

Kannan Mani, Ph.D.

Postdoctoral Research Associate

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Professional Summary

I am a highly experienced researcher specializing in insect physiology and molecular biology. Over the past 14 years, my work has focused on beneficial insects such as the Black Soldier Fly, Silkworm, and Honeybee, investigating their use in food and feed, as well as enhancing silk and honey productivity. Additionally, I have explored eco-friendly methods to control insect pests like *Spodoptera litura* and banana weevils. I have a robust publication record, with over 15 research papers as the main author and 20 as a co-author. My expertise includes a range of molecular techniques, including protein, RNA, and DNA extraction, gene cloning and expression, 2D-PAGE, Q-PCR, gene silencing, FISH, and metabolomics. I am proficient in operating GC-MS and conducting behavioral experiments. My interests also encompass developing new projects, teaching, and supervising undergraduate, master's, and graduate students.

Education

- **Doctor of Philosophy in Biotechnology (2012-2017)**
Thesis title: Molecular characterization and functional analysis of gut serine protease (37 kDa) of *Bombyx mori*
Advisor: Prof. M. Krishnan
Department of Environmental Biotechnology, Bharathidasan University, Tiruchirapalli, Tamil Nadu, India.
- **Master Degree in Biotechnology (2008-2010)**
Dissertation title: Angiotensin converting enzyme (ACE) insertion/deletion polymorphism in a selected endogamous population of Tamil Nadu, India
Advisor: Prof. K. Balakrishnan
Department of Biotechnology, Bharathidasan University, Tiruchirapalli, Tamil Nadu, India.
Marks obtained: 67%
- **Bachelor Degree in Zoology (2005-2008)**
Department of Zoology, National College, affiliated with Bharathidasan University, Tiruchirapalli, Tamil Nadu, India.
Marks obtained: 81%

Research and Working Experience

- **Postdoctoral Research Associate**
Project Title: Multidimensional analysis of honey bee collected pollen nutrients
Department of Entomology, Texas A&M University, Heep Building, Room 309, College Station, TX, USA
Mentors: Dr. Juliana Rangel Posada and Dr. Spencer T. Behmer
Dates: March 1, 2024 – Present

- **Post-Doctoral Fellow**
Project Title: The superpower of fungi: Unraveling their metabolic effects on insects in a decaying environment
 Department of Nutrition, Migal, Kiryat Shmona, Israel
Mentor: Dr. Itai Opatovsky
Dates: January 31, 2022 – January 30, 2024
- **ARO-Post Doctoral Fellow**
Project Title: Mechanism of Varroa chemo sensing of honey bee
 Agricultural Research Organization, Bet-Dagan, Israel
Mentor: Dr. Victoria Soroker
Dates: May 2019 – July 2021
- **SERB-National Post-Doctoral Fellowship (NPDF)**
Project Title: Identification of Host Plant Volatiles and Odorant-Binding Proteins from Banana Stem Weevil, *Odoiporous longicollis* (Coleoptera: Curculionidae) Antennae for Monitoring and Management of the Pest
 ICAR-National Research Centre for Banana, Thayanur (Post), Tiruchirapalli, Tamil Nadu, India
Mentor: Dr. B. Padmanaban
Dates: April 2, 2018 – March 31, 2019
- **Junior Research Fellow (JRF)**
Project Title: Studies and evaluation of larvicidal effect and doses of electron beam using Microtron irradiation as an effective method for pest control
 Department of Environmental Biotechnology, Bharathidasan University, Palkalaiperur, Tiruchirapalli, Tamil Nadu, India
Mentor: Prof. M. Krishnan
Dates: December 31, 2010 – December 31, 2013

Recent Publications

1. **Kannan, M.,** Vitenberg, T., Schweitzer, R., & Opatovsky, I. (2024). Hemolymph metabolism of Black Soldier Fly *Hermetia illucens* (Diptera: Stratiomyidae) response to different supplemental fungi. *Journal of Insect Science*, 24(3), 5. (Impact factor: 2.2).
2. **Mani, K.,** Vitenberg, T., Khatib, S., & Opatovsky, I. (2023). Effect of entomopathogenic fungus *Beauveria bassiana* on the growth characteristics and metabolism of black soldier fly larvae. *Pesticide Biochemistry and Physiology*, 197, 105684. (Impact factor: 4.7).
3. **Kannan, M.,** & Opatovsky, I. (2023). A review on nutritional and non-nutritional interactions of symbiotic and associated fungi with insects. *Symbiosis*, 1-11. (Impact factor: 2.3).
4. **Kannan, M.,** Vitenberg, T., Ben-Mordechai, L., Khatib, S., & Opatovsky, I. (2023). Effect of yeast supplementation on growth parameters and metabolomics of black soldier fly larvae, *Hermetia illucens* (L.) (Diptera: Stratiomyidae). *Journal of Insects as Food and Feed*, 1-12. (Impact factor: 5.0).
5. **Mani, K.,** Vitenberg, T., Ben-Mordechai, L., Schweitzer, R., & Opatovsky, I. (2023). Comparative untargeted metabolic analysis of natural- and laboratory-reared larvae of black soldier fly, *Hermetia illucens* (L.) (Diptera: Stratiomyidae). *Comparative Biochemistry and Physiology Part B: Biochemistry and Molecular Biology*, 266, 110851. (Impact factor: 2.4).