

Invitation to LECTURE by Dr. Saurav Kumar

Doctor at ICAR-Central Institute of Fisheries Education,
Aquatic Environment & Health Management Division, Versova,
Andheri (West), India

Lecture

**„Risk associated with biotic and abiotic stressors
to fish and potential remedial approaches:
Learning from Argulus parasite and Triclosan”**

Date & Place

Friday, February 10, 2023, 13:00 – 14:30
FFPW, Zátiší 728, Vodňany
large meeting room

Abstract

Intensification and diversification of aquaculture system is managed with numerous inputs that create stress on fish. Acute or chronic exposure to biotic and abiotic stressors leads to maladaptation in fish and negatively affects the physiological and growth performance like biomass, development, disease resistance, behavior and reproductive fitness. Argulus is a macro crustacean ectoparasite infesting more than hundreds of fish species. The parasitism causes biotic stresses on host and severely alter the physiological and survival possibility of infected fish. The experimental challenge study of Argulus exposure to fish of various life stage showed varying degree parasitism and modulation in vital marker genes of inflammatory and immune system. Similarly abiotic stressor like polluted water with triclosan (TCS), an emerging contaminant; frequently occurred in natural water is contaminated via untreated or partial treated sewage. Exposure of fish to TCS results in cytotoxicity, genotoxicity, and immunosuppression and alter the antibiotic resistance. Researchers attempted to quantify the risk associated with these stressors and proceeded with developing potential remediation measures like phytomedicine & vaccine to control Argulus parasite and bioremediation and physical entrapment of TCS from contaminated water. Future investigations are necessary to developing adequate remedial measures for making healthy environment to accomplish the Global Sustainable Plan.

Key words: Argulus parasite, triclosan, stressors, toxicity, remediation

Curriculum Vitae



Dr. Saurav Kumar

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Education

S. No.	Degree	Year of passing	Discipline	School/College/University	%Marks/OGPA
1.	Doctor	2018	Aquatic Animal Health	ICAR-CIFE, Mumbai	8.87/10.0
2.	Post Graduate	2011	Fish Pathology and Microbiology, CIFE	ICAR-CIFE, Mumbai	8.61/10.0
3.	Graduation	2009	Fisheries Science	COF, Mangalore	8.76/10.0

Current Scientific Research Program

Project completed: Risk assessment of emerging pollutant, triclosan: environmental risk assessment, toxicological impact on algae, bacteria and fish. Developing integrated technology for remediation of triclosan from waste water; immunomodulatory and antiparasitic effects of Azadirachtin against crustacean ectoparasite *Argulus* spp. in goldfish (*Carassius auratus*) worked on Haemato-immunological profiles of goldfish fed with experimental diet with various concentration of Azadirachtin; development of in vitro and in vivo experiment for evaluation of antiparasitic efficacy of Azadirachtin solution against *Argulus* spp. infested on goldfish

Skills and expertise

Fish Toxicology, Ornamental Fish, Fish Biology, Fish Pathology, Fish Physiology, Fish Histology, Fish Immunology, Aquaculture Management, Fish Diseases, Aquatic Animal Health, Hematological and immunological profiling technique, Water Quality Analysis, SPSS Statistical Analysis, Probit Analysis

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