

Brief Profile

Name	Dr. HIMMAT SINGH
Current Designation	Scientist 'E'
Research Discipline	Medical Entomology
Department / Division	Vector Biology and Control
Date of joining the current post	01/09/2021
Date of joining ICMR	28/07/1999
Official E-mail ID	hspawar@rediffmail.com
Educational Qualification	M.Sc. Entomology, Ph. D Zoology
Research experience (in years):	24 Years
Research Interest/Thrust Areas	
Major research focus on Vector Biology, Entomology, Molecular Entomology, Surveillance, Xenomonitoring	
Number of projects handled as:	
Principal Investigator - 10	
Co-Principal Investigator - 2	
Co-investigator -2	
Number of doctorate / post-doc students mentored	
As Guide - 6	
As Co-guide - 2	
List of significant publications (Please give the details of the publications in APA format)	
Publications since 2015	
1. Suman Lata, Sanjeev Kumar Gupta, Gaurav Kumar, Suresh Yadav, Suman Sundar Mohanty, Pooja Prasad, Bharat Singh, Sangeeta Singh, Poonam Saroha, Dinesh Kumar, Prem Singh, Kumar Vikram, Deepali Savargaonkar, Himmat Singh , 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 Regions. 2024, (12):100418 , ISSN 2772-7076, https://doi.org/10.1016/j.ijregi.2024.100418 .	
2. Deepali Savargaonkar, Renuka Gahtori, Swati Sinha, Preeti Kumari, Paras Mahale, Bina Srivastava, Veena Pande, Himmat Singh Pawar, Anupkumar R Anvikar Genotyping of paired clinical isolates using PvCSP, PvMSP3 α , PvMSP3 β and exploring STRs to differentiate between relapse and reinfection in <i>P. vivax</i> bioRxiv 2024.04.16.589389; doi: https://doi.org/10.1101/2024.04.16.589389	
3. Singh, H. , Akhtar, N., Gupta, S.K. (2024). Biology of Mosquitoes. In: Omkar (eds) Mosquitoes.	

4. Kumar, G., Pasi, S., Kaur, J., **Singh, H.** (2024). Abiotic and Biotic Interactions of Mosquitoes. In: Omkar (eds) Mosquitoes. Springer, Singapore. https://doi.org/10.1007/978-981-97-4163-2_9
5. Bharat Singh, Dinesh Kumar, Gaurav Kumar, Poonam Saroha, Kumar Vikram, Sanjeev Kumar Gupta, Himmat Singh. Insecticidal Paint: An Alternate Integrated Vector Management Strategy for Mosquito Control, Process Safety and Environmental Protection, 2024, <https://doi.org/10.1016/j.psep.2024.03.118>.
6. Alka Rani, Abhishek Gupta, BN Nagpal, Sanjeev Kumar Gupta, Anushrita, Pooja Prasad, **Himmat Singh**. Impact of urbanization on the abundance and distribution of Anophelines population in Ghaziabad district, Uttar Pradesh, India 2024, Journal of Vectorborne Diseases <https://doi.org/10.4103/0972-9062.383639>
7. Gill, J., **Singh, H.** & Sharma, A. Profiles of global mutations in the human intercellular adhesion molecule-1 (ICAM-1) shed light on population-specific malaria susceptibility. BMC Genomics 24, 773 (2023). <https://doi.org/10.1186/s12864-023-09846-9>
8. Prasad, Pooja, Gupta, Sanjeev Kumar, Mahto, Kaushal Kumar, Kumar, Gaurav, Rani, Alka, Velan, Iyyappan, Arya, Deepak Kumar, **Singh, Himmat**. Influence of climatic factors on the life stages of Aedes mosquitoes and vectorial transmission: A review. Journal of Vector Borne Diseases 61(2):p 158-166, Apr–Jun 2024. | DOI: 10.4103/jvbd.jvbd_42_24
9. Dinesh Kumar, Bharat Singh, Gaurav Kumar, Rashmi Shakya, Kumar Vikram, Anita Rani, **Himmat Singh**. Phyto-fabrication and characterization of *Alternanthera sessilis* leaf extract-mediated silver nanoparticles and evaluation of larvicidal potential. Biomass Conv. Bioref. (2023). <https://doi.org/10.1007/s13399-023-04948-6>
10. Nisha Sogan, Smriti Kala, Neera Kapoor, **Himmat Singh**, Prveen Verma, Aparna Nautiyal, Bhupender Nath Nagpa. Utilization and Re-use of Orange Peel Derived Oil by Formulating Nanoemulsion for Efficient Vector Control Application. Waste Biomass Valor 14, 3415–3427 (2023). <https://doi.org/10.1007/s12649-023-02094-8>
11. Gupta SK, **Singh H**, Joshi MC, Sharma A. Digital dashboards with paradata can improve data quality where disease surveillance relies on real-time data collection. DIGITAL HEALTH. 2023;9. <https://doi.org/10.1177/20552076231164098>
12. Rani, Alka; Gupta, Abhishek, Nagpal, BN, Gupta, Sanjeev Kumar, Anushrita, Prasad, Pooja, **Singh, Himmat**, Impact of urbanization on the abundance and distribution of Anophelines population in Ghaziabad district, Uttar Pradesh, India. Journal of Vector Borne Diseases (), August 17, 2023. | <https://doi.org/10.4103/0972-9062.383639>
13. Sharma, Supriya; Sen, Aparajita; Ahmed, Naseem; Swarnkar, Deendayal; **Singh, Himmat**. A rapid method for DNA Isolation from blood, dried blood spots (DBS) and rapid diagnosis test (RDT). Journal of Vector Borne Diseases, August 17, 2023. | <https://doi.org/10.4103/0972-9062.383646>
14. Prasad, Pooja, Lata, Suman, Kumar, Dinesh; Gupta, Sanjeev Kumar, Saxena Rekha, Arya, Deepak Kumar; **Singh, Himmat**. Susceptibility status of *Aedes aegypti* (Diptera: Culicidae) against insecticides of public health use in Delhi and NCR region, India. Journal of Vector Borne Diseases 60(3):p 300-306, Jul–Sep 2023. | <https://doi.org/10.4103/0972-9062.374044>
15. Pooja Prasad, Suman Lata, Sanjeev Kumar Gupta, Pawan Kumar, Rekha Saxena, Deepak Kumar Arya, **Himmat Singh**. *Aedes aegypti* container preference for oviposition and its possible implications for dengue vector surveillance in Delhi, India Epidemiology and Health, 2023 (1):

16. Amit Sharma Poonam Saroha, Sanjeev Kumar Gupta, Chander Prakash Yadav, Jasmita Gill, Prakash Sahoo, **Himmat Singh**, Vani H C5, Sanghamitra Pati, Manju Rahi. Socioecological risk factors associated with Malaria in Pregnancy in an endemic state of India: a retrospective study *BMJ Public Health* 2023: 1-12. 10.1136/bmjph-2023-000004
17. Mahale Paras, Sinha Swati, Quadiri Afshana, Sharma Supriya, Gahtori Renuka, Kumari Preeti, Pande Veena, **Singh, Himmat**, Anvikar Anupkumar R. Design and validation of multiplex polymerase chain reaction as a diagnostic tool for Plasmodium species. *Journal of Vector Borne Diseases* 60(2):p 200-206, Apr–Jun 2023. | <https://doi.org/10.4103/0972-9062.374038>
18. **Himmat Singh**, Akhtar Nasreen, Lata Suman, Prasad Pooja, Saroha Poonam, Gupta Sanjeev Kumar Zika - an emerging vector-borne infection of serious public health significance in India. *J Med Arthropodol & Public Health*, 2023(3): 53-62
19. Kumar Pawan, Shakya Rashmi, Kumar Vikram, Kumar Dinesh, Chauhan, RPS, **Singh, Himmat**. Chemical constituents and strong larvicidal activity of Solanum xanthocarpum among selected plants extracts against the malaria, filaria, and dengue vectors. *Journal of Vector Borne Diseases* 60(1):p 18-31, Jan–Mar 2023. | DOI: 10.4103/0972-9062.361177
20. Singh SP, **Singh H**, Suruchi Saini, GK Mishra, SK Sharma. Studies on the breeding potential and entomological indices of dengue vector *Aedes aegypti* and *Aedes albopictus* in the district Ghaziabad of Uttar Pradesh *Journal of Vector-Borne Diseases* 2022 print ahead <https://doi.org/10.4103/0972-9062.353270>
21. Smriti Kala, Chetan K. D. Jawle, Mukesh Kumar Singh, Nisha Sogan, **Himmat Singh**, Gaurav Shukla, Amrishi Agarwal, L. K. Takhur, and Jitendra Kumar. Pomegranate Resembling Design of Starch Sago Beads Encapsulates Nanopyriproxyfen, Enabling Slow Release and Improved Bioactivity, 2022 *Appl. Matter. Interfaces* 2022. <https://doi.org/10.1021/acsami.2c18003>
22. Lall M, Grover N, **Himmat Singh**, Ahmed N, Singh K, Sharma AP, Damsadekar N, Ahirawadagi TC. New variant/subspecies of plasmodium in Northeastern India. *Medical Journal Armed Forces India*. 2022 Dec 14.
23. **Himmat Singh**, Sanjeev Kumar Gupta, Kumar, Kumar Vikram, Rekha Saxena, Aruna Srivastava BN Nagpal,. Sustainable control of malaria employing Gambusia fishes as biological control in Jalore and Barmer districts of Western Rajasthan. *Journal of Vector Borne Diseases*, 2022; 59: 91-7
24. Nasreen Akhtar, Sanjeev Kumar Gupta, **Himmat Singh**, Surveillance of Zika and Dengue viruses in field-collected *Aedes aegypti* mosquitoes from different states of India, *Virology* 2022;(574):96-101, <https://doi.org/10.1016/j.virol.2022.07.004> .
25. Preeti Kumari, Swati Sinha, Renuka Gahtori, Afshana Quadiri, Paras Mahale, Deepali Savargaonkar, Veena Pande, Bina Srivastava, **Himmat Singh**, Anupkumar R Anvikar, Comparative Assessment of Diagnostic Performance of Cytochrome Oxidase Multiplex PCR and 18S rRNA Nested PCR, *Korean J Parasitol.* 2022;60 (4): 295-299. : <https://doi.org/10.3347/kjp.2022.60.4.295>
26. Nalini Mishra, Nidhi Krishna Shrivastava, Deepak Shivhare and **Himmat Singh**. Wolbachia: An evolutionary way to combat mosquito borne disease and the challenges in success of the strategy. *International Journal of Mosquito Research* 2022; 9(2): 65-68. DOI: <https://doi.org/10.22271/23487941.2022.v9.i2a.603>
27. Dinesh Kumar, Pawan Kumar, Kumar Vikram and **Himmat Singh**. Fabrication and

Characterization of Noble Crystalline Silver Nanoparticles from Pimenta dioica Leave Extract medium and analysis of Chemical constituents for Larvicidal Applications. Saudi Journal of Biological Sciences, 2022;(2):1134-1146. DOI: 10.1016/j.sjbs.2022.09.052

28. N. Pradeep Kumar , Ashwani Kumar , D. Panneer , S. Abidha , S. Muthukumaravel , T. Sankari , P.M. Ajithlal , Jessu Mathew ,Suhana Koothradan , R. Paramasivan , M. Muniyaraj , **Himmat Singh** , Rekha Saxena , P. Vijayachari , I.P. Sunish, A.N. Shriram , Prafulla Dutta, Saurav Jyoti Patgiri, D.R. Bhattacharyya, S.L. Hoti, D. Chattopadhyay , Subarna Roy, Namita Mahapatra, Sanghamitra Pati, Gyan Chand, A.K. Mishra, Pradip Barde, P. Jambulinga. Nation-wide vector surveillance on Zika and Dengue did not indicate transmission of the “American lineage pandemic ZIKA virus” in India International Journal of Infectious Diseases (2021), doi: <https://doi.org/10.1016/j.ijid.2021.09.074>.
29. **Singh, H.**, Gupta, S.K., Vikram, K. et al. The impact of mosquito proof lids of underground tanks “tanka” on the breeding of *Anopheles stephensi* in a village in western Rajasthan, India. Malar J 20, 412 (2021). <https://doi.org/10.1186/s12936-021-03939-0>
30. Sharma, R.S. and **Himmat Singh** Risk assessment of vector borne diseases in Rohingya refugee’s camps, cox bazaar. Bangladesh, International Journal of Current Research, 2021: 1-13. DOI: <https://doi.org/10.24941/ijcr.40966.03.2021>
31. Raju Ranjha, **Himmat Singh**, Jitendra Kumar. Dengue outbreak in Bhilai, Chhattisgarh 2018: Entomological investigation and community awareness: Community Awareness and Entomological Investigation of Dengue Outbreak" Indian J Community Health (Accepted).
32. Sanjeev Kumar Gupta, BN Nagpal, Rekha Saxena, **Himmat Singh**, Kumar Vikram, Nayak A, MS Chalga, Aruna Srivastava, and M.C. Joshi. Mobile App based Pictorial Identification Key for Indian Anophelines". Journal of Vector Borne Diseases; 2021, (**Accepted**).
33. A Rani, BN Nagpal, **H Singh**, SS Mehta, A Srivastava, R Saxena Potential role of *Anopheles subpictus* as a malaria vector in Ghaziabad District, Uttar Pradesh, India. International Journal of Tropical Insect Science 2021; 41 (2), 1107-1117.
34. Vikram K, Gupta SK, Nagpal BN, Saxena R, **H Singh**, NR Tuli, Aruna Srivastava and Neena Valecha. Co-distribution of dengue and chikungunya virus in *Aedes* mosquitoes of Delhi, India. Journal of Vector Borne Diseases; 2021, 58(4) : p 386-390, Oct–Dec 2021. | DOI: 10.4103/0972-9062.325638
35. D Kumar, P Kumar, **H Singh**, V Agrawal Biocontrol of mosquito vectors through herbal-derived silver nanoparticles: Prospects and challenges. 2020 Environmental Science and Pollution Research 27 (21), 25987-26024
36. J Majhi, R **Singh**, V Yadav, V Garg, P Sengupta, PK Atul, H **Singh** Dynamics of dengue outbreaks in gangetic West Bengal: A trend and time series analysis 2020 Journal of Family Medicine and Primary Care 9 (11), 5622
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39. Kumari GJ, Meena D, Malhotra Bharti, **Singh Ruchi**, Gaur Kusum, **Singh H**, et al. Effect of control measures in terms of change in Entomological Indices during first Zika outbreak in Jaipur

40. KP D.S. Dinesh, H. **Singh**, R.K. Topno, V. Kumar, S. Kesari, S.P. **Singh** Surveillance of breeding sites of dengue vector following the floods in an urban area of Patna, Bihar, India .*Dengue Bulletin* 2019; 40 : 85
41. **Himmat Singh**, Sanjeev Kumar Gupta, Kumar Vikram, Rekha Saxena, Aruna Srivastava and B.N. Nagpal 2019. Sustainable Control of malaria employing Gambusia fishes as biological control in Jalore and Barmer districts of Western Rajasthan. *Journal of Vector Borne Diseases* , Accepted
42. Babita Bisht, Roop Kumari, BN Nagpal, **Singh H**, Sanjeev Kumar Gupta, AK Bansal and NR Tuli 2019. Influence of environmental factors on dengue fever in Delhi *International Journal of Mosquito Research* 2019: 6(2) A :11-18.
43. Babita Bisht, Roopkumari, **Himmat Singh**, BN Nagpal, AK Bansal NR Tuli. Association between entomological indices, breeding of Aedes mosquitoes and container types in Delhi for the prevention and control of dengue. *Dengue Bulletin* 2019; 40, 100
44. **H Singh**, Om P Singh, Nasreen Akhtar, Gunjan Sharma, Nivedita Gupta Neena Valecha 2019 First report on the transmission of Zika virus by Aedes (Stegomyia) aegypti (L.) (Diptera: Culicidae) during the 2018-Zika-outbreak in India. *Acta Tropica* Volume 199, November 2019, 105114.<https://doi.org/10.1016/j.actatropica.2019.105114>.
45. Dinesh D.S., **H. Singh**, R.K. Topno, V. Kumar, S. Kesari, S.P. Singh Surveillance of breeding sites of dengue vector following the floods in an urban area of Patna, Bihar, India .*Dengue Bulletin* 2019; 40 : 85
46. Sogan N, Kapoor N, **Singh H**, Kala S, Nagpal BN. 2018. Larvicidal activity of Ricinus communis extracts against mosquitoes. *Journal Vector-Borne Disease*. 55(4) 284-290.
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53. Alka Rani, Abhishek Gupta, Swati Sinha, Bhupender Nath Nagpal, **Himmat Singh**, Kumar

Vikram, Sanjeev Kumar Gupta, Sucheta Shah Mehta, Aruna Srivastava, Anup Anvikar Rekha Saxena and Neena Valecha 2017 Malaria epidemiology in changing scenario and anopheles vector in Ghaziabad district, Uttar Pradesh, India, International Journal of Mosquito Research Vol 4 (6) 56-64

54. B. N. Nagpal , Sanjeev Kumar Gupta, Arshad Shamim, Kumar Vikram, Aruna Srivastava, N. R. Tuli, Rekha Saxena, **Himmat Singh**, V. P. Singh, V. N. Bhagat, N. K. Yadav, Neena Valecha. 2016 Control of Aedes aegypti Breeding: A Novel Intervention for Prevention and Control of Dengue in an Endemic Zone of Delhi, India PLOS One <https://doi.org/10.1371/journal.pone.0166768>
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56. Vikram Kumar, B N Nagpal, Veena Pande, Aruna Srivastava, Rekha Saxena **Singh H**, Anushrita, Sanjeev K Gupta, N R Tuli, N K Yadav, Richard Paul, Olivier Telle, Neena Valecha, 2015. Comparison of Ae. aegypti breeding in localities of different socio-economic groups of Delhi, India. International Journal of Mosquito Research 2 (2), 83-885

Achievements/Awards/Additional Information

- Established the role of Ae. aegypti in local transmission of ZIKV outbreak of Jaipur in Sep. 2018. 1st report from India (pub: Acta Tropica) for the first time from the Indian subcontinent during the. This helped formulate a species-specific vector control strategy during the outbreak and other outbreaks in Kerala, MP, and UP recently.
- Developed mosquito-proof lid for western Rajasthan which was cost-effective, durable acceptable, and stopped 100% breeding of An. stephensi. The community started using (pub. in Malaria Journal)
- Developed reusable cost-effective cellulose pad-based ovitrap for trapping Aedes egg-laying using cellulose pads which were found to be selected 90% more by Aedes aegypti for egg laying was found 40% more effective for surveillance.
- Established COVID-19. The central depot at NIMR we have distributed over 11 crores of kits throughout the country, RT-PCR testing facility at NIMR which is catering to the COVID testing of the Parliament, PMO, and Ministries on regular basis.
- Established Xenodiagnosis reference lab for VBDs outbreaks for North India. Demonstrated sustainable control of malaria vectors by deploying Gambusia fish in the Canal irrigated areas of Snachore (Jalore District) in Rajasthan for malaria reduction (2016-2018).
- Two major projects on migration malaria & studies of An. culicifacies are initiated for supporting NCVBDC. A study on “Insecticidal paint development” is initiated due to its advantages over IRS. Initiate collaborative studies for the elimination of malaria. GLP up-gradation of WHOCC Insecticide testing facility of NIMR.
- Developed Health Adaptation Plan, for Climate Change initiative of NCDC
- Vector biology and control implementable research to support the National VBD control program. Designing and implementing new tools in Vector control strategy and xeno-monitoring.
- National Emergency Response Duties as Expert Entomologist: For planning containment of ZIKV/Dengue outbreaks at Rajasthan, Bihar, Kerala, MP & Maharashtra in different outbreaks (1st report of ZIKV transmitted through Aedes aegypti in India helped in planning strategy) 2018 to 2021.

Signature