

Brief Profile



Name	DR GAURAV KUMAR
Current Designation	TECHNICAL OFFICER B
Research Discipline	Development of novel vector control tools; bionomics studies; insecticide resistance and impact of climate change on vector borne diseases
Department / Division	VECTOR BIOLOGY AND CONTROL
Date of joining the current post	01.04.2019
Date of joining ICMR	29.05.2008
Official E-mDail ID	kumar.gaurav.nimr@gov.in ; gauravnimr@gmail.com
Educational Qualification	M.Sc. (Biochemistry), Ph.D. (Biotechnology)
Research experience (in years):	16
Research Interest/Thrust Areas	
Development of novel vector control tools i.e. attractive toxic sugar baits and slow-releasing formulation of insecticidal paints; bionomics of malaria vectors; insecticide resistance monitoring in different eco-epidemiological regions; role of mosquito cuticles in conferring insecticide resistance and impact of climate change on vector-borne diseases	
Number of projects handled as:	
Principal Investigator - 3	
Co-Principal Investigator - nil	
Co-investigator- 17	
Number of doctorate / post-doc students mentored	
As Guide - nil	
As Co-guide - nil	
List of significant publications (Please give the details of the publications in APA format)	
<ol style="list-style-type: none">1. Kumar G, Singh RK, Pande V, Dhiman RC. Impact of container material on the development of <i>Aedes aegypti</i> larvae at different temperatures. <i>J Vector Borne Dis</i> 2016; 53(2): 144–148.2. Kumar D, Kumar G and Agrawal V. Green synthesis of silver nanoparticles using <i>Holarrhena antidysenterica</i> (L.) Wall. bark extract and their larvicidal activity against dengue and filariasis vectors. <i>Parasitol Res.</i> 2018; 117(2):377-389.3. Kumar D, Kumar G, Das R and Agrawal V. In vitro elicitation, isolation and characterization of conessine biomolecule from <i>Holarrhena antidysenterica</i> callus and its larvicidal activity against malaria vector, <i>Anopheles stephensi</i>. <i>Environ Sci Pollut Res Int.</i> 2018; 25(7):6783-6796.4. Kumar D, Kumar G, Das R and Agrawal V. Strong larvicidal potential of silver nanoparticles (Ag NPs) synthesized using <i>Holarrhena antidysenterica</i> (L.) Wall. bark extract against malaria vector, <i>Anopheles stephensi</i> Liston. <i>Process Saf. Environ. Prot.</i> 2018; 116: 137–148.5. Kumar G, Pande V, Pasi S, Ojha VP and Dhiman RC. Air versus water temperature of aquatic habitats in Delhi: implications for transmission dynamics of <i>Aedes aegypti</i>. <i>Geospatial Health</i> 2018; 13(707): 330-335.6. Dhiman RC, Singh P, Yadav Y, Saraswat S, Kumar G, et al. Preparedness for malaria elimination in the wake of climate change in the State of Uttarakhand (India). <i>J Vector Borne Dis</i> 2019; 56: 46–52.7. Haq S, Kumar G and Dhiman RC. Interspecific competition between larval stages of <i>Aedes aegypti</i> and <i>Anopheles</i>	

- stephensi. *J Vector Borne Dis* 2019; 56(4): 303–307.
8. Pramanik MK, Singh P, Kumar G, Ojha VP, Dhiman RC. El Niño Southern Oscillation as an early warning tool for dengue outbreak in India. *BMC Public Health* 2020; 20:1498.
 9. Kumar G, Pasi S, Ojha VP and Dhiman RC. Entomological investigation of an outbreak of Japanese encephalitis in Solan district, Himachal Pradesh. *J Vector Borne Dis* 2020; 57: 43-48.
 10. Kumar G, Ojha VP and Pasi S. Applicability of Attractive Toxic Sugar Baits as a mosquito vector control tool in the context of India: a review. *Pest Manag Sci.* 2021; 77(6):2626-2634.
 11. Singh RK, Kumar G, Modak KS, Karlekar RR and Dhiman RC. Insecticides Susceptibility Status of Malaria Vectors in a High Malaria Endemic Tribal District Gadchiroli (Maharashtra) of India. *Journal of Communicable Diseases* 2021;53(3):1-18.
 12. Kumar G, Sharma A and Dhiman RC. Laboratory evaluation of the efficacy of boric acid containing toxic sugar baits against *Anopheles culicifacies*, *An. stephensi* and *Aedes aegypti* mosquitoes. *J Vector Borne Dis* 2022; 59 (1):52-56.
 13. Lata S, Kumar G, Ojha VP and Dhiman RC. Detection of *Leishmania donovani* in wild caught phlebotomine sand flies in endemic focus of leishmaniasis in Himachal Pradesh, India. *J Med Entomol.* 2022;59(2):719-724.
 14. Pasi S*, Kumar G*, Hussain SSA, and Kaur J. Rice agroecosystem and malaria risk in India. *The Lancet Planetary Health* 2022; 6(5): e384. [https://doi.org/10.1016/S2542-5196\(22\)00096-1](https://doi.org/10.1016/S2542-5196(22)00096-1).
 15. Kumar G. Etymologia: *Anopheles culicifacies*. *Emerging Infectious Diseases.* 2022; 28(8):1728.
 16. Kumar G, Shankar H. Unravelling the situation of malaria misdiagnosis in India: Its adverse impact and management strategies. *Asian Pacific Journal of Tropical Medicine.* 2022;15(7):290.
 17. Kumar G, Kaur J, Pasi S. Hurdles in achieving the goal of malaria elimination by India. *Asian Pacific Journal of Tropical Medicine.* 2022;15(7):287.
 18. Shankar H and Kumar G*. Truenat: an affordable and user-friendly option for screening of sub-microscopic *Plasmodium* infections in low resource countries. *The Lancet Reg Health Southeast Asia* 2022; 5:100032.
 19. Kumar G, Shankar H. Optimizing the utility of NIMR-MDB Vis a Vis ICMR COVID-19 data portal in containment of malaria. *Lancet Reg Health Southeast Asia* 2022; 5:100044.
 20. Kumar G, Shankar H, Pasi S, Kaur J. Asymptomatic and low-density *Plasmodium* infections in India: an unexplored link. *Pathogens and Global Health.* 2022; 116(8): 465-466.
 21. Kumar G, Gupta SK, Rahi M, Sharma A. Challenges in Understanding the Bionomics of Indian Malaria Vectors. *Am J Trop Med Hyg.* 2022; 107(5):1005-1014.
 22. Kumar G, Ojha VP, Dhiman RC. Insecticide susceptibility status of malaria vectors in Himachal Pradesh, India. *Journal of Vector Borne Diseases.* 2022; 59(3):236-240.
 23. Das MK, Rahi M, Kumar G, Raghavendra K. A note on the insecticide susceptibility status of secondary malaria vector *An. annularis* in Jharkhand state of India. *J Vector Borne Dis* 2022; 59(3):253-258.
 24. Kar NP, Kumar G, Pasi S, Ojha VP, Negi SS, Dhiman RC. Entomological investigation during an outbreak of dengue in 2018 in Bilaspur district, Himachal Pradesh. *Journal of Communicable Diseases* 2022;54(4):29-35.
 25. Kumar G, Pasi S, Yadav CP, Kaur J, Sharma A. Potential of ivermectin as an active ingredient of the attractive toxic sugar baits against the Indian malaria vectors *Anopheles culicifacies* and *Anopheles stephensi*. *Pest Manag Sci.* 2023; 79(1):474-480.
 26. Kumar G, Gupta SK, Pasi S. Attractive toxic sugar baits: a magic bullet for control of malaria and dengue in urban settings of India?. *J Vector Borne Dis.* 2023; 60(3):340-341.
 27. Kumar G, Ojha VP, Pasi S, Dhiman RC. Effect of Ultraviolet radiation on immature stages of *Aedes aegypti*, *Anopheles stephensi* and *Culex quinquefasciatus* mosquitoes. *J Vector Borne Dis.* 2023; 60(4):382-385.
 28. Common Protocol for Uniform Evaluation of Public Health Pesticides for use in Vector Control 2023. Indian Council of Medical Research, New Delhi
 29. Das R, Vashisht K, Kori L, Singh K, Kumar G, Hasan I, Gam J and Pandey KC. Detection of the infective *Plasmodium falciparum* gametocytes by RT-qPCR assay from malaria endemic region of Northeastern India. *Front. Trop. Dis* 2024; 5:1366462.
 30. Kumar G, Ojha VP, Dhiman RC. Impact of full coverage of population with Long Lasting Insecticidal Nets (LLIN) on malaria vector density in Gadchiroli district of Maharashtra. *J Vector Borne Dis.* 2024; 61(2):281-284.
 31. Kumar G, Gupta SK, Kaur J, Baharia R, Mohanty AK, Goel P, Sharma A Rahi M. Mapping malaria vectors and insecticide resistance in a high-endemic district of Haryana, India: implications for vector control strategies. *Malaria J* 2024; 23(1):107.
 32. Rahi M, Mishra AK, Chand G, Baharia RK, Hazara RK, Singh SP, Khan S, Sreehari U, Kamaraju D, Kumar G, Gupta SK, Sharma A, Raghavendra K, Gunasekaran K, Singh OP, Subbarao SK. Malaria Vector Bionomics: Countrywide Surveillance Study on Implications for Malaria Elimination in India. *JMIR Public Health Surveill.* 2024;10:e42050.
 33. Singh B, Kumar D, Kumar G, Saroha P, Vikram K, Gupta SK, Singh H. Insecticidal Paint: An Alternate Integrated Vector Management Strategy for Mosquito Control. *Process Safety and Environmental Protection.* 2024; 186:486-494.
 34. Kumar G, Baharia R, Singh K, Gupta SK, Joy S, Sharma A, Rahi M. Addressing Challenges in Vector Control: A Review of Current Strategies and the Imperative for Novel Tools in India's Combat against Vector-Borne Diseases. *BMJ Public Health* 2024; 2:e000342.
 35. Prasad P, Gupta SK, Mahto KK, Kumar G, Rani A, Velan I, Arya DK, Singh H. Influence of climatic factors on the life stages of *Aedes* mosquitoes and vectorial transmission: A review. *J Vector Borne Dis.* 2024; 61(2):158-166.
 36. Hussain SSA#, Singh K#, Chandra S#, Kumar G#, Jeena M, Pasi S, Kaur J. Changing Patterns of Jhum Cultivation in Tripura, India and their impact on Malaria. *Journal of Global Health Reports* 2024; 8:e2024022.
 37. Jeena M#, Kumar G#, Yadav CP, Lata S, Thakur Y, Kaur J, Pasi S. Polyols induce acute oxidative stress and mortality

in Indian malaria vector *Anopheles stephensi* (Diptera: Culicidae): potential for use as sugar-cum-toxin source in toxic sugar baits. *Pest Manag Sci.* 2024; 80(10):5180-5185

38. Kumar G, Pasi S, Kaur J, Singh H. Abiotic and Biotic Interactions of Mosquitoes. In: Omkar (eds) *Mosquitoes*. Springer, Singapore. https://doi.org/10.1007/978-981-97-4163-2_9
39. Lata S, Gupta SK, Kumar G, Yadav S, Mohanty SS, Prasad P, Singh B, Singh S, Saroha P, Kumar D, Singh P, Vikram K, Savargaonkar D, Singh H. Moving population is a challenge for malaria elimination in India: A cross-sectional study to assess malaria parasite infections in walking pilgrims in western Rajasthan, India. *IJID Reg.* 2024; 12:100418.

Achievements/Awards/Additional Information

Received Young Scientist Award at 15th SOMA International Conference of Medical Arthropodology held at Hyderabad. The award was provided by Society of Medical Arthropodology for promising research in medical arthropodology

Received Training on Experimental Hut evaluation of vector control products organized by Indian Council of Medical Research, New Delhi at ICMR-VCRC Puducherry field unit Koraput, Odisha from 11.08.2021 to 13.08.2021.

Received WHO GLP Training workshop on study design for testing of mosquito larvicides and space spray products held at the Vector Control Research Unit, Universiti Sains Malaysia, Penang, Malaysia.

Invited by Dr Olena Riabinina, Assistant Professor, to visit her laboratory in the Biosciences Department of Durham University, United Kingdom as an Academic Visitor for an internship from the 9th October 2023 to 24th October 2023.

Invited by Dr Rui-De Xue, Executive Director, Anastasia Mosquito Control District of St. Johns County, St. Augustine, Florida, USA to visit the district as a Visiting Scientist from September 10, 2024 to October 25, 2024.

Gaurav Kumar

Signature