

**CHRIST**(DEEMED TO BE UNIVERSITY)
BANGALORE | DELHI NCR | PUNE

Notice for the PhD Viva Voce Examination

Ms Monica Suresh, Registration Number: 2190017, PhD Scholar at the Department of Life Sciences, School of Sciences, CHRIST (Deemed to be University) will defend her PhD thesis at the public viva-voce examination on Friday, 15 May 2026 at 11.30 am in Room No. 628, 6th Floor, R&D Block, CHRIST (Deemed to be University), Bengaluru - 560029, Karnataka, India.

- Title of the Thesis** : **Evaluating the Efficacy of *Saraca asoca* on Pyrethroid Toxicity in *Oreochromis niloticus***
- Discipline** : **Biotechnology**
- External Examiner - I** : **Dr Sudha Kappalli**
Professor
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- External Examiner - II** : **Dr Balamuralikrishnan B**
Associate Professor
Department of Food Science and Biotechnology
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- Supervisor** : **Dr Manikantan P**
Associate Professor
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The members of the Research Advisory Committee of the Scholar, the faculty members of the Department and the School, interested experts and research scholars of all the branches of research are cordially invited to attend this open viva-voce examination.

Place: Bengaluru
Date: 21 April 2026


Registrar (Academics)

ABSTRACT

The expanding population dynamics necessitate the agriculture sector around the world to extensively rely on pesticides in order to ensure food security. In India, the use of insecticides like pyrethroids and organophosphates has been increasing over time, which has also been identified in our survey study. Pyrethroids, such as cypermethrin (CP), despite their role in controlling pests, emerged as contaminants in the environment and pose substantial risks to aquatic beings that are not their intended targets. This is mainly due to a lack of a proper detoxification system in them. As lipophilic compounds, pyrethroids can accumulate in the lipid bilayer of these organisms, especially edible ones like *Oreochromis niloticus*, and transmit to the subsequent trophic level, eventually reaching the consumer, humans. Often, these toxic effects exacerbate the fish's susceptibility to diseases, which is a major concern in aquaculture. In our study, the *S. asoca* in the form of supplemented feed had the potential ability to mitigate the oxidative stress and structural integrity in the tissue, which is generated due to CP stress. *S. asoca* were also able to maintain a stable hematology index and alter the biochemical components in *O. niloticus*. Additionally, the role of *S. asoca* extracts in treating the potential pathogenic strains of *O. niloticus*. Thus, the present investigation aids tracking of physiological variations in the fish caused by factors such as nutrition, water quality, or disease, making it an important tool in biomonitoring projects.

Keywords: *O. niloticus*; pyrethroid toxicity; *S. asoca*; antibacterial; antioxidant; ameliorative effects

Publications:

1. **Suresh M**, Pappuswamy M. *Saraca asoca* (Roxb.) de Klilde, a sacred tree: its nutritional value, elemental composition and anti-nutritional content. *Plant Sci Today*. 2024 Oct 21;11(4). <https://doi.org/10.14719/pst.3924>
2. **Suresh M**, Pappuswamy M. Characterization of bioactive compounds from *Saraca asoca* and their antibacterial activity against fish pathogens in *Oreochromis niloticus*. *Plant Sci Today*. <https://doi.org/10.14719/pst.7346>