

Dr. ALKA RANI, Ph.D.

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Google scholar: <https://scholar.google.com/citations?hl=en&user=uZp-KG8AAAAJ> (Citations=6, h index=2, i10 index=0)

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Research gate: <https://www.researchgate.net/profile/Alka-Rani-6>

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A researcher with interest in infectious diseases. I have 5 years' experience in diseases related to mosquito vectors and 1.5 years of experience in viral diagnostics (identification of SARS-CoV-2). I have worked in BSL 2 and 3 labs for investigating infectious diseases like Malaria, Dengue, Zika, and Covid-19. Highly skilled in preparing mosquito samples and interpreted results using different techniques. Researched and analysed scientific studies on malaria to develop insights and contribute to publications as appropriate. Experience Dedicated to learning new techniques and going the extra mile to accomplish tasks.

PROFESSIONAL EXPERIENCE

ICMR-National Institute of Cancer Prevention and Research, Noida, Uttar Pradesh, India

Technical Officer, 10/2020 – 03/2022

- Receive, label, sort and aliquot the samples of nasopharyngeal and oropharyngeal swabs
- Organize, store and examine up to 9000 SARS-CoV-2 virus suspected samples daily in a safe and efficient manner.
- Preparing reagent for Taqman probe based realtime PCR reaction
- Extracting RNA from aliquots of nasopharyngeal and oropharyngeal swabs samples using automated method/Spin Column method/ manual magnetic bead method.
- Conducting semi quantitative/qualitative Real time PCR analyses and interpret finding of samples.
- Maintain laboratory equipment, managing biomedical waste while ensuring safety guidelines as per ICMR/WHO.
- Maintaining records of analysed laboratory findings and documentation.
- Management of store for auditing purpose

ICMR-National Institute of Malaria Research, Delhi, India

Research Fellow (JRF & SRF), 10/2012 – 10/2017

- Designed an original research project focused on knowing the status of malaria vector *Anopheles* mosquitoes in rapid urbanization.
- Area calculation for study sites using google earth for land use change analysis during rapid urbanization for agricultural lands, barren lands, construction sites etc.

- Knowledge of field collection methods like hand catch method, total collection method, light trap etc. for adult mosquitoes and dip/pipette method for immature stages.
- Studied entomological parameters like density (per man hour density), entomological inoculation rate, sporozoite rate, parity rate etc.; and assessing their distribution and epidemiology for knowing the malaria risk.
- Vector incrimination to know the vector potential of Anopheles mosquito for transmitting malaria using through *Plasmodium* parasite detection in mosquitoes using Sandwich ELISA and PCR (Nested and Multiplex).
- Examination of blood samples (on filter paper) from Anopheles mosquitoes for the presence of human blood in mosquitoes (Human Blood Index) using PCR.
- Worked on blood samples for isolation of *Plasmodium* parasite and gained a little experience in culture of the same.
- Other techniques like Immuno-Fluorescence Assay (IFA) for dengue virus detection using Fluorescent microscope.
- Have experience of rearing mosquitoes (*Anopheles*, *Aedes* and *Culex*) in insectary and handling animal for blood feeding.
- For sibling detection polytene chromosome preparation and examination from ovary of female *Anopheles* mosquitoes i.e. *Anopheles culicifacies* was studied.
- Familiarity with *An.culicifacies*, *An.stephensi* and *An.subpictus* in their breeding places, and morphological identification.
- For Dengue, Chikungunya and Zika virus detection in Aedes mosquito RNA isolation and Reverse Transcriptase PCR was done.
- Maintaining laboratory equipment, instruments, and standards as per WHO.

EDUCATION

- **Department of Zoology, Kumaun University & National Institute of Malaria Research, Delhi**
Doctorate, in Zoology, 14th November 2014(registration) to 18th October 2019 (viva)
Thesis Title: Effect of Urbanization on the Intensity of Malaria Transmission in Ghaziabad. I had worked on malaria based problem in National Institute of Malaria Research. My study includes how urbanization and changing land use pattern is influencing malaria vectors of Ghaziabad.
- **Department of Zoology, Campus, CCS University, Meerut**
Master in Zoology (specialization in Parasitology), 2009-2011-first division (75.6%) and Gold Medal
- **Acharya Narendra Dev College, Delhi University**
Bachelor in Applied Life Sciences (**specialization in sericulture**), **2005-2008-** first Division (65.5%)

ACHIEVEMENTS

- RC Dalela Award (Gold medal) in MSc at Masters Level.
- National Level tests like National Eligibility Test (NET) for lectureship 2018
- ICMR JRF 2012

CONFERENCES/SEMINARS/WORKSHOPS ATTENDED

- Nematology conference in CCS University during MSc 2010
- Vector borne diseases conference in Udaipur in 2013
- A workshop on Research Methodology course in National Institute of Cancer Prevention and Research 2014
- Conference on Vector Borne Diseases in Goa 2014
- Conference on Vector Borne Diseases in Bangalore 2016
- Conference on biomedical sciences in Delhi University in 2016
- Conference (virtual) on infectious diseases in Chaudhary Charan Singh University in 2020

WORKSHOP ORGANIZED

“Laboratory diagnosis of SARS-CoV-2 by Real-Time PCR”

22 March 2022-24th March 2022

Demonstration and hands on experience of handling (Sorting, Aliquoting) and processing (RNA Extraction, Reagent Preparation, Template addition, and PCR result analysis) of samples

SKILLS (GENERAL, TECHNICAL AND MANAGEMENT)

- Ability to work independently and in team with decision making
- Knowledge of written and spoken English.
- Knowledge of Google earth software and using SPSS and Excel for data analysis
- Experience of providing training within the institute independently and jointly.
- Knowledge of MS office, basic computers, Internet, Google earth etc.
- Excellent time-management and organizational skills
- Knowledge of laboratory standards and best practices

PUBLISHED PAPERS

1. Pramod Kumar, **Alka Rani**, Shalini Singh, Anuj Kumar*, Recent Advances on DNA and Omics Based Technology in Food Testing and Authentication: A review. Accepted in Journal of food safety (2022).
2. Abhishek Gupta, **Alka Rani**, Nisha Sogan, R. S. Sharma, Bindu Sharma, Epidemiology and control strategies of novel coronavirus disease in the context of India, Journal of Applied and Natural Science: Vol. 13 No. 1 (2021).
3. **Rani, A.**, Nagpal, B.N., Singh, H. *et al.* Potential role of *Anopheles subpictus* as a malaria vector in Ghaziabad District, Uttar Pradesh, India. *Int J Trop Insect Sci* (2020). <https://doi.org/10.1007/s42690-020-00296-4>.
4. **Alka Rani**, Abhishek Gupta, BN Nagpal and Sucheta Shah Mehta (2018). Mosquito borne diseases and Sanitation in Ghaziabad district, Uttar Pradesh, India. International Journal of Mosquito Research, 5: 25-30.

5. **Alka Rani**, Abhishek Gupta, et al. (2017). Malaria epidemiology in changing scenario and anopheles vector in Ghaziabad district, Uttar Pradesh, India. International Journal of Mosquito Research, 4: 56-64.

UNDER COMMUNICATION

1. Abhishek Gupta, **Alka Rani**, B. N. Nagpal. Effect of changing climatic variables on abundance of Anopheles Meigen, 1818 mosquitoes (Diptera: Culicidae) in urbanizing Ghaziabad District, Uttar Pradesh, India.
2. **Alka rani**, Abhishek Gupta, B.N. Nagpal, Himmat Singh, Aruna Srivastava. Rapid urbanization influence dynamics of malaria vectors in Ghaziabad district, UP, India.

REFERENCES

- **Dr. B.N.Nagpal**

Retired Scientist G, ICMR-National Institute of Malaria Research, Delhi

Technical Officer, WHO, SEARO

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- **Dr. Himmat Singh**

Scientist E, ICMR-National Institute of Malaria Research, Delhi

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- **Dr. Ram Suresh Kumar**

Scientist E, ICMR-National Institute of Cancer Prevention and Research, Noida, UP

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