' for last three years from Government

of Vietnam. They have the Aqua portfolio consisting of the following categories.

Sanitizers/Disinfectants:

Mizuphor, Blesson, Sanmolt-F and Biosynth.

Adsorbants: Clinzex-DS, BioU, Biocurb and Addoxy.

Feed supplements: Wockcee, OsMin and Trubind.

Probiotics: Environ-AC, Environ-AC Power, Aqualact, PROFS and Eco-Pro.

CITROMAX: Herbal Disinfectants and growth modulator.

Fish Hormone: WOVA FH.

Soil Conditioner: Zymaq Power.

Mr Juzar S. Khorakiwala is a Director of the company. Biostadt is a young dynamic organization always striving for innovative solutions to improve farm productivity in both Agriculture and Aquaculture. Backed by a strong R&D support and international marketing alliances with reputed MNCs, they are amongst the leading companies in business. Their business is making rapid strides

(Contnd. on page 52)

Synergy Biotechnologies receives 'Best Aquaculture Healthcare Products Manufacturer Award 2018'



L. Nand Kumar receiving Best Aquaculture Healthcare Products Manufacturer Award 2018 from Finance Minister, Etela Rajender, Govt of Telangana and Ms I. Rani Kumudini.

L. Nand Kumar, Head - Marketing, Synergy Biotechnologies, received 'Best Aquaculture Healthcare Products Manufacturer Award 2018' at AI Awards function held in Hyderabad on October 9, 2018.

Synergy Biotechnologies is a partnership firm that had its genesis in the year 2002 with an intention to create awareness of sustainable and responsible aquaculture among the aquaculture farming community. It is led by its Managing Partner Dr Narayana Swamy Allada, a Ph D in Aquaculture who has been in this industry for two decades. He started his career in this industry as a Technical Manager in Pfizer food science, USA to technically assist their products under an Indian distributor. During his tenure at Pfizer he had developed few formulations which have gained immense popularity with the farming community and have gained branded status in the industry. He has been ably supported by Mr Nand Kumar Lathker, who shoulders the responsibility

of marketing the products all over the aquaculture areas.

Aqua industry is a highly profitable industry and this has created a plethora of sub-standard companies, which has spread themselves far and wide and has been inflicting huge economic losses on the farmers by promoting spurious products. Though this company has been in existence for just over fifteen years, the people behind the promotion of the company and the products have two decades of experience in Aquaculture sector. The aim of the company is to create an awareness of scientific culture at the grass root level and manufacture and market quality inputs and ensure sustainability in aquaculture and also ensure that the benefits reach the producers i.e. the farmers.

In this endeavour to inculcate responsible aquaculture, Synergy Biotechnologies offers natural, unique and safe technologies to overcome the problems that arise in aquaculture operations.

The ranges of products are:

- 1. MIKROZYME BS:** A blend of non-pathogenic bacteria with digestive enzymes to degrade organic wastes and maintain water and soil quality.
- 2. PROSAP:** A natural solution for ammonia pollution in ponds as well as in GI tract of animals fortified with bio-converters.
- 3. PROBAC-BC:** A bacterial blend of non-pathogenic, beneficial bacteria to ensure water quality.
- 4. ODOBAN-A30:** A natural product to reduce offensive odors in aquaculture operations.
- 5. NATSOL:** A natural solution for bacterial, fungal, viral and protozoal infections in animals that cause a havoc in aquaculture operations and a potent replacement for antibiotics.
- 6. IMMUTONE-C:** A scientific blend of natural immuno stimulants, liver stimulants and osmo protectants fortified with vitamins, amino acids and antioxidants to strengthen shrimp immunity.
- 7. SHRIMP-C:** A blend of stabilized Vitamin C for use in aqua farms.
- 8. LACTO PLUS:** A gut conditioner with lacto bacillus and yeast extracts for enhancing growth.
- 9. PHYTOMAX:** A biotech tool to promote phytoplankton and diatoms in aqua farms.
- 10. SUPER OXY-GEN:** A potent tool to enhance dissolved oxygen in aqua farms.

11. DISFECTAL: A potent biocide for the biosecurity of the farms.

Synergy Biotechnologies is proud to be associated with companies that spend substantial amounts for developing technologies to meet the needs of the emerging industries.

Distributors of Processing INC. U.S.A

DPI has its base in California, USA and has been in operation for nearly 40 years and exporting their products to more than 55 countries worldwide. They have an expertise in production of natural products that are incorporated in animal feeds. The all-natural products of theirs help in maintaining the quality of production without jeopardizing the environment. Synergy Biotechnologies is the exclusive distributor for their products in India and Sri Lanka.

American Bio-systems INC. USA

ABS has its base in Virginia, USA and has been in the business for providing solutions successfully for industrial pollutants for the past 25 years and exporting their range of products to more than 25 countries worldwide. It has an expertise in production of non-genetically modified, non-pathogenic strains of bacteria to reduce effluents of industries (bioremediation). They also produce specialty enzymes for live stocks, large animal and aquaculture industry. Synergy Biotechnologies is the exclusive distributor for their products in Indian market covering the above industries.

Operations

It operates all along East

(Contnd. on page 47)

Golden Marine Harvest receives 'Best Shrimp Hatchery Award 2018'



Ravi Kumar and Saravanan Babu receiving Best Shrimp Hatchery Award 2018 from Sandeep Kumar Sultania.

Mr Ravi Kumar and Mr Saravanan Babu, Managing Partners, Golden Marine Harvest received 'Best Shrimp Hatchery Award 2018' at AI Awards gala evening held in Hyderabad on October 9, 2018.

Golden Marine Harvest based at Marakkanam in between Chennai and Pondicherry was established in 2008. It produces L. Vannamei shrimp seeds with a production capacity across all hatchery units are approx. 2500 million seeds per year. They procure Shrimp Broodstock from Kona Bay, Hawaii, USA & Blue Genetics, Mexico with average size of 40 grams. They supply seed in Tamil Nadu, Andhra Pradesh and West Bengal on the East coast and Maharashtra and Gujarat on the West and Haryana. Around 270 farmers are using L. Vannamei shrimp seeds produced by this company.

Golden Marine Harvest is a partnership firm with Mr Ravi Kumar Korikana as the Managing Partner. He was born in Nandivada Village near Srikakulam in Andhra Pradesh. He did Post Graduate degrees in Aquaculture &

Environmental Sciences. He lives with his wife Mrs Bhavani Ravi Kumar Korikana and three children Anjali, Deepak and Roshini.

Mr A. D. Saravanan Babu is another Managing Partner in the company and he was born in Madurai, Tamil Nadu. He holds a Post Graduate degree in Aquaculture. He lives with family wife Mrs Usha Saravanan and two children Kaushik & Dikshita.

Production units

1. Golden Marine Harvest, Marakkanam
2. Golden White Prawns, Marakkanam
3. Golden Marine Harvest Unit II, Sirkazhi
4. Gujarat Golden Marine, Gujarat

Key persons

Mr K. Ravi Kumar, Managing Partner
 Mr A.D. Saravanan Babu, Managing Partner
 Mr K.S.R. Loganathan, Managing Partner
 Mr K. Eswara Reddy, Managing Partner

Acceptance and Satisfaction Level

Golden Marine Harvest's growth trajectory itself speaks for the acceptance

and customer satisfaction levels. We have been able to garner customer loyalty on our motto of "Customer First", said Mr Ravi Kumar.

Benefits to Customers

BAP Certified Hatchery, Quality and Quantity, Customer Service, Customer Loyalty, A Golden Harvest for the customers thus reaping higher profits, employment generation and aiding Socio-Economic change, he stated.

Size of Market

Golden Marine Harvest achieved an estimated supply of 2500 million shrimp seeds and Rs 1000 million in value for the year 2018. Our estimated market share in the industry is around 10%, he informed.

Turning Point

I think in my opinion being at the right place in the right time has been a major turning point. It is also important to note that the farmers input and feedback has been a major factor in our growth story. All these put together makes us what we are today as a Brand and as an organization, he said.

Future plans

Our vision is to be the highest quality oriented

hatchery organization in Asia thus enabling our dream to bring safe and healthy protein rich food to every household's dining table and we are diligently working towards it, he told.

“
 Our vision is to be the highest quality oriented hatchery organization in Asia thus enabling our dream to bring safe and healthy protein rich food to every household's dining table and we are diligently working towards it
 ”

Role of Shrimp Hatcheries

Mr Ravi said that Shrimp hatchery is the foundation or start cycle of shrimp culture and therefore, it is very essential and important that at the hatchery level Best industry Practices are followed and better standards are set. He wishes all the Best to the farmers, feed producers, hatcheries and other stakeholders of the Industry.

(Contn. from page 46)

and West Coast of India through a large network of distribution network in all major and minor areas of aquaculture. The principle business is effected through exclusive, limited dealership outlets thereby ensuring profitability and control over its operations.

Human Resources

The highest priority and the strength of the company lies in its human resources. The young and dynamic sales team comprises of around

12 experienced people led by an extremely professional and experienced marketing manager. The sales staff are ably assisted by a team rich in technical expertise to guide the aqua farmers about the overall management of the farms and usage of right inputs. The whole team is assisted by able accounts and production staff based at Hyderabad office.

Biomed Techno Ventures awarded with 'Best Upcoming Aquaculture Healthcare Company Award 2018'



P. V. Krishnam Raju and A.V. Durga Prasad receiving Best Upcoming Aquaculture Healthcare Company Award 2018 from Ms I. Rani Kumudini and Sandeep Kumar Sultania. M.A.Nazeer is also seen.

P. V. Krishnam Raju and A.V. Durga Prasad, Managing Partners, Biomed Techno Ventures received 'Best Upcoming Aquaculture Healthcare Company Award 2018' at AI Awards gala evening held in Hyderabad on October 9, 2018.

Biomed Techno Ventures was established in the year 2003 with a mission to manufacture bio-technology based products to distribute, promote and market their products to a wide range of farmers in India. Though the company initially started its operations as Distributor, within a span of three years Biomed has grown into manufacturing company formulating health care products for shrimp and fish. The registered office of the company is at Vijayawada, Andhra Pradesh. Biomed was also the first company to scientifically do a market research and develop a database of the entire farmers of the coastal Andhra.

Biomed introduced revolutionary

concepts like real time price information, quality guarantee and technology transfer programmers into aquaculture sector. Biomed won the trust and loyalty of the farmers through their problem addressing products and technical services. With its right product range and timely technical support Biomed has won trust and confidence of the farmers and within a short span of three years it emerged as one of the best Companies in India for the Aqua Healthcare Products.

Its vision is to be established as one of the leading companies with a vision to deliver Aqua healthcare solutions of the highest quality that contribute to improving the health of animals and wellbeing of farmers. Along with mission to maximize customer value through world class manufacturing practices continuously striving for excellence in the products and services we provide. Company provides PF, ESI and Insurance cover to

each & every Employee.

Management Team

1. Mr P.V. Krishnam Raju is a Managing Partner. He did B.com, MBA and having experience over 25 years in diversified Industries. He was Ex G.M in Laila Foods & Feeds Ltd.
 2. Mr A.V. Durga Prasad, Partner. He completed M.Sc. having experience over 20 years in Aqua Industry as consultant. He published papers on various diseases in shrimp culture and he was Ex Manager of National Prawn company.
 3. Dr Subba Raju, Associate & Consultant having experience over 32 years in India & US. He is CEO & Director of Natsol Laboratories Ltd.
 4. Dr Vijaya Pasupuleti, Consultant, President of Sai International INC
- Healthcare Products –**

Prawn & Fish

- ▶ ECO – CARE HS
- ▶ NOVIR
- ▶ REVIVE – V
- ▶ BIOMED IMG
- ▶ BIOCARE – VW
- ▶ AMMO CURB
- ▶ BIO – MIN
- ▶ N- BIND
- ▶ S – MIN
- ▶ BIO - FRESH
- ▶ NOMOR
- ▶ V – nil
- ▶ O2 PLUS
- ▶ M P C
- ▶ CITRO – MAX
- ▶ EN- CON
- ▶ GEOSOL
- ▶ ORGAMIN- VF
- ▶ MUCIL
- ▶ ODOCURB
- ▶ B.G. CON

Message

Mr P.V. Krishnam Raju advice industry that we believe in Bio - security of the form and we as entrepreneur should fight against using Antibiotics for sustainability of Industry.

(Contn. from page 41)

shell off, Headless devein, Peeled/Deveined/ Tail-off shrimp, Headless shell on, easy peel shrimp, head on, Peeled/Deveined/Tail-on shrimp being produced at processing house. Zeal Aqua is having trading business of Seed, Feed and Medicines related to aquaculture.

Other activities

Besides aquaculture, his activities include: as a social worker he is the Founder Member and President of SAFA (Surat Aqua Farmers Association), Vice President of GAA (Gujarat Aquaculture Association), President of SGCC (South Gujarat Chamber of Commerce), Member of NASCA and Member of Surat CRZ Committee.

Annual turnover

Worldwide volume was 5 million tonnes and 22,500 crore in value in the year 2017, while volume of my company was 4000 tonnes in volume and Rs 180 crore in value in the year 2017, said Mr Navik.

His Contributions

He is having vast experience of more than 20 years which initiated to transform from trading to export which also helped aquaculture as there were less processing houses which helped farmers to sell their product.

Message

Mr Pradip Navik advised that Aquaculture is very lucrative business with high risk which has to be tackled very sensibly.

Gentle Bio-Sciences Pvt Ltd receives 'Best Upcoming Aquaculture Healthcare Company Award 2018'



G.N.V.S.S. Rambabu, M.V. V. Adinarayana Murthy and N. V. Suresh Kumar receiving Best Upcoming Aquaculture Healthcare Company Award 2018 from Ms. I. Rani Kumudini and Sandeep Kumar Sultania. M.A. Nazeer is also seen.

G.N.V.S.S. Rambabu, Director, Gentle Bio-Sciences Pvt. Ltd received 'Best Upcoming Aquaculture Healthcare Company Award 2018' at AI Awards function held in Hyderabad on October 9, 2018.

Gentle Bio-Sciences Pvt Ltd is a young and dynamic organization working in Aquaculture, Livestock and Poultry sectors. The people behind the project have expertise of over two decades in manufacturing and marketing of Aquaculture and Animal Healthcare Products. The core philosophy driving Gentle with product excellence through value addition. Our incessant drive to achieve product improvement, consistency and performance is perceptible through the activities, both manufacturing and quality assurance.

Gentle as a process for continuous development undertakes field trials of new and existing products to validate and support

future development, which is increasingly research driven. They believe that the greatest assets are the gifts, talents and abilities of the employees. Quality is the guiding principle in all aspects of their business. They shall abide by statutory, legal, environmental and all applicable regulations while carrying out their activities. Their registered office is based at Hyderabad and marketing office in Vijayawada.

Key Persons

Mr G.N.V.S.S. Rambabu, Managing Director

Mr M.V.V. Adinarayana Murthy, CEO

Mr N. V. Suresh Kumar, Director

Category of products

Total range of aquaculture healthcare products which includes Probiotics (Water, Soil and Feed), Minerals, Gas absorbers, Water Quality Enhancers, Plankton Boosters, Disinfectants, Oxygen improvers etc are being manufactured.

Sales & Distribution

Network

Company presently operating in Andhra Pradesh, West Bengal, Odisha, Gujarat, Tamil Nadu and Uttar Pradesh. We have a wide range of dealer network in all the above states. Presently operating with nearly 200 plus dealers, said Mr G.N.V.S.S. Rambabu.

Quality of products and services

We have 25 products in our range and each one is unique with value added features. All of our products are registered with CAA as antibiotic free inputs for aquaculture. We are the people to introduce nanosilver (Silvenex), nano mineral formulations (Synamin-FS), soluble silicon (Bloom-DS) for diatoms growth, non antibiotic herbal immunomodulator (MaxLife) etc., in aquaculture, he said.

Turning Point

Mr Rambabu informed that he started selling products from the age of 20 years with own ideology and plans, then gained knowledge of systematic marketing while working with Neospark

and administration, manufacturing experience while working with Suguna Group.

Best Practices

- We will create WIN-WIN situations in every moment with customers as well as employees.
- We trust in quality everywhere.
- We conduct "Annual Dealers Meet" every year for better communication and rapport with customers.
- We conduct "Annual Sales Meet" every year for employees in different places of India, in which we include personal development and technical training classes for better performance.

Message

Mr Rambabu said that the people whom I know in the industry are all working for the sustainability of aquaculture sector. The only thing I want to convey is that systematic and qualitative scientific approach only will make the industry healthy. There are no shortcuts for success. Only our best practices made us successful.

(Contn. from page 41)

2. Bhumi Nirman 'Best Fish Farmer Award 2009

3. Best Corporate L. vannamei Farm by MPEDA in 2013

4. Best Corporate L. vannamei Farm by MPEDA in 2015

5. Best Innovative Aquaculturist by MPEDA 2015

His Contributions

- Serving as General Secretary of Gujarat Aquaculture Association.
- Associated with SAP as

Founder Member and Executive Committee Member and as a speaker during Aqua India programs and regional one day workshops. At present serving in the capacity of Vice President

Message

Mr Saji Chacko advised stakeholders of Aquaculture sector that always think out of the box, be confident and innovative, and always be optimistic and practical.



Standing from left: Saravanan Babu, Partner, K. Ravi Kumar, Managing Partner, Golden Marine Harvest; K. Bhaskara Raju, Managing Partner, Sagar Aquaculture Pvt Ltd; Malluru Karthik, Managing Partner, Sri Biotech; Rama M. Babu, GM, Biostadt India Limited; K. Ravi Kumar, GM, Biostadt India Limited; Dr B. M. Hasan, DGM-Technical Sales and E. Narayana, Aqua Business Head, Anmol Feeds.

Sitting from left (middle Row): Pradip Navik, Director, Zeal Aqua Ltd; Ravi Kumar Yellanki, Managing Director, Vaisakhi Bio-Nutrition of AHD & Fisheries, Govt of Telangana; Ms I. Rani Kumudini, Chief Executive, NFDB; Dr. A.G.Ponniah, Former Director ICAR-CIFA; Devendra Kumar Chopra, Executive Director, SRIBS Biotechniqs Pvt Ltd; Ram Prasad, Director- Marketing, SDC Agrovet.

Sitting from left (bottom Row): Ajay Menon, GM – Marketing, Climax Synthetics Pvt Ltd; S.V. Durga Prasad, Regional Sales Manager, Kumar Reddy K, CEO, Reddy Drugs and Laboratories; L. Nand Kumar, Head Marketing, Synergy Biotechnologies; G.N.V.S.S. Tagoor Aqua Technologies Pvt Ltd; Anuj Kumar Tiwari, Regional Manager, Poseidon Biotech; M.V. V. Adinarayana Murthy, Managing Director, Bio-Sciences Pvt Ltd and Dr S. Thiyagarajan, Chief Technology Officer, Poseidon Biotech and Dr Babu Sudhakar.P, Managing Director, Poseidon Biotech.



... Managing Partner, SAFE Group of Firms; P. V. Krishnam Raju, Managing Partner, Biomed Techno Ventures; A.V. N. Prasad, K. Vidhubalan, Proprietor, Amritha Enterprises; Jiten Kharecha, Director, Century Aquaculture Products Pvt Ltd; V. Sridhar ... Pvt Ltd.

... Marine Pvt Ltd; M.A. Nazeer, Convener, Aquaculture CEOs Foun; Sandeep Kumar Sultania, IAS, Chief Secretary, Department ... CIBA & ICAR-NBFG; Etela Rajender, Finance Minister, Govt of Telengana; Amit Saraogi, Managing Director, Anmol Feeds Pvt ... Pvt Ltd and T. V. Srinivasa Reddy, Proprietor, Purna Sri Sai Aqua Feeds.

... Manager, Marine Leader Company Ltd; Shahenshah Hussain Khan, MD, Bashir & Washi Fish Co. Pvt Ltd & ISF Trading; Naresh ... S.S. Rambabu, Managing Director, Gentle Bio-Sciences Pvt Ltd; Dr P.V. Subramanyam Raju, Chairman & Managing Director, ... y, Director, Gentle Bio-Sciences Pvt Ltd; Brahmeshwara Rao, Shenglong India Ltd; N. V. Suresh Kumar, Sales Manager, Gentle ... g Director, SRIBS Biotechniqs Pvt Ltd.

Climax Synthetics Pvt Ltd receives 'Best Aquaculture Equipment Award 2018'



Ajay Menon receiving Best Aquaculture Equipment Award 2018 from Ms I. Rani Kumudini and Sandeep Kumar Sultania.

Mr Ajay Menon, General Manager – Marketing, Climax Synthetics Pvt Ltd received 'Best Aquaculture Equipment Award 2018' at AI Awards function held in Hyderabad on October 9, 2018.

Climax Synthetics Pvt Ltd was started in 1974 as a pioneer in the lining business in India. It maintained quality and time to time find out many applications in Agriculture, Aquaculture, Waste Management, Water Management and Infrastructure. It has its production units in Vadodara, Gujarat.

Promoters of the company are: Mr Khemraj Mundhra, Mr Pankaj Mundhra and Mr Pramod Mundhra. And other key persons are: Mr Ajay Menon, General Manager – Marketing; Mr Dilip Shah, Sr. Manager – QC and Mr Nirmal Naidu, Sales Manager.

We don't compromise on quality, we maintain the facility as per ISO 9001:2015 and strive hard to educate the customer on quality issues. We maintain total transparency with the customer, said Mr Ajay

Menon, General Manager – Marketing of the company.

All most all top corporates, construction giants and Govt. companies are using our equipments in Aquaculture. We cover all parts of the country in

“ We don't compromise on quality, we maintain the facility as per ISO 9001:2015 and strive hard to educate the customer on quality issues. We maintain total transparency with the customer. We cover all parts of the country in Aquaculture and we have more than 70 customers ”

Aquaculture and we have more than 70 customers, he added.

The company achieved an annual turnover of Rs 31 crore in 2017-18 in Liner business.

Turning Point

Mr Ajay Menon stated that we bagged India's first Municipal Landfill Project in Pune for dumping of Solid Waste. Since then we become the leading turnkey solution provider for the waste management. In Aquaculture we started 9 years back with pilot project along with ONAWAY Industries, Billimora, and now we are one of the leading suppliers all over the country. We like to be one of the leading brands in Liner business. We are planning for expansion for Geosynthetics products.

(Contn. from page 45)

year after year not only in India but also in other 27 countries in the Globe comprising Asia, Africa, Europe and South America. Last year they have crossed 100 Million USD globally. For more than 3 decades the company is exporting Aquaculture products, according to the company.

Biostadt aqua range products are well accepted by Shrimp farmers in many countries Like Vietnam, Philippines, Thailand, Iran, Tanzania, and Bangladesh.

Areas of expertise

- Reducing Feed Conversion Ration of Shrimp and Fish.
- Antibiotic alternatives for aquaculture.
- Increasing productivity and survival rates for proper pond management and feed efficacy.

Besides exports they have a notable presence, reputation and performance in the Domestic Aquaculture Healthcare Segment and a significant presence in the

Inspiration

In Aquaculture – we got inspired by Mr Saji Chako of ONAWAY Industries, who helped us to understand the application in Aquaculture and given free hand to us for all trials and testing in his farm, he said.

Message

In respect to Liner – We request the farmers and stakeholders to give importance to quality product, which will have long term benefits. We are proud to be part of Aquaculture industry, which is soon going to be number ONE in the world, Mr Ajay Menon told.

Agro Chemical Sector.

Biostadt India Ltd is having a turnover of around \$10 million annually.

Company aims to have remarkable presence in all the aquaculture farming countries in the world. Safety of the customers, both external and internal is our Top Priority. All the Production Facilities confine to the latest ISO standards and GMP, Said Mr Khorakiwala.

Precautions to avoid rejection of Aquaculture products export

We strictly have 100 % traceability in all our RM procurement, production and manufacturing processes and facilities. We are the pioneers in promoting the Antibiotic Free aquaculture and products, he stated.

Message

Mr Juzar Khorakiwala said that sustainability is the Key. Collective and Responsible Scientific Aquaculture is the need of the industry.

Sagar Aquaculture Pvt Ltd awarded with "Best Aquaculture Aerator Award 2018"



A. V. N. Prasad receiving Best Aquaculture Aerator Award 2018 from Ms I. Rani Kumudini and Sandeep Kumar Sultania. M.A. Nazeer is also seen.

A.V.N. Prasad, Sagar Aquaculture Pvt Ltd received 'Best Aquaculture Aerator Award 2018' at AI Awards gala evening held in Hyderabad on October 9, 2018.

Sagar Aquaculture Pvt Ltd was founded in Rajkot, Gujarat in 2013. They started to manufacture Aerator Impeller only and today they make 100% Made in India Aerator and other equipment. Sagar Aquaculture is the first company who started to manufacturer full aerator in India. Before 2013 it was only imported from China or some parts are imported from China and assembled in India. The company brought advanced aquaculture technology and products to main land and proactively developed the progressive aquaculture market, pouring new activity to domestic aquaculture. Besides, it continuously created new technology of aquaculture machinery and promoted new concept of aquaculture projects.

For better understand of aquaculture company, Sagar Aquaculture started its own aquaculture practice in 2014 and started 5 acre research project in Bhavnagar

for better understanding of aquaculture and importance of aeration system in aquaculture. Also started to research on how to make more profitable and high-tech aquaculture to serve model in aqua industries.

Today, the company is not only one of the first leading manufacturing companies of paddle wheel aerator in India, but the company also has a significant presence in Nepal, Bangladesh and Srilanka. It is the India's first organization to provide products not only in India but also abroad. Sagar has 60,000 square feet production and warehouse facility with 7,000 square feet for office area and 15,000 square feet for labour residence at Ardoi village.

Mr Yogesh Kanjibhai Sagpariya is the Managing Director of the company. He was born and brought up in Ribda village near Rajkot city. After his graduation in 2013 he entered in his father's fishing float business. Mr Yogesh always believed in innovation and wanted to do something new, so he imported water transparent technology and applied on hardware goods like handle, and this

concept hit all over India. Chinese company also copied it.

Mr Yogesh Patel always believed in making in India and grow India, as majority of Chinese or Taiwan products are sold all over the world, specially aerator was mostly imported from China before 2011. Nobody dared to manufacture these products in India and products are imported from China. many farmers don't get spare parts when they need. So, Mr Yogesh decided to take this project as a challenge and started manufacturing parts, and within one year the company decided to start full aerator manufacturing on their own. This way, we become India's first total in house aerator manufacturer. Sagar Aquaculture captured more than 40% business of aeration.

We want to export our products in the world and compete with Chinese companies. We did participate in 5 international exhibitions and now-a-days we export our products to 10 countries. The company has Rs 40 to 50 crore turnover annually, said Mr Yogesh Patel.

Category of Aerators and other products

- i. 1 Hp Paddle Wheel Aerator(Available in Single Phase & Three Phase)
- ii. 2 Hp Paddle Wheel Aerator(Available in Single Phase & Three Phase)
- iii. 3 Hp Paddle Wheel Aerator
- iv. Hp Spiral Aerator
- v. Long Arm Paddle Wheel Aerator (8 Paddle)
- vi. 2 Hp Submersible Aerator

- vii. Roots Blower (Available in 5, 7.5 & 10 Hp with Motor/Diesel Engine)
- viii. Mud Lifting Machine
- ix. Solar Auto Feeding Machine
- x. 20 Feet Long arm Paddle Wheel Aerator
- xi. 20 Feet Long arm Spiral Aerator
- xii. Fishing Floats

Acceptance and Satisfaction

As per one survey, people who believe in quality they like our products mostly. Who don't have much knowledge about long time aquaculture and only focus on price they might be not satisfied with us. Our dealer and distributor network is same in last five years, and our repeat customer ratio is 80% which shows their acceptance and satisfaction level is really good, stated Mr Yogesh.

Give neat and clean environment with best basic facility to work with fresh mind. By continues R&D we develop every year new products which help us most to move our company development, he said.

Future plans

Sagar's goal is to set market in worldwide and we all are working on it. May be in future our company comes with other products which are used in aquaculture industries like feed, processing, medicine etc, he added.

Message

Mr Yogesh advised that we have to educate farmers about minimum standard protection facility of electric supply and also maintain products atleast once in a year after finishing crop culture, so the product's life becomes more than two times.

Century Aquaculture Products Pvt Ltd gets 'Best Aquaculture Aerator Award 2018'



Jiten Kharecha receiving **Best Aquaculture Aerator Award 2018** from **Ms I. Rani Kumudini** and **Sandeep Kumar Sultania**. **M.A.Nazeer** is also seen.

Mr Jiten Kharecha, Director, Century Aquaculture Products Pvt Ltd, received Best Aquaculture Aerator Award 2018 at AI Awards function held in Hyderabad on October 9, 2018.

Century Aquaculture Products Pvt Ltd is a leading manufacturer of Paddle Wheel Aerator, Submersible Pump Aeration, Root blowers with Motor and Diesel Engines, Pumping Set with Motor, Pumpset with Diesel Engine, Sludge / Mud Pump, Feed Mixing Machine, Stocking Aerator, Airblower, Openwell and other products as per customers requirement. The company's products are known for its quality, durability & long lasting satisfactory services, said Mr Dharmesh Bhai Patel, Managing Director.

Its warehouse is located in Rajkot, Surat and Bhimavarm.

The company is equipped with latest modern machinery for manufacturing & testing of aeration products. Our team of experienced engineers and technical experts support us in our

endeavor for qualitative products manufacturing. We are proud owners of recognition from our customers and dealers, being the competent manufacturer for excellence products, which is symbol of their trust and faith with us, said Mr Dharmesh Patel.

Acceptance and satisfaction of products

We are getting repeated orders from the customers which clearly says that they are fully satisfied with our products. Our market share is 80% in Gujarat and 40% in India. Around 600 Customers/farmers are using Aerators in India, he said.

Besides aerators, Century is also manufacturing Diesel Engine, Alternator, Genset & Submersible Pump, Pump with Motor and Monoblock Pump. Company is having future plans to provide best aeration product at reasonable rate and power saving.

Message

Mr Dharmesh Patel advised to use good quality seed, feed and aeration to get 100 % success.

Bashir & Washi Fish Co. Pvt Ltd & ISF Trading Wins 'Best Aquaculture Products Promotion Award 2018'



Shahenshah Hussain Khan receiving **Best Aquaculture Products Promotion Award 2018** from **Sandeep Kumar Sultania**. **Ms I. Rani Kumudini** is also seen.

Mr Shahenshah Hussain Khan, Managing Director, Bashir & Washi Fish Co. Pvt Ltd & ISF Trading received Best Aquaculture Products Promotion Award 2018 at AI Awards gala evening held in Hyderabad on October 9, 2018.

Bashir & Washi Fish Co. Pvt Ltd & ISF Trading are Surat based firms, which are engaged in aquaculture activities in Gujarat. They are engaged in shrimp raw material supply, all types of prawn and fish retailing, shrimp aquaculture products trading and shrimp farming. They supply inputs such as shrimp feeds, shrimp seed, probiotics and medicines for aquaculture.

Bashir & Washi Fish Co. was initially started by Mr Bashiruddin Khan as a retail fish and prawn supplier in 1990. His younger brother Mr Shahenshah Khan, an under graduate joined his brother's business in 1993 which had an annual business of Rs 25 lakhs and in 1995 Mr Shahenshah took the management of the family business and the company started growing

with expansion rapidly.

Mr Shahenshah M. Khan is the Managing Director of the company. He was born in a small town Jamdashahi of Uttar Pradesh. His father was doing agriculture farming.

In 2013 Vannamei entered into Indian aquaculture sector and it was the turning point for the growth and development of our company. ISF Trading entered into shrimp trading in 2014 with trading of Feed, Seed, Medicine, Aerators and Equipment. The group is dealing altogether with 34 companies products in different segments of aquaculture industry.

Group Activities

1. Bashir & Washi Fish Co. Pvt. Ltd.
 - Dealing with shrimp and fish raw material purchase and sale.
 - All kind of prawn and fish retailing.
2. ISF Trading
 - Dealers of seed, feed, probiotics, aerator and equipment.
 - Shrimp Farming.

(Contnd. on page 55)

Marine Leader Company Ltd receives 'Best Shrimp Hatchery Feed Supplier Award 2018'



S.V. Durga Prasad receiving Best Shrimp Hatchery Feed Supplier Award 2018 from Ms. I. Rani Kumudini and Sandeep Kumar Sultania.

Mr S.V. Durga Prasad, Regional Sales Manager, Marine Leader Company Ltd received Best Shrimp Hatchery Feed Supplier Award 2018 at AI Awards function held in Hyderabad on October 9, 2018.

Marine Leader Co. Ltd is a manufacturer and supplier of inputs for shrimp and fish aquaculture. It was founded in 2000, based on experience in the marine aquaculture industry and it has recognized the potential for technology development and to increase efficiency in good and sustainable farm management.

Marine Leader is committed to developing the technology that the team of researchers have developed continued development in the field of experiments. Including opportunities and commercially feasible in terms of production and marketing, such as

- Production Factors For farming on the farm.
- Probiotics in aquaculture
- Water Quality Test Kit
- Diagnosis of shrimp virus (WSSV and YHV)

- Shrimp broodstock and other aquatic animals
- Raw materials for animal feed production

Company has its production unit situated in Bangkok, Thailand. Different segments in aquaculture sector like Hatcheries, Farms, Nurseries and Laboratories will use the products. Around 100 hatcheries in TN are using Marine Leader products with other hatcheries located in Pondicherry, Nellore, Ongole, Kakinada, Amalapuram, Vizag, Orissa, West Bengal, Maharashtra, Gujarat and Goa.

Category of products being sold

- Shrimp hatchery feeds
- Hatchery speciality products
- Maturation diets
- Nursery feeds
- Grow out farm probiotics and
- WSSV Test kits and other test kits

Mr S. V. Durgaprasad is Regional Sales Manager of Marine Leader Company

Ltd. He was born and brought up in Guntur, did his post graduation in Commerce from Nagarjuna University, and Master in Business Administration (MBA) from Pondicherry University with Marketing as the specialization and entered into aquaculture field in 1994 in Aquastride Biotech Ltd, Chennai, as importer of aqua inputs of more than 400 products in Indian shrimp industry. Presently settled in Nellore, AP.

He is having 24 years of experience in aquaculture. He worked for six years in ABL Biotech and 16 Years in Goldcoin Biotechnologies SDNBHD, Malaysia.

Marine Leader came with new innovative products which are Bio-Omega, HydroMAC, Novobiotic Plus, Bio-MPL & Larvita ZMP Feeds, TRANSSAFE, Vetatit, DHA Algae Gold

(Contn. from page 54)

Promoters

1. Shahensha Husain M. Khan
2. Samsuddin M. Khan
3. Bashiruddin M. Khan
4. Wasiuddin M. Khan

Achievements

- In 2008 Bashir & Washi Fish Co. become Private Limited Company.
- In 2016 ISF Trading got India's Best Feed Dealer Award Rank-2 from Abis Exports India Pvt Ltd (IB group)
- In 2017-18 the group achieved turnover of Rs 300 crores.

Coming with Processing Plant

Bashir & Washi Fish Co. Pvt Ltd & ISF Trading Group are working to setup shrimp processing plant in Taloja, Mumbai with 50

etc antibiotic free products which got registered officially by CAA. In coming days, they are going to introduce hatchery and nursery technology introduction with the success of Thailand / Vietnam Aquaculture Model.

In Shrimp Hatchery Feed market, company's market share is around 12% and overall 750 Millions.

Future Plans

Marine Leader Co would like to introduce technically developed concept of nursery system in Thailand and most advanced nursery system in Vietnam. Their target is to keep the company in top position in India.

Role of a Shrimp Hatchery Feed Supplier

Price, Quality and Performance are the three main aspects one should look as a supplier, he stated.

tonnes processing capacity. Construction work is in progress and it is expected to come into production by 2020, informed Mr Shahensha.

Motivation

At the advice of Dr Manoj Sharma we started trading of feed, seed, medicine and other aquaculture equipment and we performed well in our business, he added.

To make the Group as a Good Brand

We are good in purchase of raw material and we wish to have an association with exporters from any part of the country. We want to make our group as a good brand for quality and trust in aquaculture industry in South Gujarat, stated Mr Shahensha.

P. Ram Prasad, Director - Marketing, SDC Agrovet (I) Pvt Ltd Wins 'Best Marketing Man in Aquaculture Award 2018'



P. Ram Prasad receiving Best Marketing Man in Aquaculture Award 2018 from Ms I. Rani Kumudini, Sandeep Kumar Sultania. M.A.Nazeer is also seen.

Mr P. Ram Prasad, Director - Marketing, SDC Agrovet (I) Pvt Ltd received Best Marketing Man in Aquaculture Award 2018 at AI Awards gala evening held in Hyderabad on October 9, 2018.

Mr P. Ram Prasad was born in Eluru, West Godavari District, A.P. He did B.Sc. from Vivekavardhani College, Hyderabad. He lives with his wife, one son who is working in Samsun Group, R.F. Engineer, U.S.A and a daughter studied B.Sc.

He started career as Veterinary Service Representative in Srin Biologicals and later shifted to Ventri Biologicals in Venky's group as In-charge of Animal Healthcare Products and Poultry Vaccines from 1986 to 1989. He then worked as Regional Manager in Alembic for 9 years. Joined as Professional Service Representative and elevated as Area Manager, later again promoted as Regional Manager taken care of Aqua, Poultry and Veterinary operation from 1989 to 1996.

He became Marketing Manager in 2003 and had been elevated as National

Business Head taking care of all India Aqua and Poultry operations.

Presently Mr Ram Prasad is the Director-Marketing in SDC Agro-Vet (India) Pvt Ltd. He controls 35 members all India team which include technical members of aquaculture ranging from M.Sc. Fisheries, Ph.D's and Diploma in aqua.

He has a total experience of 32 years in livestock industry, 17 years in poultry and 16 years in Aquaculture as well as Poultry.

Other activities

As a Non - Technical person he promoted the products of multinational companies like, Bayer, Elanco, Lohmann, Dupont, Phelio Lesaffere, Pancosma, AWP etc. He also gives motivation classes for Fisheries students.

Role of Marketing Man

Answering to a question about the role of Marketing Man in aquaculture, Mr Ram Prasad said, aquaculture is a vast industry with Rs 45,000 crores turnover. Though it is good in volumes it is not that much technically equipped, most of the business organised by small and medium farmers.

(Contnd. on page 61)

Ravi Palanisamy, Sr VP, The Waterbase Ltd receives 'Best Manager in Production in Aquaculture Award 2018'



Ravi Palanisamy

Mr Ravi Palanisamy, Sr. Vice President, The Waterbase Ltd, received Best Manager in Production in Aquaculture Award 2018 at AI Awards function held in Hyderabad on October 9, 2018.

Mr Ravi Palanisamy was born in Salem, Tamil Nadu. He did B.Tech from Coimbatore Institute of Technology, Coimbatore. He lives with his wife and two children - one pursuing Masters Education (Mech Engg) in Germany and second one studying Intermediate.

He started his career with Lipton India Ltd as Officer handling plant maintenance, later joined The Waterbase Limited (TWL), Nellore. He is having total 28 years experience in Feed Milling Industry Operation, spread in Poultry & Cattle for 3 years and Aqua for 25 years. He has future plan to Serve the industry with cost-optimised solutions for the lowest possible shrimp production cost.

Expertise Areas

Plant Management & Administration, Quality

Assurance & Control, Research & Development, Establishment of new projects and Vendor development & projects for rendering products.

His Contributions

Development of India's first Vananmei feed, development of farm care products, establishing international standard R&D centre, conducting various R&D trials aiming for benefiting the company and the industry and leading to source & acquire international expertise needed for the company and the industry.

Role of a Production Manager

Run the operation (self & team) fully quality conscious centric and implement procedures for cost-optimisation. Finally customer (farmer) should believe / confident that products which he buys from you are flaw-less, said Mr Ravi Palanisamy.

About best practices implemented in his profession as a Production Manager, Mr Ravi said:

1. Standardisation of operation procedures in all spheres of a feed mill,
2. "Own your plant" concept and
3. Skill development of the team: one of the base for company's growth

His Experience in Aquaculture

- Part of project team to set-up Waterbase in 1992 and Lead of TWL's second feed mill project in 2014.
- Introduction of first time smallest size pellet in India in 1996 (1.8 mm)
- Stellar role in development

(Contnd. on page 57)

Dr S. Thiyagarajan, Chief Technology Officer, Poseidon Biotech receives 'Best Aquaculture Scientist Award 2018'



Dr S. Thiyagarajan receiving Best Aquaculture Scientist Award 2018 from Ms I. Rani Kumudini. Sandeep Kumar Sultania and M.A. Nazeer are also seen.

Dr S. Thiyagarajan, Chief Technology Officer, Poseidon Biotech received Best Aquaculture Scientist Award 2018 at AI Awards gala evening held in Hyderabad on October 9, 2018.

Dr S. Thiyagarajan was born and brought up in Nagapattinam district, Tamil Nadu. He did M.Sc in Zoology in 1995 from Annamalai University, Tamil Nadu. He started his carrier in S&S Industries and Enterprises Ltd, Tamil Nadu as a Lab Assistant. During that period he used to help farming activities with the Farm Technicians. Sampling, Feed monitoring, Feed fixing etc are the activities he learnt in that period. In February 1993 he joined as Officer - Farm in Shiram Marine Harvest Ltd, TN. A section of the shrimp farm was given to him and *P. monodon* stocking was done during that period. Sea water was used for culturing the shrimps. In his section he got the average biomass of 4mt/Ha was harvested regularly in spite of heavy water shortage. After that the farm was taken over by Amalgam Marine Harvests Ltd.

He joined Poseidon

Aquatic Living System, a consultancy firm started by Mr R. Srinivasan and Mr S. Muthukaruppan who are the partners of Poseidon Biotech. During that period he worked in many farms in A.P, Orissa, Maharashtra and Tamil Nadu. He got very good farming exposure in many climatic conditions. In 2003, he was assigned to co-ordinate with farm and probiotics R&D division. He is the key person for obtaining DSIR recognition from Department of Science and Technology, Government of India, New Delhi and ISO 9001:20015 Certification.

He also worked as a Principal Investigator and Project coordinator of Department of Biotechnology (DBT), Govt of India Public - Private Sponsored Project (Small Business Innovative Research Initiative SBIRI scheme) (2007 - 2010 - Project Cost 95.0 Lakhs). Poseidon products got registered in Indonesia, Vietnam and Malaysia. He gave various presentations and seminars about their products in various states of India, Indonesia, Vietnam and Malaysia.

He is the only industrial representative for the sub-committee for fixing

standards of Probiotics used in Coastal Aquaculture Authority (CAA), Govt of India. A very good technical team was build up in the company which is a main reason for the company's success. Presently he is working as Chief Technology Officer at Poseidon Biotech, 23 years old company, which is the next position to CEO. He is having 27 years experience in farm management and product development.

His Contributions

- Achieved 4 mt/Ha of *P. monodon* without aerators at M&M Harvests, Tamil Nadu (1996-97)
- Achieved 5 mt/Ha of *P. indicus* at SMHL, Poompuhar, Tamil Nadu with low production cost (Less than Rs 110) (1994-1995)
- Co-ordinated with IT Department and developed farm operations software at SMHL, Poompuhar (1994 - 1995)
- Produced 3.5 mt /Ha of *P. monodon* at SADA Aquatech, Tamil Nadu

(Contn. from page 56)

- and introduction of India's first Vannamei feed (BAYWHITE) in 2009
- In-house process development on by-product meals & hydrolysed additives
- Setting up and management of R&D unit
- Lead to obtain accreditations like ISO, BAP, HACCP
- R&D Trials on new products development, ingredients efficacy testing since 2007
- Securing contract R&D trials

with FCR 1:1 (1996-1997)

- Developed and commercialised many aquaculture products at Poseidon Aquatech Pvt Ltd, Poseidon Biotech, Chennai.
- Obtained In-house (R&D) certificate for the present company from Department of Industrial and Scientific Research (DSIR), Government of India.
- Obtained ISO 9001:2008 Certification (scope: Design, Manufacture and supply of bacterial culture, feed additives, Degasifiers, fungicides, sanitizes and parasite eliminators.)
- Working with Coastal Aquaculture Authority (Govt of India) for fixing standards of Probiotics used in coastal aquaculture (only Industrial Representative.)

Motivation / Inspiration

Dr S. Thiyagarajan said that Mr R. Srinivan, CEO and Mr S. Muthukaruppan, COO, Poseidon Biotech encouraged me from the beginning.

He advised that all the stakeholders should follow any one of the guidelines of GMP, Responsible Aquaculture Practices, HACCP Guidelines, Best Aquaculture Practices etc.

- Establishing association with Institutes and industry expertise

His Message

- ▶ Implement sustainable practices as today's little spending will give scope for longevity
- ▶ Preserve the potential to keep India on top of aquaculture production
- ▶ Keep work & contribute towards finding simple solutions
- ▶ Please consume fishery products in-house and inculcate others, for self-sustainability.

Dr B. M. Hasan, DGM–Technical & Sales, Anmol Feeds gets 'Best Aquaculture Science Author Award 2018'



Dr B. M. Hasan receiving Best Aquaculture Science Author Award 2018 from Ms I. Rani Kumudini and Sandeep Kumar Sultania. M.A.Nazeer is also seen.

Dr B. M. Hasan, DGM–Technical & Sales, Anmol Feeds Pvt Ltd, received Best Aquaculture Science Author Award 2018 at AI Awards function held in Hyderabad on October 9, 2018.

Dr Hasan belongs to Calcutta, West Bengal and did post graduation in Fishery Science (Zoology) in 1992 from University of Kalyani. He started pursuing research on applied aquaculture as SRF under Prof. A. Kaviraj on ICAR scheme (1992-94), and completed his Ph.D on 'Sustainable shrimp aquaculture techniques' from NSOU, Kolkata in 2013. He started his career in shrimp farming (MPEDA sponsored demonstration culture) at Arbelia, 24 Pgs (W.B.) as Technical Supervisor in 1994, and joined Onaway Industries Ltd, Bilimora, Gujarat (previously ABG Foods Ltd) in 1994-1999. He was instrumental to manage, develop and implement BAP in NAQUA to reach its incredible success in production and export in different senior managerial positions (Production

operations, Project, Lab) from 1999 to 2014. He also accomplished benchmark performance in application of advanced techniques in Saudi Fisheries Company, KSA (2014-16) working as Head-operations Manager handling shrimp and fish farms.

He worked in PVS Laboratories Ltd as General Manager responsible for all India and overseas for technical and marketing of aqua healthcare products and feeds in 2016-17.

At present he is employed in Anmol Feeds Pvt Ltd, Kolkata, as DGM-Technical and Sales. He is heading the technical side of fish and shrimp feeds to be launched soon. Other prime roles are business extension, marketing and branding of products throughout the world, and India in particular by its quality and performance; development of new products in line with challenges towards aqua production.

Dr Hasan is known for his vast aquaculture experiences in India and abroad in different fields

(Contnd. on page 59)

Anuj Kumar Tiwari, Regional Manager, Poseidon Biotech receives 'Best Sales & Customer Service in Aquaculture Award 2018'



Anuj Kumar Tiwari receiving Best Sales & Customer Service in Aquaculture Award 2018 from Sandeep Kumar Sultania.

Mr Anuj Kumar Tiwari, Regional Manager, Poseidon Biotech received Best Sales & Customer Service in Aquaculture Award 2018 at AI Awards gala evening held in Hyderabad on October 9, 2018.

Mr Anuj Kumar Tiwari was born in Tikamgrah, Madhya Pradesh. He did M.F.Sc. from Barkatullah University, Bhopal, M.P. He lives with father Mr Kalika Prasad Tiwari a retired Principal, Govt. Higher Secondary School, mother Mrs Krishna Tiwari, Teacher in Govt. Middle School, wife Mrs Monika Tiwari, Asst. Professor in Govt College of Daman and Son Nikhil Tiwari studying in class II.

He started career in 2007 as Farm Technician at West Coast F2 Ltd Farm at Bhat site near Bilimora, Gujarat. After one year he left farming and joined Poseidon Biotech in Marketing in 2009.

Present areas of his operations are Karnataka, Goa, Maharashtra, Gujarat, Daman & Diu, Haryana, Punjab, Rajasthan and Uttar Pradesh.

Best Practices

We are providing all technical aspects to farmers regarding aqua healthcare, Best Management Practices, Disease Management and Biosecurity Programmes. Time to time we are organising awareness programme regarding new challenges in culture practices. We try to update them with market situation. We have Aqua Professionals team who have been working 24X7 to solve the farmers problem. We are practically showing to farmers how probiotics and other products will work, said Mr Anuj Kumar.

Valued Customers

NN Aquatech, Krishiv Aquatech, Nandini Enterprises, Neer Aqua Export Pvt Ltd, Kartavi Aquatech, Gujarat Gold Aqua, Urvara Aqua Farm, Roshan Enterprises, Manmeet Aqua Farm and Ananya Aqua Products are our few important customers. We are serving to more than 1500 shrimp pond 1000+ Hac. Area, he said.



Acceptance & Satisfaction level of his services

In my tenure of service not a single farmer left any of our products, they are continuing with us. But we always work on their feedback to improve ourselves. When I started marketing we were doing nearly Rs 10 lakh business, now we are leading the market with Rs 17 crore market. We are rendering free services to more than 500 farmers, 10 corporate and two hatcheries in Gujarat, stated Mr Anuj Kumar.

Besides sales & customer service in aquaculture, he started a Blood Bank / A Call Center in Gwalior by name Raktdan Mahadan Samiti for free donation of blood and platelets along with his friends now they reach to 90 cities in our nation.

Role of a Sales Person

Sales person is like a bridge between company, dealer and farmers. Sales

(Contn. from page 58)

like Technical operations, Production, R&D, QA, Sales and Marketing. He served for a decade in world's largest vertically integrated aquaculture project (National Aquaculture Group, KSA) as one of key players to establish it as top global organization (a 5-star BAP certified company).

He has published more than ten articles in national and international journals. He formulated and edited many SOP, manual, brochure, guide book related to applied aquaculture. He regularly pens down in different magazines/journals on the important topics focused on optimum yield, business stability, new technology

persons will always try to maintain relation between them. A sales person not only selling product as well as he maintains farm and give technical support to farmers. Marketing in shrimp farming its totally a different practice, we have to face many challenges like sales target, show the product result to farmers and payment collection from the dealers end. A well professional marketing person is a key to success for everyone to run the aqua industry smoothly, Mr Anuj Kumar told.

I got motivation from Mr K. Nityanandam. He always supports me and encourages me in my Marketing ideas. My future goal is to achieve 30 % market share in West coast zone, he added.

Advice to farmers

There is no shortcut for successful farming. Farmers should maintain basic facilities in the farm for successful farming.

and profitability. He attended many conferences, seminars, workshops and presented on advanced trends of aquaculture in different countries.

Milestones in career

Worked in top global company (NAQUA) with 20 MT/ha production, developed and implemented best up to date technology and also in sales and marketing, said Dr Hasan.

Dr Hasan received lot of motivation from Dr Santhanakrishnan, Ex Joint Director, MPEDA. He suggested the stakeholders to use high biosecurity, SPF, effluent treatment, technology transfer in aquaculture.

Amritha Enterprises awarded with 'Best Healthcare Products Distributor Award 2018'



K. Vidhubalan receiving Best Healthcare Products Distributor Award 2018 from Ms I. Rani Kumudini and Sandeep Kumar Sultania.

Mr K. Vidhubalan, Proprietor, Amritha Enterprises, received Best Healthcare Products Distributor Award 2018 at AI Awards function held in Hyderabad on October 9, 2018.

Mr K. Vidhubalan was born in 1973 in the rice bowl district of Tamil Nadu. He was a soul army in his family as he lost his father when he was very young. He did his graduation in Biology and entered aquaculture industry decades before. Hence, he can be called as the 'Pioneers in Aquaculture Industry'. He worked in a corporate company and later himself became an entrepreneur by developing his own enterprise, Amritha Enterprises on October 1996 in Nagapattinam, Tamil Nadu.

Amritha Enterprises & VMS Aqua Life are supplying healthcare products in Tamil Nadu, Gujarat, Maharashtra, Andhra Pradesh, Karnataka and Kerala. They have warehouse facility with the size of 2,500 sq.ft.

Vidhubalan is a down to earth person, liked by one

and all, known for his honesty, simplicity, hard work and very high degree of social responsibility. He is a strong devotee to social activities and always there to help the needy. By his virtue, his family also has adopted the same way. Hence, the entire family is a socially responsible to help the needy at all the times.

Acceptance Level

Our products have very good acceptance level as we are supplying eco-friendly, antibiotic and steroid free, result and profit oriented products registered with Coastal Aquaculture Authority of India (CAA). Our customer network is growing year after year due to the commitment to quality and enthusiastic Technical Services Team, said Mr Vidhubalan.

In 2017-18 the company's Turnover was Rs 7.5 crores. My success in P. Vannamee culture remains as a turning point to do more and grow well, he said. He advised the stakeholders to avoid Antibiotics and use probiotics to save aquaculture.

C.P. Aquaculture (India) Ltd wins 'Best Shrimp Feed Miller Award 2018'



Mr N. N. Mohan Das, Vice President, C.P. Aquaculture (India) Ltd

(Contn. from page 56)

The role of Marketing Man here is not only selling, he has to give technical support to the farmers and help in getting good crop. He has to share different advanced technologies in aquaculture so that he can easily make volumes by giving a complete protocol of the products depending on the species. Creating a need to the product is more important than selling a product. Giving good product for getting successful crop to the customer is more important. Close monitoring and updating with better management practices and exposure to International aquaculture practices will help in getting good results in the culture.

He comes from a middle class family starting his earnings from 10th class as a Shop Boy, later to a Paper Boy, Tutition Master etc. He came up with hard work. He made his son do M.S and working in USA. Our CEO Mr Y.V. Rao's vision is always 20 year ahead and i have his impact on my successful life.

Change for Better Prospects
My fellow professionals should be hardworking, technically sound, service oriented, genuine, promoting good products to the farmers, helping them to get good crop as their entire family is depending on this culture. I feel that farmers should not to be greedy and should go for Better Management Practices in Aquaculture, take the help of good and genuine company peoples' help to get good crop, not to rely on persons who come to provide service freely. Farmer is ready to spend Rs 5 lakh for culture, but hesitate to spend Rs 20,000 for technical person who can give them Rs 10 lakh profit. He has to take preventive measures and do successful culture. Do not increase your culture area, improve better management practices, and do not pollute ponds & creeks, give good seed, good feed and inputs to the culture. Get alternative to antibiotics, SPF seed for Monodon and Vennemai and try to come up with multi fish species as alternative to shrimp.

Rajan Devamoni, Technical Manager, Sheng Long Biotech awarded with 'Best Technical Services Provider Award 2018'



Brahmeshwara Rao receiving Best Technical Services Provider Award 2018 on behalf of Rajan Devamoni from Ms I. Rani Kumudini and Sandeep Kumar Sultania. M.A.Nazeer is also seen.

Mr Rajan Devamoni, Technical Manager, Sheng Long Biotech India Ltd received Best Technical Services Provider Award 2018 at AI Awards function held in Hyderabad on October 9, 2018.



Mr Rajan Devamoni, Technical Manager, Sheng Long Biotech India Ltd

Mr Rajan Devamoni did UG from Sivanthi Athithanar College at Tuticorin in 1980-1983 and started the master degree from M Sc coastal aquaculture in Annamalai University at Chidamparam in Taminadu. He had 28 years of experience in the field of aquaculture. 20 years in farming sector and 8 years in the feed and technical

& market. He joined as a Technical Manager in Sheng Long Biotech India Limited in 2014.

Sheng Long Biotech India Pvt Ltd is a subsidiary company of Guang Dong Haid Group, which is specialized in aquatic feed and premix manufacturing, fish and shrimp breeding and animal health products. The integrated aquaculture group provides outstanding technical services to the end-users. Presently Haid Group owned around 120 subsidiaries and one research and development centre in India. The company is located at Annanagar, Chennai.

Mr Maple Hung is the Chairman and head of the division in India and overseas operation. Mr Kumaresan is the head of the Indian marketing team. Mr Kiran, Mr Baskaran and Mr Panda are the Regional Managers in Indian marketing team. Mr Rajan looks after the technical services in Tamil Nadu.

(Contnd. on page 62)



Dr P.V. Subramanyam Raju, CMD,
Tagoor Aqua Technology Pvt Ltd
receives
**'Best Corporate Fish
Farmer Award 2018'**



Dr P. V. Subramanyam Raju receiving Best Corporate Fish Farmer Award 2018 from Ms I. Rani Kumudini and Sandeep Kumar Sultania. M.A.Nazeer is also seen.

Dr P.V. Subramanyam Raju, Chairman & Managing Director, Tagoor Aqua Technology P Ltd, received Best Corporate Fish Farmer Award 2018 at AI Awards gala evening held in Hyderabad on October 9, 2018.

Estimates show that global per capita fish consumption has increased two fold since 2005. Globally, in 2015, fish provided 6.7 per cent of all protein consumed by humans as well as offering a rich source of long-chain omega-3 fatty acids, vitamins, calcium, zinc and iron. Projections show that demand for fish and fish products will increase at a CAGR of 30% year over year. To capture this everlasting demand for fish and to become a responsible nutrition stake holder 'Tagoor Group' has ventured into fisheries sector in the year 2009 with a few acres on inland fish ponds. In less than 3 years it has tripled its production capacity by adopting best management practices available.

Currently, Tagoor aqua fisheries division is spread over 1500 acres with production capacity of 1500 metric tons per month. Our team has always strived to increase productivity and sustainability in aquaculture. It has developed automated boats to sprinkle the feed to fish without any intervention of human labour. It has also developed conveyor belts to directly bring the harvested fish to ice boxes from pond water without any human touch. Many other methods and processes have been developed in monitoring the water quality parameters, health and meat quality of the fish, said Dr P.V. Subramanyam Raju.

After seeing success in fish farming, we started seed hatcheries in Andhra Pradesh. As the seed were unable to sustain local waters, to fill this void in aquaculture supply chain, the group started its hatchery division in the year 2012 with technical expertise and experience gained from fish farming. It has struggled for three years to successfully

develop Pangasius fish seed that can sustain local waters, changes in climate and has a high yield. It has consecutively evolved as largest inland producer of pangasius fish seed in India. The group always maintains a healthy fish brood stock aging more than 5 years for better yields. Apart from pangasius, hatcheries

division also produces seed of Roop Chand.

Currently, Tagoor Aqua Hatcheries Division is a leader in Andhra Pradesh in terms of market share. It caters to around 10,000 farmers in states of Andhra Pradesh, Telangana, Gujarat, Karnataka, Kerala, Odisha and Tamil Nadu.

K. Bhaskara Raju, Managing Partner,
SAFE Group wins
**'Best Corporate Shrimp
Farmer Award 2018'**



K. Bhaskara Raju receiving Best Corporate Shrimp Farmer Award 2018 from Ms I. Rani Kumudini and Sandeep Kumar Sultania. M.A.Nazeer is also seen.

Mr K. Bhaskara Raju, Managing Partner, SAFE Group of Firms received Best Corporate Shrimp Farmer Award 2018 at AI Awards function held in Hyderabad on October 9, 2018.

Mr Kanumuri Bhaskara Raju started shrimp cultivation in 2011 with six acres. After knowing the potential in the field he has gone for rapid expansion and started SAFE – Shrimp Aqua Farms Elite. SAFE has established itself as one of the prominent producers of L.Vannamei shrimp in the state of Andhra Pradesh, India.

Bringing together a team of experienced professionals

across sectors, SAFE has adopted systems and structures of organisational management tweaked specially to cater the aquaculture farming. This enabled the management to plan and execute development of new farms at rate earlier not witnessed in the industry while ensuring synchronized operations.

With a vision to corporatize the farming ecosystem, through early adoption of technology and best management practices, SAFE expanded its operations very rapidly. Currently, our shrimp farms are spread across 618 acres in 12 locations at 8 villages

across Krishna district, said Mr Bhaskara Raju.

SAFE recognises the need for a collaborative approach to succeed in operations and development of the ecosystem. We have forged close partnerships to create a vertically integrated chain of local and corporate service providers. The active communication across the partners ensured the reduction in lead time and lean process management to optimise our operations.

Safe group always believed that helping people around defines our existence. We have organised events that helped many people. One such is a Mega medical camp has been organised in the village of Mudunuru, Krishna district. 50 doctors from two major hospitals in the state have participated in the camp. 3,000 people have been given medical help and free medicines have been distributed to 2,000 people.

Our farms have been visited by many international

dignities. It was a proud moment when the state government has chosen our farm to represent aquaculture farming, when the WORLD BANK associates visited the state for aquaculture progress in the state. Dr Stephen Newman, a renowned scientist in aquaculture visited our farms in year 2014 and gave his guidance for better farming techniques around the world.

Apart from shrimp cultivation, Mr Bhaskara Raju also entered into construction and development. KBR Infratech was started in 2015. It has three ongoing projects along with two successfully completed projects. With our expertise in construction and the necessity for good shrimp seed, we are stepping into Hatchery that can cater the needs of our company as well as other farmers. Mr Bhaskara Raju aims to excel in every field he steps in.

(Contn. from page 60)

In the recent culture myself and Mr Chinnayan (my client) took special care from stocking of seeds stage itself. Once in 10 days we took the water sample and sent for laboratory analysis. Based on the lab test, we tuned the water quality parameter and got the accelerated growth. Based

on the sampling result we observed the animal behaviour and growth. We corrected the water quality parameters by applying necessary probiotic and minerals. The sampling result gave the inspiration to continue the culture up to 20 counts, said Mr Rajan Devamoni.

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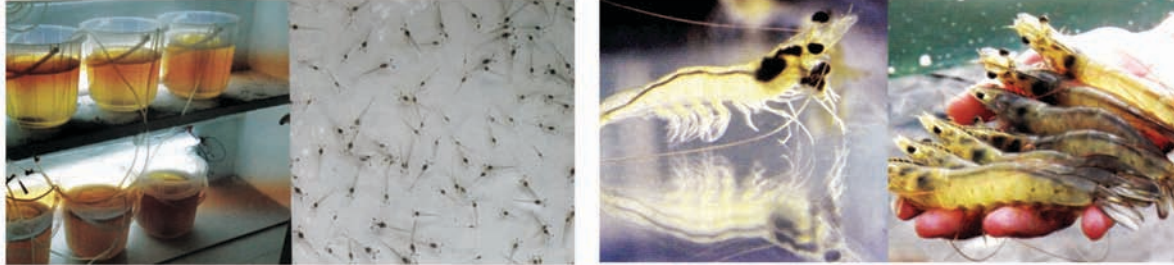
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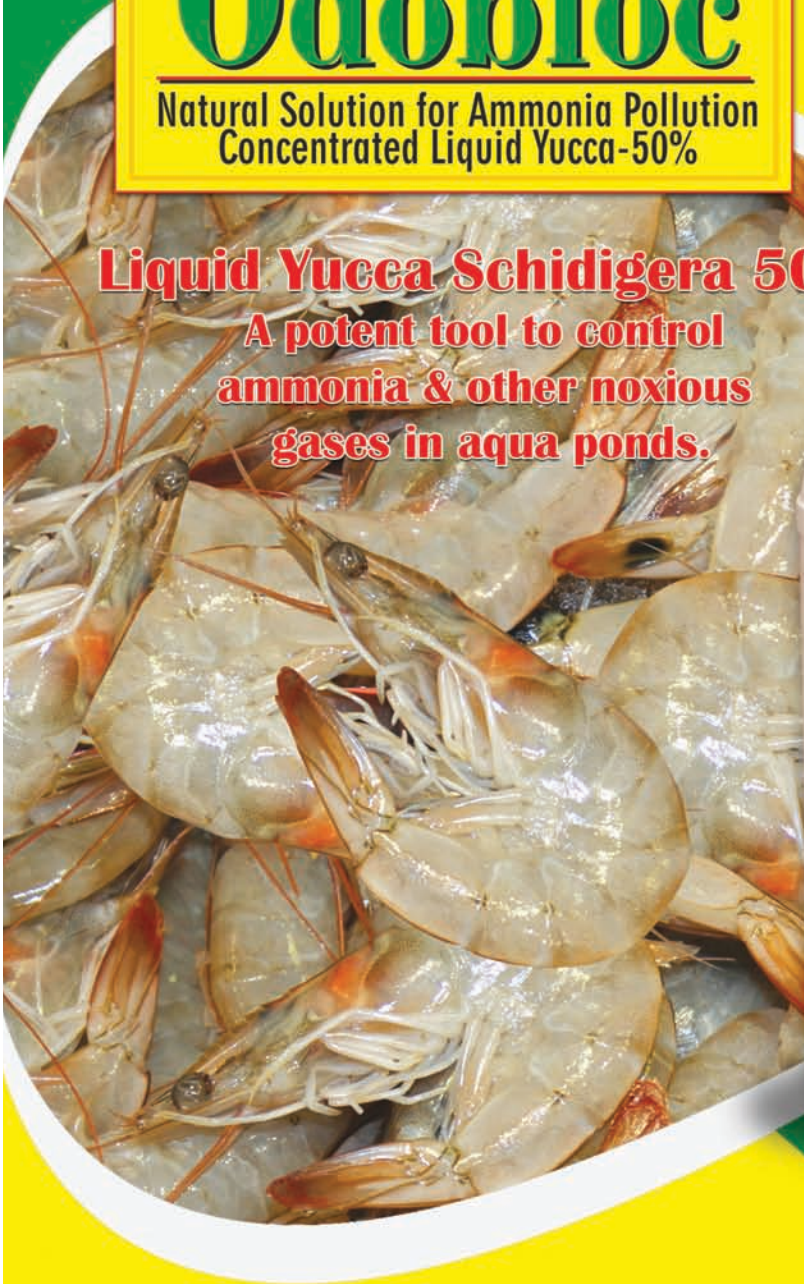
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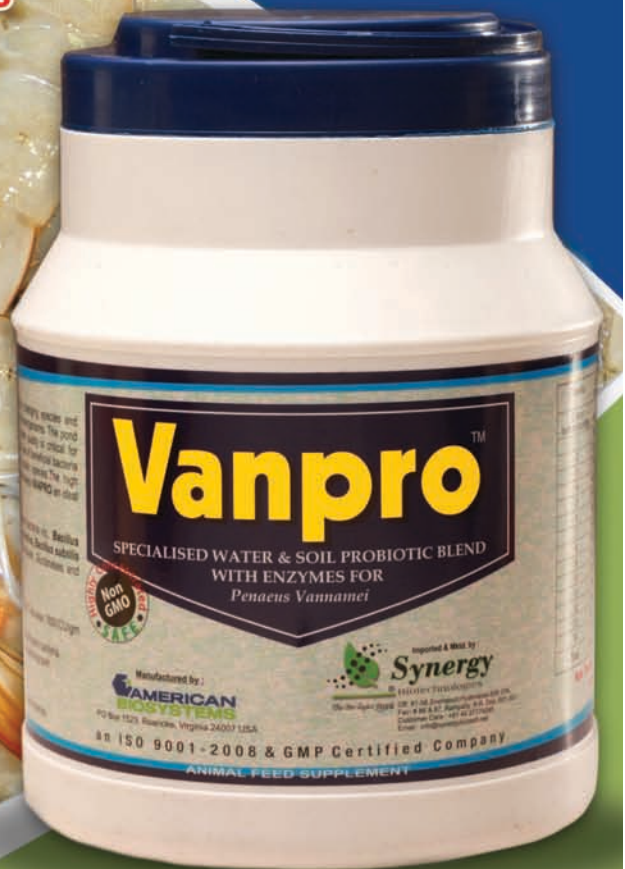
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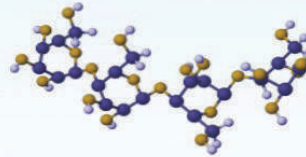
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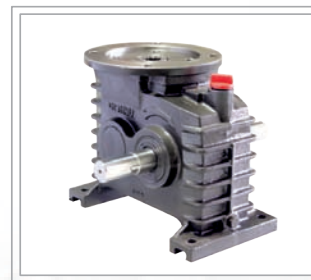
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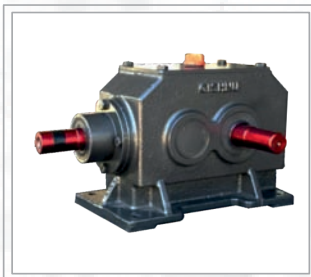


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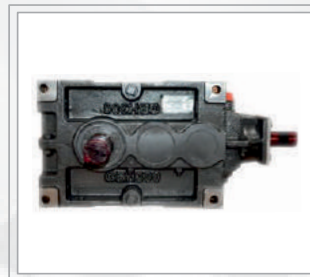
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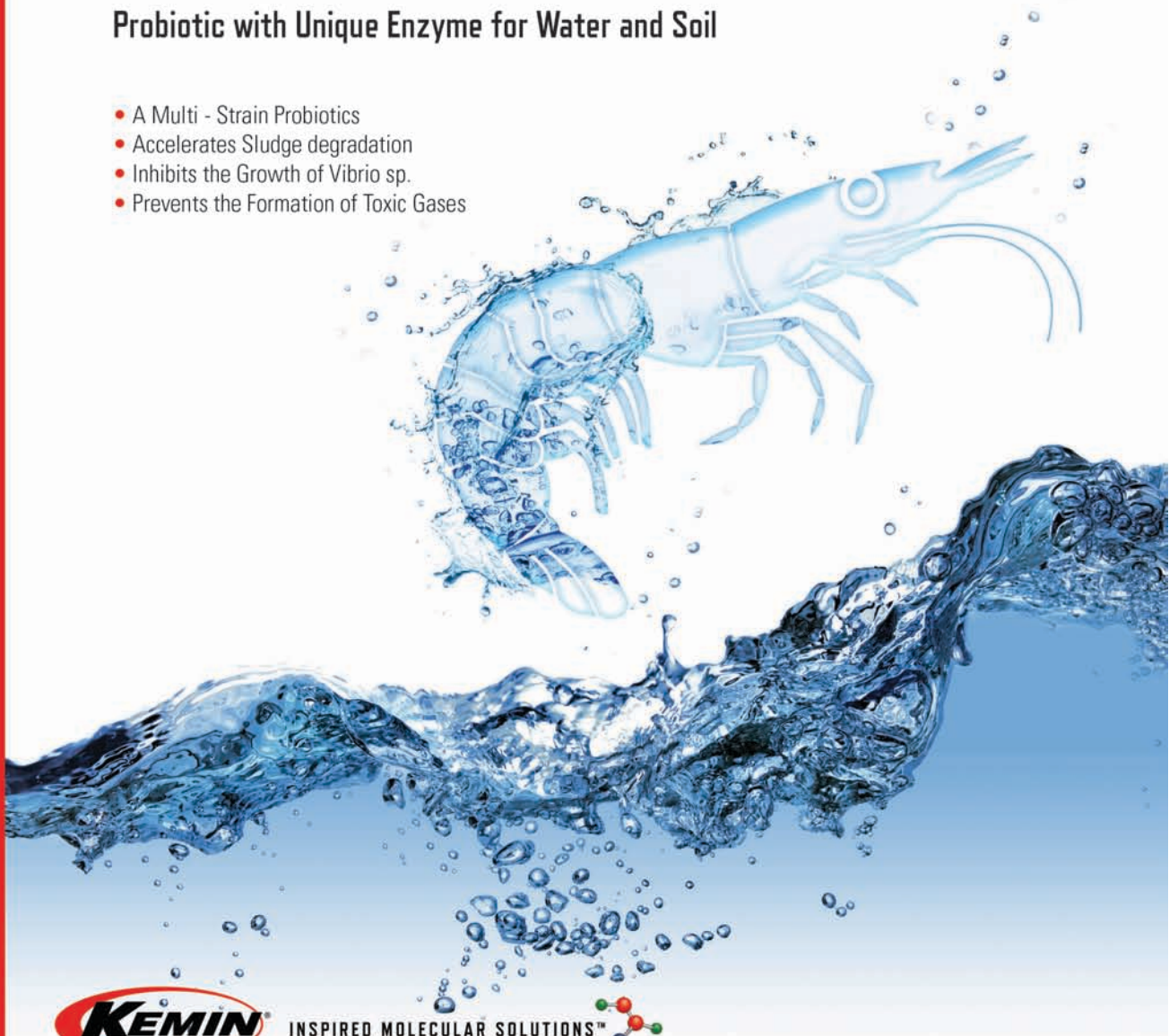
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Marine Ornamental Shell Industry in India

**S.Abuthagir Ibrahlim, Suraj Kumar Pradhan,
G.VijaySundar Deva and Suman Takar, Ph.d. Scholars**

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Introduction

The phylum Mollusca occupies second largest group after the phylum arthropod a (Spencer et al., 2009). Out of 10 classes of phylum Mollusca, the class Gastropoda and Bivalvia possess a wide variety with high ornamental value potential (Ng et al., 2016). In India around 3300 species of molluscs belonging to 220 families, 591 genera were accounted for and still lots of shells are newly identified (Appukutan, 1996). In the world scenario gastropods and bivalves occupies leading groups in terms of diversity among Mollusca with the combined total of 3000 species occurring in India (Alfred et al., 1998). The relationship between humans and ornamental seashells are known to be very ancient which was confirmed by archaeological finding in skull cave of Israel, where beads made of *Nassarius kraussianus* used 10,000 years ago evident that shells were the oldest known ornament used by humans (Insoll, 2011). The bond between the humans and shells were mentioned in many ancient cultures as religious beliefs, medicines, pride ornaments, foods and currencies etc. (Lindberg, 2005). There are places in India like Gulf of Mannar, Palk Bay, West Bengal, Lakshadweep, Gulf of Kutch, Andaman and Nicobar islands - a wide number of peoples involved in shell collection and shell handicraft business (Panda, 2005 and Sajan et al., 2013). Only a handful of species not more than 30 bivalves and gastropods combined are extensively taken as edible in India (Appukuttan and Ramadoss, 2000). The Wild Life (Protection) Act (1972) protects 20 species of gastropods and 4 species of bivalves under Schedule I and Schedule IV respectively. Alagarswami & Meiappan (1987) estimated that the ornamental gastropods production from India is around 600 tonnes/year. Bivalves & Gastropods accounts for 0.7% & 0.3% respectively of marine exports by quantity from India (Mohamed, 2012). Most of the protected species were commonly found their places in curios shops of India and in foreign trade as due to lack of knowledge about protected shells diversity, mis-taxonomic identification and loopholes in Indian laws (Mohammed, 2012). There was no proper data on collection on fishery landings, bycatch details and illegal trades which hurdles us to arrive at the

proper conclusions for the sustainable ornamental shell utilisation. Emphasis on few species causes pressure on that species instead of that the most abundant shells and bycatch dead shells of non-protected species can be used to reduce pressure on rare species and also it pays way to sustainable utilisation of marine ornamental shells. Our country (India) is with a lot of cultural significance notable for its handicrafts export as one of the topmost among developing countries (Srivastav and Rawat, 2016). There exists a huge market demand for Indian origin shell handicrafts in foreign markets which was reflected in the final price of our products and demand (Shyam et al., 2017). The share of marine ornamental shells handicrafts are very less and contributes an average of only INR 7.20 crores/year, even after possessing a great wide potential (Venkatesan, 2010). Since ornamental shell handicraft business is easily learnable and most suitable for coastal women's. The Self-Help Groups (SHGs) can be involved to do shell collections & shell based handicraft business with very low investments and to yield more profit both in small-scale and large scales.

History & utilisation of ornamental shells in India

Currency - The shells of *Cypraea* were used as money for trades before the British invasion in India. Till 1807, the cowrie was used as currency in Odisha which was replaced to coins by British resulted Paik rebellion in 1817. Still, cowries are valid on the Papua New Guinea island of East New Britain and can be exchanged for Kina. If all cowries exported are joined in one chain, it would cover 37 times the length around the earth and covers 4 times the distance from earth and moon (Cernohorsky, 1967). Hornell (1918) reported the practice of barter system of India, where the exchange rate for 1 male labourer = 1 cow + 3 chanks; the more valuable female labourer

= 3 cows + 4 to 5 chanks;
1 cow = 10 chanks; and 1 chank was equivalent to one rupee.

Ornaments - Women's in parts of the world, as well as India, are known to wear ornamental shells as bracelets, chains, earrings to confer fertility as well as easy birth giving as per their religious beliefs. Still, conch made bangles are extensively used in West

Highlight Points

Ornamental shell collection provides a great opportunity to the fishermen of India for their livelihood. The Wild Life (Protection) Act (1972) protects 20 species of gastropods and 4 species of bivalves under Schedule I and Schedule IV respectively. Immense harvest of rare species causes ecological problems, so utilisation of most common species can be a solution. This article highlights the scope, status, threats and conservation measures for the Indian shell industry.

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Bengal traditional marriages; these bangles in hands indicate the marital status of women (Lipton et al., 2013)

Traditional medicines-Powders of shells are used for the purpose of anti-diahhrea,anti-spasmodic, anti-oxidant, anti-emetic,anti-inflammatory and alkalizeretc.(Benkendorff, 2010).Especially those powder made from conch shells locally called as shankh bhasma is prescribed widely in India as medicine(Kumar et al.,2006).

Music instruments-Shells of the variety of large gastropods such as sacred chank, queen conch, triton shell etc.,are used as musical instruments by creating a hole at the end of the shells spire. Still, in many Hindu temples, these divine instrument music's are so popular (Montagu,1981).

Sacred symbol- Turbinella pyrum is considered as one among the 8 auspicious symbols in Buddhism.Sinistral chanks of T.pyrum was considered as one of the tools used by god Lord Vishnu in Hindu religion; Scallop shells were considered to be the symbol of Saint James the great, in Christianity(Mukundan,1968).

Status of Gastropods and Bivalves in India

There are 1900 species of gastropods and 1100 species of bivalves are identified from the Indian coast with more diversity occurs in Andaman and Nicobar Islands followed by Gulf of Mannar and Lakshadweep (Appukutan, 1996). As India's 8118 Km coastline is the mixture of mangroves, coralreef,mudflats,sandy beaches and rocky beaches etc.,these ecosystems support a wide variety of mollusc making India as the second most diverse country for molluscs after the Philippines.

Protection

In Indian Wildlife (Protection Act), 1972, following 24 species of sea shells are included.

In Convention on International Trade in Endangered Species of Wild Fauna and Flora, the family Tridacnidae is protected.

Shell craft industry in India

Tamilnadu

An appreciable business is found in places of Rameswaram,Kilakkarai, Tirupullani, Nagercoil and Kanyakumari. In Kilakkarai, Periapatnam and Rameswaram there are many industries exist for shells carving,polishing and ornaments manufacturing etc. Broken conch shells are used for manufacturing garlands in Tirupullani, whereas in Kanyakumari district this business contributes around 25% of total handicraft business.

WestBengal

Conch business was the livelihood of at least 1- 1.5 million people directly or indirectly in Odisha and West Bengal. Curios makers used to purchase conches from parts of the country such as Tuticorin,Chennai, Kanyakumari and Kerala, then they utilise the conches as raw materials in making curios (Dutta,2011).Nearly 3,00,000conch shellartists and tradersresiding in West Bengal and Odisha(Mudur,2005). Still, there is much potential for this industry in creating and

improving the livelihood of the rural people was found (Paul and Jana,2014).‘SankhaShilpaBachao committee’ formed in 2001 to oppose against 52 seashell species ban of Govt. of India Circular dated 11th July 2001 succeeded to reduce the species ban to 24on December 5,2001, throughtheir tireless efforts.

Andaman and Nicobar

Being one of the most important breeding ground for major molluscs, several licenced collectors are involved in the ornamental shell crafts making. Turbo,Trochus,Nautilus were most widely used for curios making.

International market

Some mollusc species are imported to India from different countries like China, Thailand and Indonesia,after the value additions and carvings they are exported back whichwascommonly seen in case of Cyprea,Haliotis,Miterla sp.due to the availability ofskilled artistic carvers and low processing cost conditions prevailing in India. Countries like Japan, Singapore,Germany,USA and France were the major export destinations forIndian shell crafts.

By-catch

More than 50% of the marine fisheries production of India is accounted by trawl fisheries (Kumar and Deepthi, 2006). Bottom shrimp trawlers catch bulk of by-catch of gastropods and bivalves in most places of its existence (Kurup et al.,2003). Babu and Appukuttan (1995) reported the occurrence of 29 sp. of gastropods as by-catch in Kollam of Kerala. Most of the trawl bycatches are thrown as waste into seas and beaches. Only a small part is utilised

Conclusion

There is a strong scope for this ornamental shell business in India because of the foreign and domesticdemand prevailing. This business also backs make in Indiaconcept and reducing plastic use in ornaments,can be promoted by our government through proper schemes, fundings and awareness. Immense harvest of rare species causes ecological problems, so utilisation of most common species can be a solution; for example Lambis truncate is rare and its collection banned under Wildlife (Protection) Act whereas a similar lookingLambis lambis can be replacedfor L.truncateas substitutes (alternative approach can be preferred) to make shell handicrafts as it was moreabundant and not under schedule list. Indiscriminateextraction of Mollusca resource can be controlled by providing proper license,awareness and education to the shell collectors as well as traders. The vast varieties of dead washed ashore species and by-catch(other than scheduled species) can be utilized rather than encouraging target specific shell collection. The proper well-documented data about shell craft industry is needed for management decisions.Mariculture of these ornamental molluscs also seems to be a sunrise business but larval technology of these organisms was found to be a hurdle, which can be worked out in near future through valid researches.



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Table 1: Scheduled marine shells of India (Rajan, 2015)

Scientific name	Common name	Distribution	Status
<i>Cassis cornuta</i>	Horned Helmet	Indo-Pacific: Andaman Islands, Gulf of Mannar (Tamil Nadu)	Schedule I; Part IVb
<i>Cypraecassis rufa</i>	Bull mouth Helmet	Indo-Pacific. India: ANI	
<i>Charonia tritonis</i>	Trumpet Triton	Indo-Pacific. India: ANI, Lakshadweep	
<i>Tudicla spirallus</i>	Spiral Vase	India: South India (Pondicherry)	
<i>Conus milne-edwardsi</i>	Glory of India	Indian Ocean. India: ANI.	
<i>Tridacna maxima</i>	Elongate Giant Clam	Indo-Pacific. India: AN	
<i>Tridacnasquamosa</i>	Fluted Giant Clam	Indo-Pacific. India: Andaman Islands	
<i>Hippopus hippopus</i>	Bear Paw Clam	Indo-Pacific. India: Nicobar Islands	
<i>Trochus niloticus</i>	Commercial Trochus	Indo-Pacific. India: ANI	Schedule IV; Part 19, XIV
<i>Turbo marmoratus</i>	Great Green Turban	Indo-Pacific. India: Andaman Islands	Schedule IV; Part 19, XIII
<i>Strombus (Dolomena) plicatus sibiraldii</i>	Sibbald's Conch	Gulf of Aden to Sri Lanka. India: Kerala Coast	
<i>Lambis (Harpago) chiragra chiragra</i>	Chiragra Spider Conch	Indian Ocean to Eastern Polynesia. India: ANI	Schedule IV; Part 19, VI
<i>Lambis (Harpago) chiragra arthritica</i>	Arthritic Spider Conch	East Africa to Central Indian Ocean. India: Pondicherry	Schedule IV; Part 19, VII
<i>Lambis (lambis) crocata</i>	Orange Spider Conch	Indo-West Pacific. India: Andaman Islands	Schedule IV; Part 19, VIII
<i>Lambis (lambis) truncata truncata</i>	Truncate Spider Conch	East African Coast to Bay of Bengal and Cocos Keeling Atoll. India: ANI	Schedule IV; Part 19, XI
<i>Lambis (Millepes) millepeda</i>	Millipede Spider Conch	South-Western Pacific. Indian Ocean	Schedule IV; Part 19, IX
<i>Lambis (Millepes) scorpius scorpius</i>	Scorpio Conch	Indonesia and Ryukyu Islands to Samoa. India: This subspecies not recorded from Indian waters. <i>L. (M.) scorpio indomaris</i> Abbott. Occurring in ANI.	Schedule IV; Part 19, X
<i>Cypraealimacina</i>	Limacina Cowrie	Indo-West Pacific. India: Tamil Nadu, Gulf of Mannar.	Schedule IV; Part 19(i)
<i>Cypraeamappa</i>	Map Cowrie	Indo-Pacific. India: ANI	Schedule IV; Part 19(ii)
<i>Cypraea talpa</i>	Mole Cowrie	Indo-Pacific. India: ANI	Schedule IV; Part 19(iii)
<i>Pleuroploca trapezium</i>	Trapezium Horse Conch	Indo-Pacific. India: Andaman Islands, West Bengal Coast.	Schedule IV; Part 19(iv)
<i>Harpulina arausiaca</i>	Vaxillate Volute	Sri Lanka & Southern India: Gulf of Mannar.	Schedule IV; Part 19(v)
<i>Placuna placenta</i>	Windowpane Oyster	Philippines; Southeast Asia. India: Andaman Island, Goa, Orissa, Tamil Nadu, West Bengal coasts	Schedule IV; Part 19(xii)

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Fattening of mud crabs in boxes at Namkhana, South 24 Parganas, WB

Subrato Ghosh

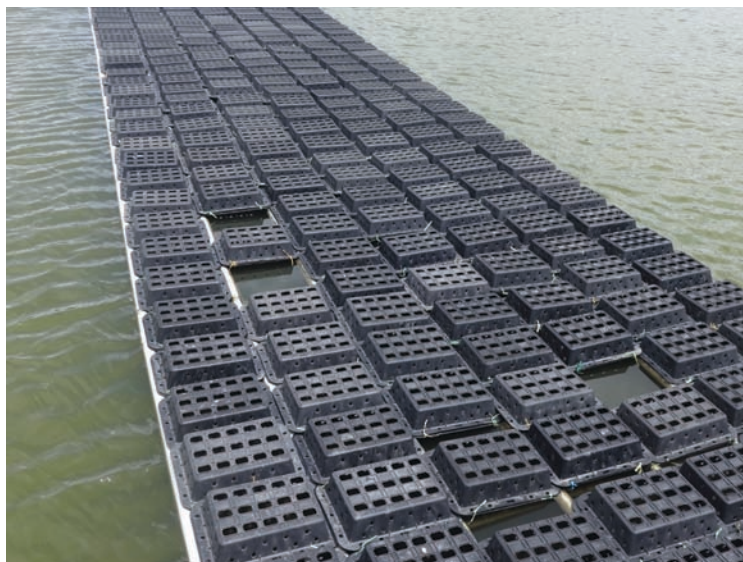
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Importance of crab fattening

In Indian Sundarbans region in WB, agricultural crops are not high yielding due to salinity of soil, thus optimum growth of agricultural crops is prevented. Availability of commercially-important fishes and their stock in brackishwater rivers and creeks have been gradually decreasing during recent years, thus impeding fishing activities. Many households in coastal belt of WB collect riverine *Penaeus monodon* post-larvae but it has long-term negative impact to the aquatic biodiversity thriving therein. Last but not the least, commercial *P. monodon* farming has suffered a setback mainly due to flare of viral diseases. In this context, the exportable commodity mud crab *Scylla serrata* is realized as an alternative species to *P. monodon*.

Live mud crab of large size has gained importance in corporate sector due to its export value and good overseas demand. Its export from West Bengal and Tamil Nadu has increased over the last fifteen years; the boost occurred after the introduction of crab fattening. In crab fattening, the turnover is fast, period between investment and returns is relatively short, requires low investment, less risk, does not require costly pelleted feed and can be practiced in small water bodies. It has emerged as a promising component in coastal aquaculture and profitable vocation with prospect of high returns in Indian Sundarbans, which spread itself amidst North and South 24 Parganas districts in WB. Tiger shrimp seed collectors, small-scale

fishermen and commercial shrimp farmers in estuarine saline zone of WB can adopt crab fattening technology, which will foster sustainable livelihood security for them.



Crab fattening boxes on a raft

Buying crabs for fattening

Live *S. serrata* are caught by marine fishermen and crab collectors from the Sundarbans delta in sizes of 350-400gm (2.5-3nos./kg), 250gm (4nos./kg) and others. There are five grades of weight of male crabs which are bought by crab fatteners, price varying from Rs 300-350/- kg for 100-150gm size to Rs 450-700/-/kg for 400-500gm males. The two grades of females are Rs 350-450/-/kg for 150-200gm and Rs 500-600/-/kg for those above 200gm. Males and females are bought by crab fatteners @ Rs 300-500/-

kg from fish merchants of Dhamakhali market supplied by crab collectors of Indian Sundarbans region; which are also available at Najat, Sorberia, Amtoli, Malancha, Brindaban Bazar, Chunokhali, Taldi, Canning wholesale fish and shellfish markets. Mud crabs grow up along the rivers and canals namely Saptamukhi, Thakuran, Matla, Bidyadhari, Gosaba, Herobhanga and Raimangal in Indian Sundarbans, also reckoned as estuaries. Important mud crab landing areas in the two districts are Basirhat, Basanti, Sonakhali, Port Canning, Kakdwip, Satjelia, Kumirmari and Namkhana.

Both grow-out crab culturists and crab collectors supply healthy live adult crabs to the markets. Among those caught, crab fatteners choose soft-shelled females with under-

Highlight Points

The enterprise of mud crab *Scylla serrata* fattening is believed to become a profitable vocation in the midst of saline water conditions and sea level rise due to effect of climate change phenomenon in Sundarbans region of West Bengal. It is a viable substitute of *Penaeus monodon* farming which proved to be much less profitable due to disease incidences. Sri Dibakar Majumdar, aged 48, is the first person to adopt the innovative technology of crab fattening in durable, submerged-type plastic boxes in brackishwater pond for the first time in WB in January 2018. Intimate conversation was made with crab fattener Sri Majumdar at his farm site at Namkhana, South 24 Parganas on 26/8/2018 to gain knowledge on the advanced state-of-art of fattening of *S. serrata* meant exclusively for export in live condition to Singapore and Malaysia.



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View of Sri Majumdar's crab pond

developed ovary and males (somewhat lean) that have to grow to fill their new shells with meat (after moulting). Adult crabs {carapace width (CW): 8-14cm} of such condition are not accepted in export trade and thus need fattening.

Crab fattener Sri Dibakar Majumdar

In order to prevent cannibalism among crabs and increase yield of fattened mud crabs, since December 2017, Sri Dibakar Majumdar, aged 48, an employee at Indian Oil Corporation as well as well-established and professional crab farmer has adopted the advanced Vietnamese concept of crab fattening technology in durable, perforated and immersed/submerged-type boxes in one of his tide-fed 3000sq.mt pond (90m x 36m; depth 1.2m, salinity 15-25ppt). He is the first person to introduce this technology in WB. His crab fattening pond is located at Vill. East Ganeshnagar (via Seemabandh), P.O. Battala, PS Namkhana in South 24 Parganas, WB.

Getting inspired from the established practice of crab fattening in split-bamboo cages and boxes in brackishwater bodies in Vietnam and Bangladesh, Sri Majumdar visited Ratnagiri, port town in south-western part of Maharashtra to purchase fattening boxes. He was told that he must buy at least 500 boxes at one time, which costs Rs 500/- each. As it was a high estimate of expenditure, Sri Majumdar decided to manufacture such containers on his own and begin the practice. He purchased 990 decimal land area in the estuarine saline zone at Namkhana, WB, constructed four brackishwater ponds and one freshwater pond (without tidal influence). All around farm premises on embankment, Sri Majumdar has planted 700nos of date palm saplings (popular as Madina



Mr Majumdar (from left), Sri Biswas and author

Ajwa dates) imported from Saudi Arabia, comprising five varieties each unique in taste, protein content, smell, seed size and other characteristics.

Plastic box as container for crab fattening

Sri Majumdar's crab fattening pond is located at 500-600mt distance from Saptamukhi, a tidal river. His pond has tidal influence; 20% water is exchanged on every full moon and new moon. He stocks females with infirm outer covering and under-developed ovary individually in each box. Boxes are tied to and positioned on floating rafts made of eight parallelly placed 5 cm dia PVC pipes; one such raft hold up to 1040 boxes from one end of pond to another. Five rafts can be positioned in the pond at one time, thus upto 5000-5200 boxes can be set up in the pond in every single fattening period.

In this individual rearing system, healthy intact female crabs without any bodily deformities are held in individual perforated plastic boxes having detachable upper portion (cover). A bamboo bridge has been constructed for passage across the pond in mid-region, which allows Sri Majumdar's farm employees to sit over it and examine individual boxes on the rafts, which passes below the bridge connected to a pulley system. Sri Majumdar is also manufacturer of crab fattening boxes bearing the emblem 'Bengal Mud Crab Aquaculture'. Each such box is black coloured, 33.5cm long,



Crabs undergoing fattening in boxes



Sri Majumdar with crab fattening box

submerged portion 16.5cm high, detachable cover 9-10cm high, made of unbreakable plastic parcel, weigh 720gm, has 6-7 years longevity and sold @ Rs 200/-/piece. At time of harvest after fattening, all the crabs need not be harvested by draining out pond water.

Management practices

Female crabs 140-180gm size (bought @ Rs 300-350/-/kg) are stocked; *S. serrata* of Indian Sundarbans region and those brought from Gujarat (mainly preferred) are fattened here for 25 days and 42-45 days respectively. Eighty percent of those bought are females. At times when supply of small-sized *Johnius sp.*, *Setipinna phasa*, *Coilia dussumieri* (fishes normally cut into pieces and fed to crabs undergoing fattening, price Rs 25-40/-/kg) caught in fishing trawlers are insufficient from this region, soft-shelled snails, mussel meat and pieces of *Tilapia nilotica* are fed to crabs in boxes @ 10-12% of body weight daily through the 1 inch dia pores on cover. It is easy to monitor the condition of crabs undergoing fattening in boxes, and individualized feeding effect in higher feed utilization, Sri Majumdar opined, who is maintaining a stock of 7200 boxes. Sri Majumdar supplies the healthy ready-for-market crabs (CW: 13-16cm) in morning to company/agency at Sealdah and Baghajatin areas in eastern and south-eastern Kolkata respectively, who are reputed exporters of live mud crabs. Fattened females with 30-40gm increase in individual weight are sold by Sri Majumdar @ Rs 750-800/-/kg and air-



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Crab undergoing fattening in box **Female crab needs fattening**

lifted to Singapore on same evening. Ripe ovary develops in females with hardened shells. Export trade of fattened live mud crabs of Indian Sundarbans is undertaken by nine exporters located in and around Kolkata {Ref: Pramanik, S. K. and Nandi, N. C. 2012. Crab fattening (*Chamber Chas*) - a promising enterprise in Indian part of Sundarban. *J. Environ. and Sociobiol.*, 9: 78}.

Sri Majumdar applies 30kg Dolomite in the pond at an interval of 15-18 days, which facilitates development of new shell in moulted crabs. Oxygenation of water is done infrequently. After a few crops, pond is allowed to dry and 100kg CaCO₃ is applied over bottom soil after drying. On 6th-7th day, pond is filled up with tidal water. Sri Majumdar has estimated an income and net benefit of Rs 57,600/- and 22,600/- {Rs 57,600/- - Rs 35,000/- (Operational cost)} respectively from a crop of 45 days; considering 500 female crabs are fattened in boxes in 640sq.mt water area and 180-220gm weight of each gained at harvest with 80% survivability. Sri Majumdar fattens his stocked crabs during June-July to March of next year and realizes a high demand during winter. In crab fattening, female crabs are preferred because of high market price {Ref: Mukherjee, M., Das, S. and Chattopadhyay, M. 2001. Black gold crab – its potentiality can save a little bit of biodiversity. *Proceedings of Workshop on Sundarbans' Day, Government of WB Publication*). In the main water body of crab fattening pond, an improved variety (high energy content) of *Tilapia* sp. is propagated, which is a hybrid of naturally-occurring *Oreochromis mossambicus* and pond-reared *Tilapia nilotica*; it attains 500-600gm. The same pond contains lesser numbers of *Mystus gulio*.

Other fish ponds

In addition to crab fattening pond, Sri Majumdar owns three other brackishwater ponds of 3000-3500sq.mt each. In the 1st pond with properly fenced nylon net enclosure supported by split bamboo screen, he practices grow-out culture of *S. serrata*. Underweight (baby) crabs 50-80gm for females and 80-100gm for males (CW: 3-5cm) are stocked; total weight 40-50kg every time, supplied by seed crab collectors of Indian Sundarbans region. Those are reared for the next 75-80 days, fed with chopped small-sized brackishwater fishes @ 5-6kg/100kg stocked and harvested at 140-180gm size. Monosex *Tilapia* is also propagated in same pond; young ones are stocked in February and harvested in May-June.

In the 2nd pond, polyculture of monosex *Tilapia*, bagrid catfish *Mystus gulio* and *Penaeus monodon* is practiced. Scientists of ICAR-CIBA at Kakdwip, WB provided captive-bred seeds of *M. gulio* to Sri Majumdar (15 days old; 24-30mm). Naturally-occurring *P. monodon* seeds are allowed to grow in this pond. In the 3rd pond, broodfishes of both monosex *Tilapia* and commercially-important marine fish grouper *Epinephelus tauvina* are maintained. In the freshwater pond (zero salinity), young ones (6-10cm) of the captive-bred *Hilsa ilisha* have been stocked to observe its growth, which were

provided to him by ICAR-CIBA. It is propagated in association with *Labeo rohita* and *Catla catla*. Sri Majumdar in association with his close friend Sri Sisir Kumar Biswas manages and coordinates the overall activities in this farm namely 'Bengal Mud Crab Aquaculture'; three skilled labourers are engaged for maintenance work in farm ponds. All of them are experienced and well-versed with crab fattening technology and inland pond aquaculture. Small *Tilapia* (50-100gm) are often used as feed for crabs in boxes.

End note

Sri Majumdar explained to author the determination procedure of fullness of ovary in fattened crabs and those attained 'ready-for-market' state. Crabs are tested individually by holding and looking a specimen (brought out from box) against a lit 100 power electric bulb. If light does not pass through the body, then it is clear that ovarian maturation has already taken place. Females with fully grown ovary are opaque. Such crabs are harvested and subsequently a new mud crab is placed in same box that needs fattening.

According to Sri Majumdar, profit from tiger shrimp *P. monodon* farming is not guaranteed every year. Profit margin is realized after six months of farming but in *S. serrata* grow-out culture and fattening, it is realized from third month. In these two districts, crab fattening is usual in Gosaba, Basanti, Minakhan, Hingalganj, Hasnabad and Sandeshkhali areas. Better economic return is realized from crab fattening in comparison to its grow-out culture. Gravid female *S. serrata* with full orange-red egg mass have great demand in international market. In recent years, there is a rapid growth of mud crab markets in WB {Ref: Dana, S. S., Ghosh, A. and Bandyopadhyay, U. K. 2015. Socio-economic profile and problems of mud crab farmers of South 24 Parganas: an explorative study. *Journal Crop and Weed*, 11(1): 120-123}.

Mud crab traders and exporters in Kolkata sort the fattened crabs supplied to them into specific grades and accordingly fatteners are paid. Sri Majumdar stated that during November to January of next year, price of female fattened crabs reaches upto Rs 1800-2100/-/kg. Sri Majumdar and Sri Biswas conduct on-farm demonstration and hands-on field training for brackishwater fish farmers who are willing to take up this vocation. For training and crab fattening boxes, interested persons dependant on capture fishery and aquaculture in coastal WB may come in contact with them on the numbers 9830119042, 9432857783. Such appropriate training and extension services are expected to enhance the skill and knowledge of both men and women involved in crab fattening in Indian Sundarbans. Author is grateful to Sri Dibakar Majumdar and Sri Sisir Kr. Biswas for entertaining author at their crab fattening site and patiently explaining the different management activities.



Another view of Sri Majumdar's pond

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Cluster Shrimp Farming – An Innovative Approach

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Abstract

India, with nearly 150,000 farmers is a leading shrimp aquaculture nation in the world. Of which more than 90% are small scale aqua farmers with land holding of less than 2.0 ha. In recent times, the industry is passing through a crucial phase and farmers are under stress as shrimp prices at the farm gate fluctuates widely based on offer and demand. Under this context those small farmers who are entirely depending on shrimp farming for their livelihood are at stake every time by they stock their pond. A mechanism that would provide access to good markets and guarantee a minimum price would allow small farmers to maintain their activity and livelihood.

Keywords: Shrimp culture, small scale farmers, Sustainability, Aquaculture.

Introduction

The work on the development of Better Management Practices (BMPs) on the shrimp culture commenced with the organization of small scale farmers into groups-clusters, grouping farmers in a given area, drawing on common resources and including the farmer s to act collectively rather than individually to the betterment and benefits of all. Such clusters which were later transformed into societies with a legal standing, with the establishment of the National Center for sustainable Aquaculture in 2007 (NaCSA) BY Marine Products Export Development Authority (MPEDA), with a purview to monitor society functioning and dissemination of technical know-how to other areas.

The five year collaborative project of MPEDA-NACA from 2002 to 2006 provided the basis and strong foundation for the establishment of NaCSA by the government. This program which was initiated in Mogaltur, a small village in the state of Andhra Pradesh in 2002 has been very successful in forming a massive participatory movement of farmers across the country later on.

Organized small scale farmers:

Farmer societies implement and manage the aquaculture activities through participatory

approach in order to accomplish their common goals of reducing risks and maximizing returns while meeting the market demands through sustainable aquaculture operations.

About 250 small farmer aqua societies have been established with membership between 20 to 75 registered farmers in each society in five coastal states of India. The societies have a clear organization mandate with strict conditions for membership, and elected board of members. The total membership in Aqua societies all over India is slowly increasing and is now close to 7000 members.

The societies were setup as per guidelines and norms by the MPEDA and it is legally registered both at state and federal levels with the Governments besides subject to annual audits to verify accounts and ensure a democratic and transparent management system.

Improving production skills through science- based, sustainable practices:

NaCSA is providing technical and scientific support to farmers for reaching the increased demand in quality and environmental standards required by international markets and also assisting in pilot testing of WWF shrimp dialogue standards for shrimp aquaculture products. Farmer societies integrate values such as food safety, environmental protection, good practices, traceability and legality in their policies.

Facilitating interaction among stakeholders:

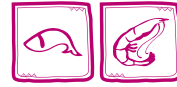
NaCSA is developing a model concept that brings together people and organizations from different backgrounds to work in partnership, a work that requires partners to pool their commitment by human, financial, and natural resources for sustainable growth of aqua sector in India. NaCSA is establishing for the first time a relationship between a specifies seafood buyer and small-farmer organizations in India for the marketing of society product.

Better market access:

Aqua farmer societies provide many advantages because of the existing controls that ensure not

Highlight Points

- In recent times, the industry is passing through a crucial phase and farmers are under stress as shrimp prices at the farm gate fluctuates widely based on offer and demand.
- Under this context those small farmers who are entirely depending on shrimp farming for their livelihood are at stake every time by the stock their pond.
- A mechanism that would provide access to good markets and guarantee a minimum price would allow small farmers to maintain their activity and livelihood.



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only the minimum basic requirements of the international market, but also including social and environmental responsibility and food safety in place. Common key characteristics of societies are common marketing of the produce as a group, homogeneity of members in terms of location, production system and products. About 4000 tons of BMP shrimp is expected during 2009.

Good practices:

- Participatory decision
- Bulk purchase of quality inputs
- Organized farming
- Cooperative disease management

Safe shrimp:

- Better management practices monitored by NaCSA to control the hygiene and safety of shrimp produced by farmers of societies.
- All inputs are screened for banned antibiotics
- Shrimp are tested for antibiotic residues. 10% of random BT samples from 2500 society ponds were tested negative for antibiotic residues during 2008.

Traceability:

- All society shrimp farmers are registered by the Coastal Aquaculture Authority of India.
- Post larvae and feeds are sourced from selected suppliers and are fully traceable.
- Traceability back to shrimp farms and hatcheries through record keeping at all levels.
- Selling society produce as one unit to one processor.

Eco Friendly:

- Society farmers produce indigenous Black Tiger S shrimp (*P.monodon*) at a limited stocking density (<10PL/m²)
- Conservation of resources leading to reduced pollution.
- Reduced Carbon Foot Print-converting diesel based farms to electricity.
- Socially Responsible:
- Aquaculture in farmer societies being developed and operated in a responsible manner minimized conflicts with local communities.
- Minimized risk to smallholders.
- Implementation & Compliance:
- The group has an internal control system to ensure compliance with the BMPs by all members of the group.
- Societies are audited by Government annually for implementation of better practices.
- Society farmers are familiar with requirements for export.

Sustaining livelihoods:

The outcomes of organization of small scale shrimp farmers in India ranged from improved shrimp yields, less impact on the environment, improved product quality, and better relations among players in the market chain. In short, the society formation and or organization of small scale farmers into groups facilitated the adoption and implementation of the BMPs providing benefits to the farmers, environment

and society.

A stable price that covers at least production and living cost is an essential requirement for farmers to escape from poverty and provide themselves and their families with decent standard of living. NaCSA is in negotiation with one of the prominent buyer of seafood for purchasing Society produced shrimp and selling the same with a unique brand name thereby giving a premium price to the product. This would also contribute to Cooperate Social Responsibility programs of importers.

The market recognition of the society produce would further help in sustaining shrimp sector there by contributing to a new vision for the aquaculture sector in support of small farmers livelihoods in India.

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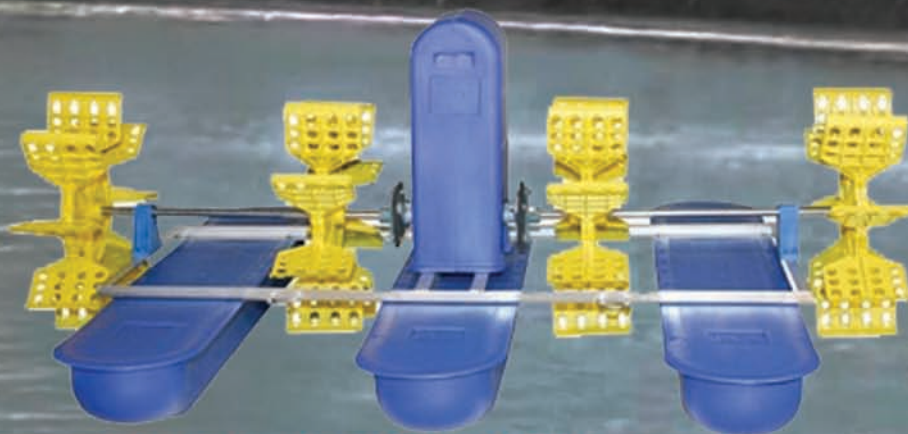
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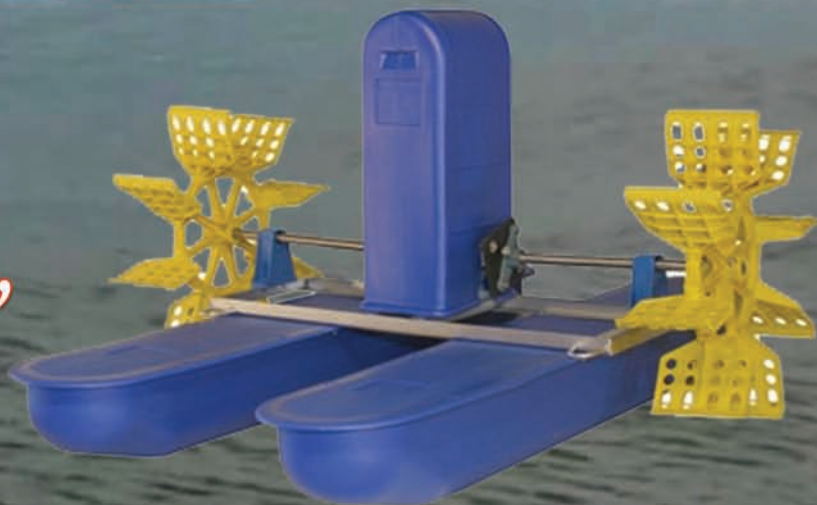
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Designed to deliver maximum power



CR MOTORS

CR group is multi dimensional company in Coimbatore, with keen interests in infrastructure development and engineering industries.

CR Motors private limited is on a fast track growth and is emerging as one of the leader in the induction motor industry under the CR Motors banner.

CR Motors cater to the various segments of the industry with its wide product range from 0.25 HP to 20 HP motors best suited for industrial applications.

CR industry produces Three phase and Single phase induction motors that are elegant in style, rugged in performance with world class features.

CR Motors are specially designed to deliver maximum power and to last long for life

FEATURES - AERATOR MOTOR

Single phase and three phase applications

Product Range are 1 HP, 2 HP & 3HP in Three phase, 1HP & 2HP in Single phase Aerator motor

Our motor tested as per IS 325 & IS 12615 standards

90 L Frame size and continuous rating (S1)

'F' Class insulation

High efficiency results in saving of energy bills

Lower heat generation better heat dissipation

Extended motor life due to lower motor temperature

Totally enclosed fan cooled

Degree of protection-IP44

Double side shield high quality imported bearing for long life

Bearing : 6205 DE & NDE side

Shaft : Dynamically Balanced



CR Motors Pvt. Ltd.

(AN ISO 9001-2008 CERTIFIED COMPANY)

Off: No.79/2, II Floor, T.V. Samy Road East, R.S. Puram, Coimbatore 641 002

Factory: No. 1, Nanjappa Gounder Street, Therkku Thottam,
Linganur (P.O), P.N.Pudur, Coimbatore 641 041

Ph: 0422 2424509 Mobile: +91 98422 40009 / 98940 12581

E-Mail: crmotorspltdcbe@gmail.com / www.crmotors.co.in

Gassen Plus

Bon Ammonia and obnoxious Gasses

Shrimp / Fish performs all their body functions and growth in water. Good quality water and proper D.O. levels determines the success or failure. Good quality water, optimum D.O. level is of prime importance for health and growth of Shrimp / Fish.

Irregular water exchange, excess and leftout feed, dead algae, fecal matter, increases the organic load at the pond bottom. Accumulation of such waste absorbs available oxygen, creating anaerobic condition which leads to pollution of pond bottom. Polluted pond bottom and unhealthy environmental conditions triggers the release of toxic gasses like Ammonia, H₂S, Methane, etc, The toxicity of Ammonia, Hydrogen Sulphide, Methane attributed mainly due to unionized form. As the concentration in water increases, ammonia excretion by aquatic organism diminishes and the level of ammonia in blood and in other tissues increases. Ammonia increases oxygen consumption by tissues, damage gills and reduces the ability of blood to transport oxygen, and increases the disease susceptibility. To eliminate / overcome the above problems 'GASSEN PLUS' Yucca Schidigera, it contains Steroidal "Saponin" which help to reduce ammonia and other noxious gasses such as H₂S, Methane, etc., Microbial enzyme "Urease" Production inhibited by Saponin which leads to an increases D.O. and reduction of BOD and COD levels.

Bacterial strains such as Bacillus Subtilis, Nitrobactor, Nitrasomonas, rapidly converts ammonia into Nitrates, Nitrites and finally non-toxic Nitrogen. Hydrogen Sulphide converts into Sulphates, Sulphites and finally non-toxic Sulphur, Methane into Non-toxic carbon. This conversion reduces the obnoxious gasses in the pond bottom. Reduction of this gasses improve the D.O. level in the water and bottom.



COMPOSITION:
YUCCA SCHIDIGERA
ALOEVERA
BACILLUS SUBTILIS
BACILLUS POLYMIXA
BACILLUS LICHENIFORMIS
NITRASOMONAS
NITROBACTOR
STABILIZERS

DOSAGE: 1 Kg per Acre or
consult your Aqua Technician
For Specific Usage & Dosage

PRESENTATION: 500 gms & 1 kg



DOCTOR'S VET-PHARMA PVT. LTD

cG.M.P. Certified an ISO 9001:2008 Company
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ALL IN ONE gel

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COMPOSITION :

Vitamin-A	-	5000IU
Vitamin-D3	-	1000 IU
Vitamin-E	-	15 mg.
Vitamin-B1	-	1.86 mg.
Vitamin-B2	-	1.25 mg.
Vitamin-B6	-	0.62 mg.
Niacinamide	-	30 mg.
D-Panthenol	-	1.26 mg.
Inositol	-	10 mg.
Folic Acid	-	10 mg.
Biotin	-	15 mcg.
Vitamin-B12	-	6.25 mcg.
L-Lysine	-	175 mg.
DL-Methionine	-	150 mg.
Vitamin-C	-	200 mg.
Toxin Binders	-	200 mg.
Hepato		
Pancreatic stimulants	-	100 mg.
LDLP	-	15mg.
USFA	-	5 mg.
APF	-	30 mg.
Calcium Gluconate	-	20 mg.
Magnesium	-	25 mg.
Manganese	-	15 mg.
Cobalt	-	15 mg.
Zinc	-	25 mg.
Selenium	-	2.5 mcg.
Protein Hydrosylate	-	1000 mg.
Betaine Hydrochloride	-	1000 mg.

BENEFITS :

Improves feed conversion and growth rate. Enhances resistance against diseases. Ensures uniform growth. Neutralizes imbalances of Vitamins, Minerals, Amino Acids and Proteins Detoxify toxic materials and improves health. Improves absorption of the Calcium, Phosphorous and reduce incidence of loose shell.

DOSAGE :

50 ml per kg.
of feed or consult
your aqua technician
for specific usage
and dosage.

Presentation: 5 Ltr. & 25 Ltr.

Antibiotic Free, Steroidal Free



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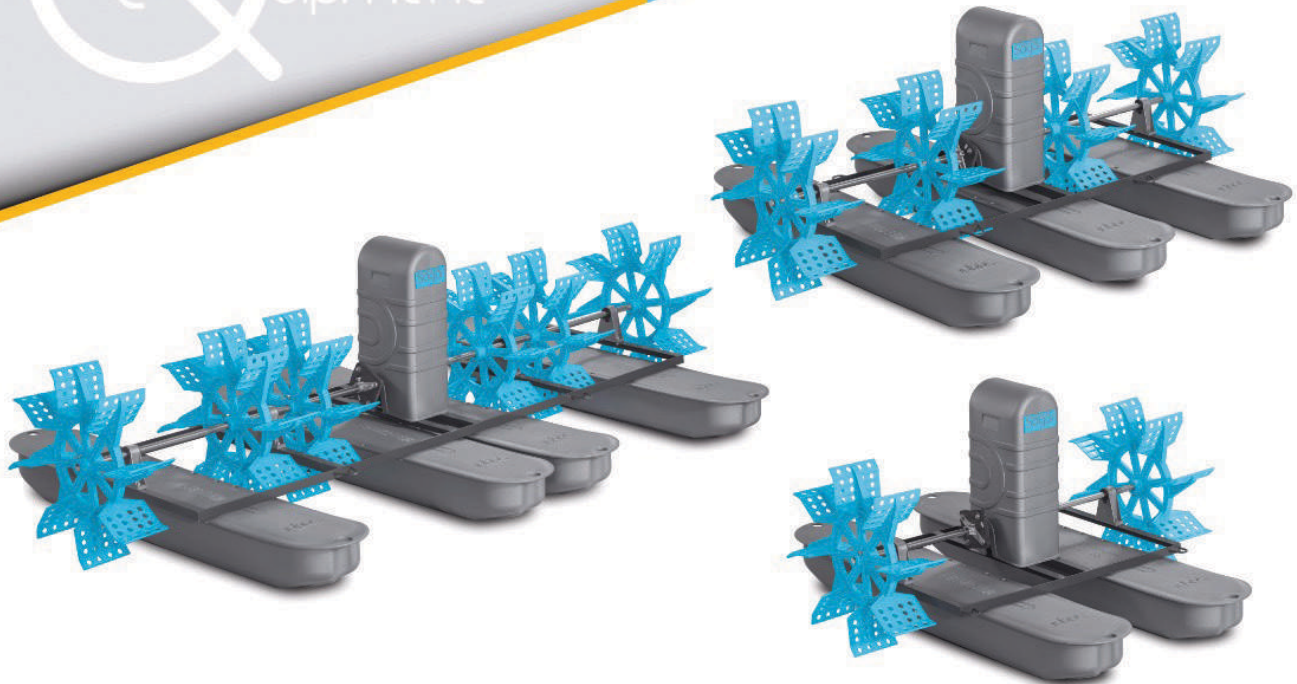




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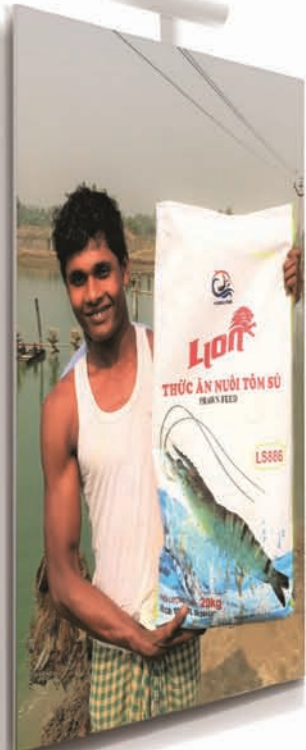
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