

## Intake capacity

A maximum 10 participants (in one batch) will be selected after screening.

## Schedule

### Five days – Four Batches

14-18 Mar 2022

10-14 Oct 2022

12-16 Dec 2022

13-17 Feb 2023

Mode of Training : Virtual / Physical

## Note

Only ST Candidates will be eligible

## Course Fee

The training expenses will be sponsored by TSP

## PROGRAM DIRECTOR

**Dr. N. P. Sahu**

Director / Vice-Chancellor  
ICAR-CIFE

## COURSE DIRECTOR

**Dr. K. V. Rajendran**

HEAD,  
AEHM Division  
ICAR-CIFE

## COURSE COORDINATORS

**Dr. S. P. Shukla**

**Dr. Rathi Bhuvaneshwari G.**

**Dr. Martin Xavier (TSP)**

How to apply

**Dr. S. P. Shukla,**

Principal Scientist,  
Aquatic Environment and Health Management Division,  
ICAR-CIFE, Mumbai.

email: [spshukla@cife.edu.in](mailto:spshukla@cife.edu.in),

Office: 022-26361446-48 (Ext 272)

Mob.: 9821654291

**Duration of the training**  
**5 days**

## Venue

Aquatic Environment and Health Management Division,  
ICAR-Central Institute of Fisheries Education,  
Panch Marg, Off Yari road, Versova, Mumbai 400061

**Tribal Sub - Plan**

Sponsored

**Short-term Training Programme**

on

**Technical know-how for *Spirulina*  
biomass production and utilization**



**ICAR-Central Institute of Fisheries Education,  
(Deemed University, ICAR)**

Off Yari road, Panch Marg,  
Versova, Mumbai 400061

**Website : [www.cife.edu.in](http://www.cife.edu.in)**

## Background of the training

Spirulina (Arthrospira) platensis is a commercially important cyanobacterium which can grow in water with high salt concentration and high pH (9.0-9.5). It is considered as a superfood of 21st century due to its high protein content (50-70%) and adequate quantities of vitamins, minerals and poly-unsaturated fatty acids (PUFA, eg. gamma linolenic acid). The pigment phycocyanin found in Spirulina is an effective anti-carcinogenic compound whereas, percarotene abundant in Spirulina, is a powerful antioxidant. Spirulina is high in amino acid content and contains all the essential fatty acids required for good human health.

### Benefits of Spirulina

- Spirulina intake mitigates the effects of Arsenic toxicity. Spirulina extract (250mg + 2mg Zinc in 100ml) given to 24 patients twice daily showed that Spirulina-zinc combination resulted in a decrease of 47% in the Arsenic level in the bodies of the patients
- Spirulina intake improves immune response towards HIV.
- Spirulina intake increases the production of antibodies that help in fighting cancer cells.
- Spirulina is a rich source of tetrapyrrolic compounds which are potent anti-oxidant and anti-proliferative agent.
- Phycocyanin- a pigment found in Spirulina showed antihypertensive effects.
- @An addition of Spirulina to high cholesterol diet showed a decrease in Low Density Lipids (LDL) and increase in High Density Lipids (HDL).
- Intake of Spirulina by children showed better cognitive skills, reversal of anaemia and overall malnutrition effects.
- Spirulina protects aged population from Alzheimer, Parkinson and other neuro-degenerative diseases.
- The biomass of Spirulina (powder or slurry) can be used as an ingredient for the development of value added products such as health drinks, yoghurt, candies, bakery items, natural colorant for fish and poultry products,
- natural colorant for liquor and medicines.
- Spirulina biomass and its value added products can be used in cosmetic industries

## Short-term Training Programme on Technical know-how for *Spirulina* biomass production and utilization

ICAR - CENTRAL INSTITUTE OF FISHERIES EDUCATION

ICAR-Central Institute of Fisheries Education (CIFE), in over 50 years of existence, has emerged as a Centre of Excellence in Higher Education in Fisheries and allied disciplines. The Institute was established on 6th June 1961, under the Ministry of Agriculture, Govt. of India with assistance from FAO/UNDP. It came under the administrative control of Indian Council of Agricultural Research (ICAR) in 1979. Considering the wide mandate involving education, research and extension and recognizing the pivotal role played by CIFE in human resources development in fisheries, the institute was conferred the status of Deemed-to-be-University in 1989. The institute with its core strength in quality teaching, research and training has become a brand name in fisheries higher education. ICAR-CIFE is now placed in a new campus with state-of-the-art facilities and located about 8 km from the domestic and international airports and 20 km from Dadar railway station, a major rail terminus in Mumbai. The Versova metro station (Versova-Ghatkopar route) is at walking distance from both the campuses.

### Training objective:

To provide hands-on experience/training for *Spirulina* (Arthrospira) platensis biomass production and its utilization

### Application:

Interested candidates are encouraged to contact Dr. S.P. Shukla / Course Coordinator directly by email or phone during the office hours (10 am to 5 pm) on working days. Application can also be sent by post addressed to Dr. S.P. Shukla / Course Coordinator

### Training content: (Theory and hands-on sessions)

- ▶ Overview of various applications of *Spirulina* and its commercial value
- ▶ Media preparation, Microscopic study of *Spirulina*
- ▶ Mother culture production and maintenance in air-lift units and FRP tanks
- ▶ Overview and demonstration of methods for growth measurement and harvesting
- ▶ Mass cultivation in outdoor tanks
- ▶ Demonstration and training for Harvesting and drying of biomass
- ▶ Estimation of quality of biomass on the basis of protein content

