


Resume

		
Name	A. Kumar Ph. D	
Designation	Principal Scientist (Plant Pathology)	
Contact Number	9540829009	
Email -ID	kumar@iari.res.in kaundy@yahoo.com	
Address	Room No 23, Division of Plant Pathology, ICAR-Indian Agricultural Research Institute, New Delhi-12	
Qualification	PhD	
Area of Interest/Specialization	Plant microbiomes and plant immunity, Microbial volatiles, Genome sequencing of plant pathogens, Non host resistance	
Academic Experience	<ol style="list-style-type: none">i. Indian Agricultural Research Institute (ICAR), Principal scientist (Plant Pathology), 22- Nov 2010 to Present dateii. Wageningen University, The Netherlands, Visiting Scientist (Microbial Genomics), 1-Feb 2009 to 31-Jan 2010iii. Indian Institute of Spices Research, Calicut, Senior scientist, (Plant Pathology), 11-April 2006 to 19-Nov 2010iv. Indian Institute of Spices Research, Calicut, Scientist (Senior scale) (Plant Pathology), 11-April 2001 to 10-April 2006v. Indian Institute of Spices Research, Calicut, Scientist (Plant Pathology), 11-April 1997 to 10-April 2001	

<p>International exposure</p>	<ul style="list-style-type: none"> i. One year stint as DBT fellow at Laboratory of Phytopathology, Wageningen University, The Netherlands ii. Attended Practical Course PHP30306- Plant Microbe Interactions from March 30- April 9, 2009 at Laboratory of Phytopathology, Wageningen University, The Netherlands iii. Collaborative work with Prof. Tuemmler's group at Hannover Medical School, Germany for Investigation on mammalian toxicological analysis of plant associated <i>Pseudomonas aeruginosa</i> iv. Participated in 5th Annual Meeting of the Ecogenomics Consortium on 16th and 17th April 2009, Tinbergenzaal, Trippenhuis, Kloveniersburgwal 29, Amsterdam, The Netherlands. v. Participated in ALW Platform Molecular Genetics, Annual Meeting on October 15 & 16, 2009 at 'De Werelt' in Lunteren, The Netherlands vi. Participated EPS Theme 2 Symposium and Willie Commelin Scholten Day: "Interaction between plants and biotic agents" Utrecht Medical Centre, 15 Jan 2010 vii. <i>Participated and presented as paper in 28th New Phytologist Symposium on Function and Ecology of the plant microbiome 18-21 May 2012 Aldemar Hotel, Rhodes, Greece</i> viii. <i>Participated in 5th APGPR International Conference and presented a talk on <i>Plant Microbiomes and molecules</i> 16-19 July 2017, Bogor, Indonesia</i>
<p>Projects (National and international)</p>	<p>Ongoing projects</p> <ul style="list-style-type: none"> i. ICAR-NASF sponsored project on <i>A transgenic over expression of phosphite dehydrogenase a comprehensive strategy: to enhance phosphorus use efficiency with integrated weed and disease management for sustainable agriculture</i> (Collaborative project with ICGEB, New Delhi and IIRR, Hyderabad)- Principal Investigator ii. ICAR-NASF sponsored project on <i>Long-term conservation agriculture impact on microbiome and soil health indicators for resource efficiency and resilience in maize systems</i> (Collaborative project with IIMR, Ludhiana and IRCER-Patna)- Principal Investigator iii. ICAR-CRP on Genomics (<i>Magnaporthe oryzae</i> and <i>Ralstonia solanacearum</i>) – Collaborator as PI iv. ICAR-National Agricultural Higher Education Project

(NAHEP) - Center for Advanced Agricultural Science and Technology (CAAST) sponsored *Genomics Assisted Crop Improvement and Management* – Collaborator as Core Member

- v. Development and validation of phyllosphere microbiome based biostimulant for defense activation against blast disease and abiotic stresses in rice DST-SERB-FICCI sponsored project **Principal Investigator**

Completed projects

- i. Flagship project on Integrated approaches for mitigation of pomegranate bacterial blight (A collaborative project among five institutes) funded by ICAR
- ii. A new short term collaborative project on **Molecular characterization and functional analysis of endophytic bacteria associated with arid plant, *Cactus* against biotic and abiotic stress in plants** funded by **NAM (S&T), Govt of India**. The collaborators are Mr. Eke Pierre, **University of Yaoundé, Cameroon** and Prof. Fabrice F. Boyom, University of Yaoundé, Cameroon
- iii. Understanding the mechanisms of Non-Host resistance (NHR) against rust and blast in rice and wheat NASF (ICAR), New Delhi; **Rs 228.0 Lakhs; ICAR, New Delhi**
- iv. Genome mining of plant associated endophytic bacteria for natural products DBT, Govt. India; **Rs 80.5 Lakhs; Department of Biotechnology, Govt. of India**
- v. National network project on *Phytophthora*, *Ralstonia* and *Fusarium* affecting horticultural and field crops (PhytoFuRa); 2008-2010; **Rs 88.352 Lakhs; ICAR, New Delhi**
- vi. Application of microorganisms for agriculture and allied sectors 2007-2011; **Rs 20.0 Lakhs; ICAR, New Delhi**
- vii. Production of White Pepper through Microbial fermentation; 2005-2008; **Rs 9.63 Lakhs; Biotechnology Mission, KSCSTE, Kerala State**
- viii. Network Project on Organic Farming; 2004-2008; **Rs 20.8 Lakhs; ICAR, New Delhi**
- ix. Endophytic bacteria for biological system management of *Radopholus similis*, the key nematode pest of black pepper; 2003-2006; **Rs 18.15 Lakhs; Department of Biotechnology, Govt. of India**
- x. Immunological approaches for pathogen detection and use of defense protein for disease management in plantation crops; 2000-2003; **Rs 26.78 Lakhs; Department of Biotechnology, Govt. of India**
- xi. Compatibility, stability and potential of biocontrol consortium on suppression of *Phytophthora* foot rot of

	<p>black pepper and their conservation; 1999-2003; Rs 32.57 Lakhs; Department of Biotechnology, Govt. of India</p> <p>xii. Development of rhizome disinfection Technology for management of bacterial wilt of ginger 2002-2005; USD 12000; International Foundation; For Science (IFS), Sweden</p>
<p>Top ten Peer Reviewed Publications</p>	<p>i. Kumar A, Munder A, Aravind R, Eapen SJ, Tümmeler B, and Raaijmakers JM (2012) Friend or foe: genetic and functional characterization of plant endophytic <i>Pseudomonas aeruginosa</i> <i>Environmental Microbiology(Wiley)</i> 15(3):764-79 [IF 6.24]</p> <p>ii. Neelam Sheoran, Agisha Valiya Nadakkakath, Vibhuti Munjal, Aditi Kundu, Kesavan Subaharan, Vibina Venugopal, Suseelabhai Rajamma, Santhosh J Eapen and Kumar A (2015) Genetic analysis of plant endophytic <i>Pseudomonas putida</i> BP25 and chemoprofiling of its antimicrobial volatile organic compounds, <i>Microbiological Research (Elsevier)</i>, 173: 66-78 [IF 2.561]</p> <p>iii. Vibhuti Munjal, Agisha Valiya Nadakkakath, Neelam Sheoran , Aditi Kundu, Vibina Venugopal, Kesavan Subaharan, Suseelabhai Rajamma, Santhosh J. Eapen, Kumar A (2015) Genotyping and identification of broad spectrum antimicrobial volatiles in black pepper root endophytic biocontrol agent, <i>Bacillus megaterium</i> BP17 <i>Biological Control (Elsevier)</i>, 92:66-76 [IF 2.05]</p> <p>iv. Sheoran N, Kumar A, Munjal V, Valiya Nadakkakath A, Eapen SJ (2016). <i>Pseudomonas putida</i> BP25 alters root phenotype and triggers salicylic acid signaling as a feedback loop in regulating endophytic colonization in <i>Arabidopsis thaliana</i>. <i>Physiological and Molecular Plant Pathology (Elsevier)</i>, 93:99-111 [IF: 1.79]</p> <p>v. Aravind R, Eapen SJ, Kumar A, Dinu A, Ramana KV. (2010). Screening of endophytic bacteria and evaluation of selected isolates for suppression of burrowing nematode (<i>Radopholus similis</i> Thorne) using three varieties of black pepper (<i>Piper nigrum L.</i>). <i>Crop Prot.</i> 29: 318-24. [IF: 1.49]</p> <p>vi. Aravind R, Kumar A, Eapen SJ (2012) Pre-plant bacterisation: a strategy for delivery of beneficial endophytic bacteria and production of disease-free plantlets of black pepper (<i>Piper nigrum L.</i>). <i>Arch Phytopathol Plant Protect</i> 45(9): 1115-26. [IF:0.32]</p> <p>vii. Aravind R, Kumar A, Eapen SJ, Ramana KV. (2009) Endophytic bacterial flora in root and stem tissues of black pepper (<i>Piper nigrum L.</i>) genotype: isolation, identification and evaluation against <i>Phytophthora capsici</i>. <i>Lett Appl Microbiol (Wiley)</i>, 48: 58-64. [IF:1.66]</p> <p>viii. Chunxu Song, Gustav Sundqvist, Erik Malm, Irene de</p>

	<p>Bruijn, Kumar A, Judith van de Mortel, Vincent Bulone and Jos M Raaijmakers (2015) Lipopeptide biosynthesis in <i>Pseudomonas fluorescens</i> is regulated by the protease complex ClpAP <i>BMC Microbiology</i>, 15:29 [IF: 2.98]</p> <p>ix. Song, C., Kumar A, van de Mortel, J. and Raaijmakers, J. M. (2014), Discovery of new regulatory genes of lipopeptide biosynthesis in <i>Pseudomonas fluorescens</i>. <i>FEMS Microbiology Letters (Wiley)</i>, 356: 166-175 [IF 2.05]</p> <p>x. Kumar A, T.P. Prameela, R. S. Bhai, A. Siljo, M. Anandaraj, and B. A. Vinatzer, (2014). Host specificity and genetic diversity of race 4 strains of <i>Ralstonia solanacearum</i>, <i>Plant Pathology (BSPP)</i>, 63: 1138-1148 [IF 2.93]</p>
<p>Awards and recognition</p>	<p>i. MJ Narasimhan-Best paper Award Aravind R, Kumar A, Dinu A and S.J. Eapen (2011) Single tube duplex PCR for simultaneous detection of pathogens, <i>Phytophthora capsici</i> and <i>Radopholus similis</i> infecting black pepper (<i>Piper nigrum</i> L.) <i>Indian Phytopathology</i> 64 (4) : 353-357, IPS, New Delhi</p> <p>ii. Best paper Award: Devendra Kumar Choudhary, Vibhuti Munjal, Neelam Sheoran, R. K. Saritha, S. Gopalakrishnan¹, Pratibha Sharma, Rashmi Aggarwal and Kumar A (2015) Microarray analysis of <i>Ralstonia solanacearum</i> induced gene expression in <i>Arabidopsis thaliana</i> In: National Symposium on “Understanding Host-Pathogen Interaction through Science of Omics” from March 16-17, 2015 (Awarded Best Paper) IPS, New Delhi</p> <p>iii. Best paper Award Prameela TP, R. Suseelabhai, Kumar A and M. Anandaraj (2015) Real time loop mediated isothermal amplification- advanced tool for the field diagnosis of <i>Ralstonia solanacearum</i> biovar 3 infecting ginger In: National Symposium on “Understanding Host-Pathogen Interaction through Science of Omics” from March 16-17, 2015 (Awarded Best Paper), IPS, New Delhi</p> <p>iv. Best paper Award: Kuleshwar Prasad Sahu, Kumar A Rathore R, Gopalakrishnan Subbaiyan, and Robin Gogoi (2016) Metagenomic analysis of rice phyllospheric bacterial communities in relation to blast disease Presented during 6th International Conference hosted by Indian Phytopathological Society at New Delhi on 23rd-27th Feb. 2016 (Awarded Best Paper), IPS, New Delhi</p> <p>v. Best paper Award: Pritha Kundu, Ranabir Sahu, Maitree Pradhan, Avinash Sethi, Prabhakaran Narayanasamy, Kumar A, Shree P. Pandey (2016) Unwiring the defense mechanism during rice non-host resistance against wheat black stem rust infection Presented during 6th International Conference hosted by Indian Phytopathological</p>

	<p>Society at New Delhi on 23rd-27th Feb. 2016 (Awarded Best Paper), IPS, New Delhi</p> <p>vi. Best paper Award: Rohini Chawla, Kumar A, Prabhakaran Narayanaswamy, Vibhuti Munjal, Neelam Sheoran, Prakash Ganesan, Sonika Gupta, Rashmi Aggarwal, Maitree Pradhan, and Shree Prakash Pandey (2016) Real-time PCR quantification and live-cell imaging of epiphytic colonization of leaf by rice blast fungus, <i>Magnaporthe oryzae</i> using green fluorescence protein Presented during 6th International Conference hosted by Indian Phytopathological Society at New Delhi on 23rd-27th Feb. 2016 (Awarded Best Paper), IPS, New Delhi</p>
<p>Mentorship</p>	<p>Ongoing PhD</p> <ol style="list-style-type: none"> 1. Mukesh Kumar- Indian Agricultural Research Institute, New Delhi 2. Kuleshwar Prasad Sahu- Indian Agricultural Research Institute, New Delhi 3. Asha Jyothi Mushineni- Indian Agricultural Research Institute, New Delhi 4. Asharani Patel- Indian Agricultural Research Institute, New Delhi <p>Ongoing MSc</p> <ol style="list-style-type: none"> 1. K. Charisma - Indian Agricultural Research Institute, New Delhi <p>Completed PhD</p> <ol style="list-style-type: none"> 1. Aravind, R- Mangalore University, Karnataka 2. Vinod Vijayan- Acharya Nagarjuna University, Andhra Pradesh 3. Neelam Sheoran- Singhanian University, Rajasthan 5. Vibhuti Munjal- Singhanian University, Rajasthan 4. Pierre EKE- University of Yaoundé, Cameroon, NAM (S&T) Fellowship <p>Completed MSc</p> <ol style="list-style-type: none"> 1. Devendrakumar Chaudhary- Indian Agricultural Research Institute, New Delhi 2. Kuleshwar Prasad Sahu- Indian Agricultural Research Institute, New Delhi 3. Omer Abbassy- Indian Agricultural Research Institute, New Delhi 4. Asharani Patel- Indian Agricultural Research Institute, New Delhi 5. Eighteen Other MSc Students from various universities under UGC.