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Notice for the PhD Viva Voce Examination

Mr Abhiram Suresh (Registration Number: 2071701), PhD scholar at the School of Sciences, CHRIST (Deemed to be University), Bangalore will defend his PhD thesis at the public viva-voce examination on Tuesday, 12 December 2023 at 10.30 am in Room No. 044, Ground Floor, R & D Block, CHRIST (Deemed to be University), Bengaluru - 560029.

Title of the Thesis	:	**Exploring the Multifaceted Benefits of *Strobilanthes Jomyi* P. Biju, Josekutty, Rekha & J. R. I. Wood: A Comprehensive Pharmacognostic Investigation on its Medicinal and Insecticidal Properties**
Discipline	:	**Botany**
External Examiner (Outside Karnataka)	:	**Dr S R Senthil Kumar** Associate Professor PG and Research Department of Botany St Joseph's College Tiruchirappalli - 620002 Tamil Nadu
External Examiner (Within Karnataka)	:	**Dr K R Kavitha** Associate Professor Department of Botany Nrupathunga University Sampangi Rama Nagara Bengaluru Karnataka - 560009
Supervisor	:	**Dr Jobi Xavier** Associate Professor Department of Life Sciences CHRIST (Deemed to be University) Bengaluru - 560029 Karnataka

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.

Registrar

Place: Bengaluru
Date: 05 December 2023

ABSTRACT

Plant-based medication is a well-established practice in Indian medicine, involving the direct use of raw plant parts for treating health conditions. Over time, valuable components have been identified, isolated, and utilized to treat diseases. The Strobilanthes Blume genus, with a rich therapeutic history, is of special interest in India, China, Myanmar, and Thailand. A new species within this genus, *Strobilanthes jomyi*, was discovered in Kerala, India, and used by tribal communities in Kasaragod for wound healing. This study aimed to comprehensively evaluate the medicinal properties of *S. jomyi* leaves, stem, and root. Analyses included microscopic, macroscopic, organoleptic, fluorescent, physicochemical, mineral composition, phytochemical, Gas Chromatography–Mass Spectrometry, antioxidant, anthelmintic, insecticidal, antimicrobial, and cytotoxicity assessments. Methanol was used for Soxhlet extraction, and standard protocols were followed. Macroscopic and microscopic examinations revealed non-glandular trichomes and paracytic stomata in leaves, raphides in stem and petiole, and tannin cells in roots. Cystoliths were observed in the petiole. Powder analysis showed fibers, trichomes, palisade cells, spiral xylem vessels, bordered pit vessels, and raphides in all parts.

Leaves exhibited higher phenolics, flavonoids, carbohydrates, proteins, proline, and chlorophyll content compared to roots and stem. Additionally, methanolic leaf extract demonstrated superior antioxidant activity. Gas Chromatography–Mass Spectrometry analysis identified bioactive compounds, such as 2,4-di-tert-butyl phenol, phytol, squalene, phenol, neophytadiene, and lupeol in all parts. Remarkably, all vegetative parts of *S. jomyi* exhibited excellent anthelmintic activity, with leaves showing the highest efficacy, followed by roots and stems. The insecticidal activity was only observed in the leaf extract. Furthermore, significant antimicrobial and anti-cancerous activities were observed across all parts. These findings highlight the potential of *S. jomyi* as a valuable medicinal resource, enabling standardization, identification, and quality assessment of plant samples. It is a promising candidate for drug development against helminthic and microbial infections, cancer, and as a potential agricultural pesticide.

***Keywords**: Pharmacognosy; phytochemistry; anti-oxidant; ant-microbial; anthelmintic; cytotoxicity; insecticidal activity.*

Publications:

1. **Suresh** and J. Xavier, "A pharmacognostic approach, including phytochemical and GC-MS analysis, targeted towards the authentication of *Strobilanthes jomyi* P. Biju, Josekutty, Rekha & J.R.I.Wood," Plant Science Today, Feb. 2023, doi: 10.14719/pst.2104.
2. **Suresh** and J. Xavier, "Comprehensive Phytochemical, Anti-Oxidant and GC-MS Analysis of *Strobilanthes jomyi* P. Biju, Josekutty, Rekha & J.R.I.Wood," Asian Journal of Plant Sciences, vol. 22, no. 2, pp. 227–238, Mar. 2023, doi: 10.3923/ajps.2023.227.238.