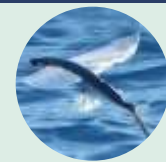




# Flying Fish

Beyond horizon...



### Message from



Dr. S.K. Tyagi, Ph.D

Project Coordinator & Principal Scientist  
ICAR-AICRP on PHET

It is my pleasure to note that College of Fisheries, Mangaluru is coming out with a quarterly newsletter called "Flying Fish" periodically. I am glad to know that the College is one of the country's premier education and research institute under the Agricultural University system of the Indian Council of Agricultural Research. New Delhi. The Post-Harvest Engineering & Technology scheme was commenced at College of Fisheries, KVAFSU, Mangaluru by the Indian Council of Agricultural Research (ICAR), Department of Agricultural Research & Education, Ministry of Agriculture, Government of India on October 2009. I am impressed with the various technical and engineering tools and gadgets which are in the pipeline, that will surely help the farmers and industry people. Under this scheme, the college has commercialized various ready to eat products through young men and women entrepreneurs which is a welcome approach. Recently, I am happy to note the release of an innovative ready to eat product, "Mathsya Siri Khadya" (Combo Kit) developed by the ICAR-AICRP on PHET by the Department of Fish Processing Technology, CoFM.

I am extremely grateful to Hon'ble Chief Minister of

### IN THIS ISSUE

In this issue, the College of Fisheries which is one of the premier, scientific research body in the country in the area of aquatic and fishery sciences, highlights some of the salient features of the college and its activities undertaken during October to December 2020

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① Launching of Mathsya Siri Khadya



② Bioluminescence



③ Meeting with Fishermen Representatives

Karnataka Shri. B.S. Yediyurappa for launching the above product on the occasion of World Fisheries Day celebration held at Bangalore on 21.12.2020. The packaged product consists of dry rotis made of ragi/jowar/rice served along with prawn chutney, tuna chutney and fish wafers. "Mathsya Siri Khadya" in addition to being delicious is also highly nutritious as millet rotis served are an essentially rich source of iron, calcium, vitamin D, amino acid and are proven to be gluten-free, low fat and highly alkaline, that has several health benefits such as improving digestion, controlling diabetes, weight loss etc. "Mathsya Siri Khadya" has been economically priced and affordable. "Mathsya Siri Khadya" will be produced at College of Fisheries, KVAFSU, Mangaluru, quality checked and packed in hygienic and scientific manner. This venture of

College of Fisheries along with Karnataka Fisheries Development Corporation (KFDC) is a step towards "Athmanirbhar Bharath" visualized by Hon'ble Prime Minister of India. I am also informed that the College is obtaining all necessary statutory clearances from FSSAI and other relevant agencies before the product is distributed or commercially launched.

I sincerely appreciate the efficient utilization of the available resources and I am sure that the team keeps up the similar good work in public interest in the days ahead. I wish the College of Fisheries, Mangaluru all success in bringing out innovative technologies and developmental activities.

Best Regards,

Dr. S. K. Tyagi



Date: 11 December 2020  
Place: Ludhiana, Punjab

## Environment and Fisheries

### College of Fisheries submits a proposal on viable dredging model

The College of Fisheries, Mangaluru has been requested to submit a proposal to the State Government on a viable dredging management plan for Mangaluru fishing harbour. CoFM approached national centre for sustainable coastal zone management, MoEFCC Gol, Chennai prepared a dredging management plan of Mangaluru fishing harbour based on model MIKE21 using 3 modules viz. Hydrodynamics (MIKE21HD), Spectral Waves (MIKE21SW) and Sediment Transport (MIKE21ST) simulations taking into consideration parameters such as wave dynamics, circulation features, water level variations, sediment dynamics etc. in and around the port vicinity. The report submitted contains key findings and recommendations with regard to sediment dredging along the eastern and western bank of the fishing harbour. The suggestions could be taken up by the State Government to undertake dredging and desilting works for enhancing easy movement of fishing boats and cargo vessels. CoFM is grateful to Prof. Ramesh Ramachandran, Director, NCSCM, Dr. Subba Reddy and the team for carrying out the study and preparing the report. Read more: <https://bit.ly/3fUehuz>

### Launching of “Mathsya Siri Khadya”



The Department of Fish Processing Technology, CoFM under the project ICAR-AICRP on PHET has developed a ready-to-eat product called 'Matsya Siri Khadya'. The product is a combo kit consisting of dry rotis made of either ragi/jowar/rice served along with prawn chutney, tuna fish chutney, prawn chutney powder and fish wafers. 'Mathsya Siri Khadya' was launched by Honorable Chief Minister of Karnataka Shri B.S. Yediyurappa, in the presence of Shri Kota Shrinivas Poojary - Hon'ble Minister of Port and Inland water transport, MLA's Shri K. Ragupathi Bhat and Shri S. Kumar Bangarappa, GoK, on the occasion of World Fisheries Day celebration held at Vidhana Soudha, Bengaluru on 21.11.2020. (Picture 1 on page 1)

### Dakshina Kannada-Udupi coastal waters witnesses bioluminescence

Mid November of 2020, the coastal waters along the Dakshina Kannada and Udupi coast was seen to emit a dazzling neon glow at night. People were seen rushing to the beaches to witness the bluish glow phenomenon referred to as “bioluminescence”. A team of scientists from CoFM analysed the water samples and identified the luminous phenomenon to be due to high concentration of the dinoflagellate (Zooplankton) *Noctiluca scintillans* commonly known as 'Sea sparkle'. Press statements based on water and sediment analysis were issued wherein the Dean, CoFM appraised the public that such blooms could be a consequence of low oxygen, high nitrogen & phosphorus levels, sea water temperature rise and pollution due to high quantities of organic material such as sewage and effluents being let off into the sea. CoFM scientists are tracking the bloom further, to find if there were any fish kills in the area or harmful effects on fishermen. Read more : <https://bit.ly/3m0PAiw>



### World Fisheries Day 2020 celebration in Thota Bengre



The World Fisheries Day 2020 was celebrated at Thota Bengre, Mangaluru in collaboration with Mahila Samaja, Girls Islamic Organization, Bengre unit on 22.11.2020. The theme for this year was 'WORLD FISHERIES DAY 2020, CELEBRATING OUR COASTAL PRIDE'. The college was represented by Assistant Professors from the Department of Fisheries Economics, Statistics and Extension. The function was attended by more than 80 fisherwomen. The CoFM staff appraised these fisherwomen on small scale business opportunities, various Government schemes and loans available. The staff also stressed on the topics of coastal cleanliness, personal hygiene and the role of women in bringing about a change in the fishing community. Several fisherwomen were felicitated on the occasion for their dedicated service in the field of fisheries.

### Afforestation programme at CoFM

Under the 'Green Campus' drive at CoFM, large scale planting of trees was undertaken in vacant land of the college and farm premises. Afforestation was supported by the State Forest Department, Mangaluru Branch under its AOA (Afforestation in other Areas) program. Under the scheme, a total of 300 saplings of various types including jackfruit, mango, wild jack, renja, redsander, teakwood etc. were provided and planted by the Forest Department in and around the campus. It is proposed to plant more than 2000 saplings in the campus and also create a herbal garden and nursery. The CoFM is thankful to Dr. Karikalam DFO and his team consisting off Shri P. Sridhar Zonal Forest Officer, Mangaluru zone, Shri. Krishna Nayak Subzone Forest Officer, Mangaluru zone & Smt. Veena, Conservator of Forests, Mangaluru zone of the State Forest Department.



## Activities

### Highlights of Blue Revolution

The World Bank India has assigned the College of Fisheries, Mangaluru to undertake "Rapid Assessment of Blue Economy (BE) potential of Karnataka". The report has been completed and the draft final report submitted to the World Bank. Some of the major recommendations to promote Blue Revolution in the country and State of Karnataka include:

#### @ The National level

- Establish an Inter-Ministerial group at Gol to address promotion of BE.
- Promote science, technology and research in the area of BE.
- Promote human resources and skill development to address BE.
- Rehabilitate and restore a degraded aquatic environment.
- Stringent enforcement of environmental regulation to safeguard aquatic systems.
- Predict impacts of climate change on aquatic environments and take measures.
- Promote harnessing of renewable energy such as ocean-tidal, wave, thermal, current osmotic, solar, wind and from marine biomass.
- Reduce capture fishing and promote fish and shellfish mariculture, seaweed and oyster culture.
- Enhance research in extraction of aquatic pharmaceutical and biotechnology.
- Enhance research and production of food for humans and animals, chemicals, bio fuel from aquatic environments.
- Develop and promote aquatic based tourism, recreational activities and aquatic sports.
- Develop coastal and marine disaster management plan to mitigate natural disasters.

#### @ The Karnataka State level

- Provide alternative livelihoods to marine fishing community to reduce pressure on coastal and marine fishing.
- Impose fishing ban of 3-4 months in coastal water.
- Regulate mechanized fishing in 6 km from coast line and promote only traditional and artisanal fishing.
- Develop cold chain, appropriate road, rail and waterways network to transport fish and fish products in the shortest time.
- Promote integrated reservoir aquaculture in PPP mode to develop hatcheries, grow-out cages, ornamental fish and plants, feed plants, cold storages along with tourism.
- Control pollution of rivers and lakes and rejuvenate the water bodies especially in urban areas.
- Develop marketing and distribution including promotion of value added products.
- Improve infrastructure and capacity of the State Fisheries Department.
- Introduce a comprehensive legal framework and enforcement mechanism for fisheries development.

### Fishco's Family - Recipe Corner

#### Spinach/Basale prawn curry

##### Ingredients

Spinach/Basale - 1 bunch  
Prawns cleaned and deveined - 500 gms

##### For Masala

Grated coconut - 1 cup  
Red chilli long - 6  
Red chilli round - 4  
Coriander seeds - 2 tsp  
Peppercorn - 1/2 tsp  
Cumin seeds - 1 tsp  
Fenugreek seeds - 1/4 tsp  
Onion - 1 small  
Garlic - 4 to 5 cloves  
Turmeric powder - 1/4 tsp  
Tamarind - marble sized ball

In a pan heat 2 tsp of coconut oil, add dry chillies, coriander, cumin, fenugreek seeds, peppercorn and fry on a medium flame until it turns light brown.



Cool and grind it along with grated coconut, turmeric, tamarind, onion and garlic. Blend it to a smooth paste by adding water as required.

##### For tempering -

Mustard seeds - 1 tsp  
Garlic - 5 pods crushed  
Curry leaves - 1 spring  
Coconut Oil - 2 tsp

##### Method:

- To a bowl add cleaned prawn, add 1/2 tsp turmeric, 1/2 tsp salt, mix and keep aside.
- Separate the leaves and stems of Spinach/ Basale and wash them properly - Roughly chop the leaves and cut the stems into 4-inch pieces.
- Pressure cook (2 whistles) the stems and leaves in 1-2 cups of water and salt
- To a pan, transfer the cook spinach. Add the ground paste and cook on medium flame for 10 mins.
- Now add the cleaned fresh prawns and cook for another 5 minutes. Switch off the flame.
- For tempering - take 2 tsp of oil in a pan, when hot add mustard till it crackles, add crushed garlic and curry leaves and fry until aromatic. Finally, add this to the curry, stir. Serve hot with rice.



Recipe by:  
Mrs. Vandana K. CoF, Mlore

## Fisheries Research/Publications

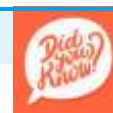
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## Fun Facts - Horseshoe Crab



Kingdom : Animalia  
 Phylum : Arthropoda  
 Subphylum : Chelicerata  
 Order : Xiphosura  
 Suborder : Xiphosurida  
 Family : Limulidae

- Horseshoe crabs are “living fossils” having originated 450 million years ago, much before dinosaurs.
- They are called ‘Horseshoe crabs’ due to their arc shaped carapace resembling a horse's shoe.
- The crabs have a long sharp spike-like tail called telson, which are mainly used to steer and flip themselves over.
- An individual crab has 9 eyes- two primary compound eyes on the upper surface of the body and seven secondary simple eyes on the underside - making them very sensitive to the world around it.
- They grow to a length of more than 2 feet. Females are 20-30% bigger than males and can weigh twice as much. Highest recorded weight of horseshoe crab is 9.5 kgs.
- They take 9-12 years to mature. Females can lay between 60,000-120,000 eggs in a batch.
- They feed on algae, marine worms, mollusc and dead fish.
- Their blood is blue due the presence of a copper containing protein .
- The Limulus Amebocyte Lysate” (LAL) extracted from these crabs are used for the detection of bacterial endotoxins and in other biomedical purposes.
- Horseshoe crabs are endangered and listed as vulnerable by the National and International Union for the Conservation of Nature.



## Staff and Student News



### Congratulations

CoFM congratulates **Shri. Nithin Kumar** for taking over as the Chairman of Karnataka Fisheries Development Corporation (KFDC) for the second term. CoFM wishes him all the best!

### Superannuation:

**Mr. Manjunath T. C.**, Farm labour, College of Fisheries superannuated on 30.11.2020. CoFM wishes him a happy retired life



### Obituary

The CoFM mourns the death of six fishermen brothers Shri. Preetham, Shri. Panduranga Suvarna, Shri. Jiavulla, Shri. Ansar, Shri. Hassainar and Shri. Chintan due to boat mishap “Sri. Raksha” off the Ullal coast, Manguluru on 30.11.2020.

CoFM expresses deep condolences to the bereaved families.



### Dean's Desk

The staff of College of Fisheries began this year very enthusiastically as we were in the process of celebrating the College Golden Jubilee Event. All preparations were completed and international and national dignitaries confirmed their participation and a mega event was to be held in March 2020. However, on account of COVID-19 the entire establishment came to halt. However, my staff did not lose heart and continued working. Several projects including PMMSY, Blue Revolution, Upgradation of college infrastructure, social forestry etc. One of the major achievements was the launching of ‘Matsya Siri Khadya’ by the Hon'ble Chief Minister of Karnataka on 21.11.2020. I congratulate all my colleagues and especially my ‘Flying Fish’ team for their hard and dedicated work.

I will be extremely happy to receive comments and suggestions at the below given feedback email.

We're on the Web! [www.cofm.edu.in](http://www.cofm.edu.in)  
 Suggestions and feedback to  
[newsletter@cofm.edu.in](mailto:newsletter@cofm.edu.in)

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