

## Curriculum Vitae



Name : Dr. Prakash Chandra Rath  
Father's name : Sri Agadhu Rath  
Designation : Principal Scientist & Head,  
Division of Crop Protection,  
ICAR-National Rice Research Institute, Cuttack, Odisha  
Date of Birth : 20.01.1967  
Phone : 0671-2367777, Extn. - 2257  
Mobile : 9437476827  
Email : pcrath67@gmail.com  
Area of Specialization : Host plant resistance (BPH & WBPH), chemical control of insect  
pest and IPM in rice  
Education : M.Sc.(Ag) & Ph.D. (Entomology)  
Professional History : Scientist (ICAR)(03.06.1993-02.06.1998),  
Scientist Sr. Scale (ICAR)(03.06.1998-02.06.2002),  
Senior Scientist (ICAR) (03.06.2002-31.12.2010),  
Principal Scientist (ICAR) (01.01.2011)  
Head, Division of Crop Protection, ICAR-NRRI (01.07.2018)  
Date of joining (ICAR) : 03.06.1993 at NAARM, Hyderabad  
Date of joining (CRRI) : 01. 11. 1993 at Cuttack  
Date of joining (CRLRRS) : 24. 08. 1994 at Kharagpur  
Date of joining (RRLRRS) : 26. 04. 1999 at Gerua, Assam  
Date of joining (CRURRS) : 11.07.2002 at Hazaribag, Jharkhand  
Date of joining (CRRI) : 02. 07. 2003 at Cuttack

### **Publications**

Research Papers : 98  
Review Papers : 01  
Popular Articles : 38  
Research Note : 40  
Books : 03  
Technical Bulletins : 24  
Book Chapters : 43  
Seminar/Symposium : 143  
TV Talk : 05  
Radio Talk : 04

## Recent Publication (2019-May 2022)

- 1) Yadav MK, S. Aravindan, Umakanta N, Raghu S, Prabhukarthikeyan SR, Keerthana U, Marndi BC, Adak T., Munda S., Deshmukh Rupesh, Samantaray S. & Rath PC (2019). Blast resistance in Indian rice landraces: Gea dissection by Gene specific markers, PLOS ONE | <https://doi.org/10.1371/journal.pone.0211061>, pp-1-19 Vol. 14(1) (NAAS - 8.78)
- 2) Yadav Manoj, Aravindan S., Raghu S., Prabhukarthikeyan S.R, Keerthana U, Banerjee Amrita, Ngangkham Umakanta, Adak Totan, Meera Kumari Kar, Parameswaran Chidambaranathan, Rupesh Deshmukh, Jitendra Kumar Tiwari, Mihir Ranjan Mohanty, P.C. Rath (2019). Assessment of genetic diversity and population structure of Magnaporthe oryzae causing rice blast disease using SSR markers. Physiological and Molecular Plant Pathology (Elsevier). 106(2019), 157-165. (NAAS - 7.68)
- 3) Sahu Madhusmita, Adak Totan, Naveenkumar B Patil, Guru P. Pandi G, G. Basana Gowda, Manoj Kumar Yadav, Annamalai M, Golive P, **Rath PC**, Jena Mayabini (2019). Dissipation of chlorantraniliprole in contrasting soils and its effect on soil microbes and enzymes. Ecotoxicology and Environmental Safety (Elsevier) Vol. 180 (2019), pp – 288-294. <http://doi.org/10.1016/j.ecoenv.2019.05.024>. (NAAS- 4.527)
- 4) Yadav Manoj Kumar, Aravindan S, Prabhukarthikeyan S.R., Keerthana U, Raghu S, Pramesh D, Bal Archana, Samal Pankajini, Behera Motilal, Kar Meera Kumari and **Rath P.C.** (2019). Characterization and molecular phylogeny of Magnaporthe oryzae causing rice blast disease in eastern India (RJBT-2018-0173). Research Journal of Biotechnology, Vol. 14 (6) June (2019), pp 1-7. (NAAS - 5.0)
- 5) Swati Sarita Shaw, Prabhukarthikeyan SR, Keerthana U, Aravindan S, Manoj Kumar Yadav, Raghu S, Mathew S Baite, Sabyasachi Parida, **Rath PC** (2019). Morphological and Molecular characterization of Magnaporthe grisea and bio-efficacy of Bacillus strains against M. grisea. International Journal of Current Microbiology and Applied Science 8(6) : 1900-1908. (NAAS - 5.38)
- 6) A Susan, M. K. Yadav, S. Kar, S. Aravindan, U. Ngangkham, S. Raghu, S. R. Prabhukarthikeyan, U. Keerthana, S. C. Mukherjee, J. L. Salam, T. Adak, A. Banerjee, P. C. Rath (2019). Molecular identification of blast resistance genes in rice landraces from northeastern India. Plant Pathology 68(3) : 537-546, <https://doi.org/10.1111/ppa.12975> (NAAS- 8.49)
- 7) Prabhukarthikeyan SR, **Rath PC**, Chidambaranathan Parameswaran, Keerthana U, Baite Mathew Seikholen, Panneerselvam Periyasamy, Raghu S, Anandan A, Yadav Manoj, Aravindan S (2019). Bio-protection of brown spot disease of rice and insight into the molecular basis of interaction between Oryza sativa, Bipolaris oryzae and Bacillus amyloliquefaciens. Biological Control 137 (2019): 104018, <https://doi.org/10.1016/j.biocontrol.2019.104018>. (NAAS - 8.61)
- 8) Manoj Kumar Yadav, S. Aravindan, U. Ngangkham, SR Prabhukarthikeyan, U Keerthana, S Raghu, D Pramesh, A Banerjee, S Roy, P Sanghamitra, T Adak, Priyanka Priyadarshinee, Mayabini Jena, MK Kar and PC Rath (2019). Candidate screening of blast resistance donor for rice breeding. Journal of Genetics (2019) 98:73. <http://doi.org/10.1007/s12041-019-1116-z> (NAAS - 6.83)
- 9) Basana Gowda G; Naveenkumar Patil, Totan Adak, Guru Pirsanna Pandi G, Nabaneeta Basak, Kingshuk Dhali, Annamalai M; Prasanthi G, Mohapatra SD, Rath PC (2019). Physico-chemical characteristics of rice (Oryza Sativa L.) grain imparting

resistance and their association with development of rice weevil, *Sitophilus oryzae* (L.) (Coleoptera: Curculionidae). *Environmental Sustainability*, (2), 369-379, DOI - 10.1007/s42398-019-00087-9, SPRINGER

- 10) Mathew S. Baite, S. Raghu, S. R. Prabhukarthikeyan, U. Keerthana, Nitiprasad N. Jambhulkar, Prakash C. Rath (2019). Disease incidence and yield loss in rice due to grain discolouration. *Journal of Plant Diseases and Protection* <https://doi.org/10.1007/s41348-019-00268-y> (NAAS - 6.95)
- 11) HN Subudhi, J Meher, SK Dash, LK Bose and PC Rath (2019). Screening of elite rice genotypes for brown plant hopper (*Nilaparvata lugens* Stal). *Journal of Entomology and Zoology Studies* 2020; 8(1): 1307-1309. (NAAS - 5.5)
- 12) Baite MS, Raghu S, Prabhukarthikeyan SR, Keerthana U, Jambhulkar NN, Rath PC. (2019). Disease incidence and yield loss in rice due to grain discolouration. *Journal of Plant Diseases and Protection* 127: 9–13, <https://doi.org/10.1007/s441348-019-00268-y>. (NAAS - 7.93)
- 13) Naveenkumar B Patil, Totan Adak, G Basana Gowda, G Pandi, Mahendiran Annamalai, Prasanthi Golive, PC Rath, Mayabini Jena (2019). Toxicity and repellency of essential oils against rice weevil *Sitophilus oryzae* (L). *Indian Journal of Entomology*. 81(3) 575-584. DOI : 10.5958/0974-8172.2019.00122.6 (NAAS - 5.08)
- 14) Ananya Susan, M.K. Yadav, Smita Kar, S. Aravindan, N. Umakanta, S. Raghu, SR Prabhukarthikeyan, SC Mukherjee, JL Salan, U. Keerthana, T. Adak & PC Rath (2019) Molecular identification of blast resistance gene in traditional landraces from Chhatisgarh,. – *Plant Pathology*, (2019) 68, 537–546. Doi: 10.1111/ppa.12975 (NAAS - 8.59)
- 15) Totan Adak, Nishant Barik, Naveenkumar B Patil, Guru Pirasanna Pandi Govindharaj, Basana Gowda Gadratagi, M Annamalai, AK Mukherjee and PC Rath (2019). Nanoemulsion of eucalyptus oil : an alternative to synthetic pesticides against two major storage insects (*Sitophilus oryzae* and *Tribolium castaneum*) of rice. *Industrial Crop and Products*. <https://doi.org/10.1016/j.indcrop.2019.111849> (IF - 4.191)
- 16) PC Rath, LK Bose, HN Subudhi, S Lenka and NN Jambhulkar (2020). Biodiversity of insect pests of rice in India. *International Journal of Chemical Studies* 2020; 8(1): 2998-3002. (NAAS 5.31)
- 17) Guru Pirasanna Pandi G\*, Annamalai M, Basana Gowda G, N.K. Patil, Prasanthi Golive, Totan Adak, P.C Rath and Mayabini Jena (2020). Effect of weather parameters on rice yellow stem borer *Scirpophaga incertulas* (walker) population dynamics under shallow low land ecology. Vol. 22, No. 1 *Journal of Agrometeorology* 22 (1) : 89-91 (NAAS -6.64).
- 18) J Meher, SK Dash, LK Bose, S Sarkar, PC Rath and HN Subudhi (2020). Screening of rice varieties against white backed plant hopper (*Sogatella furcifera* Horvath) in net house condition. *Journal of Entomology & Zoology Studies* 8(2) 1044-1044 (NAAS-5.53)
- 19) Prakash Chandra Rath, Lotan Kumar Bose, Hatnath Subudhi, Srikanta Lenka and Nitiprasad N. Jambhulkar (2020). Biodiversity of Pests of Rice in Odisha, *International journal of Current microbiology and applied sciences*, 9(3): 566-569 (NAAS- 5.38).
- 20) Totan Adak, Bibhab Mahapatra, Harekrushna Swain, Naveenkumar B Patil, Guru P Pandi G, B Gasana Gowda, M Annamalai, Somnath S Pokhare, Sankari Meena K, PC Rath and Mayabini Jena (2020). Indigenous biobed to limit point source pollution of

imidacloprid in tropical countries. *Journal of Environmental Management*, 272(2020) 11084. (NAAS – 10.87)

- 21) Raghu S, MS Baite, NB Patil, P Sanghamitra, MK Yadav, Prabhukarthikeyan S.R, Keerthana U, Guru Pirasanna Pandi G, Aravindan S, PC Rath (2020). Grain discoloration in popular rice varieties (*Oryza sativa* L) in eastern India, associated mycoflora, quality losses and management using selected bio-control agents. *Journal of Stored Products Research* 88(2020) 101682, <https://doi.org/10.1016/j.jspr.2020.101682>. (NAAS- 7.95)
- 22) Totan Adak, Harekrushna Swain, Susmita Munda, AK Mukherjee, MK Yadav, Aravindan S, MK Bag and PC Rath (2020). Green silver nano-particles : synthesis using rice leaf extract, characterization, efficacy and non-target effects. – *Environmental Science and Pollution Research*, <https://doi.org/10.1007/s11356-020-10601-w>. (NAAS -9.06)
- 23) Niyati Pandey, Dhanendra Rana, Gajendra Chandrakar, G. Basana Gowda, Naveenkumar B. Patil, Guru P. Pandi G, M. Annamalai, Somnath S. Pokhare, P.C. Rath, Totan Adak (2020). Role of climate change variables (standing water and rainfall) on dissipation of chlorantraniliprole from a simulated rice ecosystem. *Ecotoxicology and Environmental Safety*, 205 (2020) 111324. (NAAS -12.29)
- 24) Prabhukarthikeyan S.R. Keerthana U, Krishna G, Manoj Yadav, Parameswaran, Paneerselvam, PC Rath (2020). First report of *Fusarium proliferatum* causing Sheath Rot Disease of Rice in Eastern India (PDIS-06-20-1214-PDN) *The Plant Disease*.
- 25) Manas Kumar Bag, Anuprita Ray, Prahlad Masurkar, B.N. Devanna , C. Parameswaran, Mathew Baite, Prakash Chandra Rath, Amaresh Nayak (2021). Genetic diversity and population structure analysis of isolates of the rice false smut pathogen *Ustilaginoidea virens* in India. *PLANT PATHOLOGY*. doi:10.1111/ppa.13352 (NAAS -8.49)
- 26) J. Meher, S.K. Dash, L.K. Bose, Sutapa Sarkar, P.C. Rath and H.N. Subudhi. Genetic variability and character association among the quality traits in rice. *International Journal of Chemical Studies*, 9(1): 3503-3505, DOI: <https://doi.org/10.22271/chemi.2021.v9.i1aw.11777>
- 27) Aashish Kumar Anant, Guru Pirasanna Pandi G, Gajendra Chandrakar, Basana Gowda G, Naveenkumar Patil, Annamalai M, Totan Adak, Prakash Chandra Rath and Mayabini Jena (2021). Evaluation of Brown Plant Hopper *Nilaparvata lugens* (stal.) Resistance. *Indian Journal of Entomology* 83(2021) 223-225, DoI No.: 10.5958/0974-8172.2021.00065.1 (NAAS-5.08)
- 28) Aashish Kumar Anant, GP Pandi G, M Jena, Aasish Kumar Ananth, G Chandrakar, Parameswaran C, Raghu S, Basanagowda G, Annamalai M, NKB Patil, T Adak, PC Rath (2021). Genetic dissection and identification of candidate genes for brown planthopper, *Nilaparvata lugens* (Delphacidae: Hemiptera) resistance in farmers' varieties of rice in Odisha. *Crop Protection*, Vol. 144, June 2021, <https://doi.org/10.1016/j.cropro.2021.105600>. (NAAS-8.57)
- 29) G. Basana Gowda, Madhusmita Sahu, FarmanUllah, Guru Pirasanna Pandi G, Totan Adak, Somnath Pokhare, Annamalai Mahendiran, Prakash Chandra Rath (2021). Insecticide-induced hormesis in a factitious host, *Corcyra cephalonica*, stimulates the development of its gregarious ecto-parasitoid, *Habrobracon hebetor*, *Biological Control*. Volume 160, <https://doi.org/10.1016/j.biocontrol.2021.104680>. (IF -3.687)

- 30) Manas Kumar Bag, Nabaneeta Basak, Torit Bagchi, Prahlad Masurkar, Anuprita Ray, Totan Adak, Mayabini Jena, Prakash Chandra Rath (2021). Consequences of *Ustilaginoidea virens* infection, causal agent of false smut disease of rice, on production and grain quality of rice. *Journal of Cereal Science*–100 (2021) 103220. <https://doi.org/10.1016/j.jcs.2021.103220> (NAAS 8.94)
- 31) Basana Gowda G, Aishwarya Ray, Totan Adak, Madhusmita Sahu, Nandini Sahu, Guru Pirasanna Pandi, Naveenkumar B. Patil, Annamalai M and Prakash Chandra Rath (2021). Non-target effect of pesticides in rice environment, *Oryza* Vol. 58 (Special Issue) 2021 (194-207), DOI : <https://doi.org/10.35709/ory.2021.58.spl.8> (NAAS 5.03)
- 32) Arabinda Mahanty, Srikanta Lenka and Prakash C. Rath. Winning Back the Consumer's Confidence and Ensuring Consumer Safe-ty in the COVID-19 Regime is Necessary for Revival of the Processed Food Industry. *Current Nutrition & Food science*. Volume 17, Issue 6, 2021, 572 - 574. DOI : 10.2174/1573401316999201029210351
- 33) Arabinda Mahanty, Srikant Lenka, PC Rath, S Raghu, Prabhukarthikeyan SR (2021). In silico docking studies of natural compounds from plants with antagonizing effect on *Rhizoctonia solani* against its pectate lyase enzyme. *Journal of Proteins and Proteomics*. DOI: 10.1007/s42485-020-00053-8
- 34) G. Basana Gowda, N.B. Patil, M. Sahu, S.R. Prabhukarthikeyan, S. Raghu, G.P. Pandi, T. Adak, C.K. Swain, S. Pokhare, S.D. Mohapatra and P.C. Rath (2021). Differential Gut Bacteria in Phosphine Resistant and Susceptible Population of *Tribolium castaneum* (Herbst) and their Biochemical and Molecular Characterization" is now available online in the *Pakistan Journal of Zoology*, pp 1-8, <https://dx.doi.org/10.17582/journal.pjz/20201204111217> (IF: 0.88).
- 35) S. Raghu, G. Guru-Pirasanna-Pandi, M.S. Baite, M.K. Yadav, S.R. Prabhukarthikeyan, U. Keerthana and P.C. Rath (2021). Estimation of yield loss and relationship of weather parameters on incidence of bakanae disease in rice varieties under shallow low land ecologies of Eastern India, *Journal of Environmental Biology*, 42, 995-1001 (2021), DOI : <http://doi.org/10.22438/jeb/42/4/MRN-1588>. (NAAS : 6.78)
- 36) Basana Gowda G, Guru Pirasanna Pandi G, Farman Ullah, Naveenkumar B Patil, Madhusmita Sahu, Totan Adak, Somnath Pokhare, Manoj Kumar Yadav, Annamali Mahendiran, Priyanka Mittapelly, Nicolas Desneux, Prakash Chandra Rath (2021). Performance of *Trichogramma japonicum* under field conditions as function of the factitious host species used for mass rearing. *PLOS ONE* | <https://doi.org/10.1371/journal.pone.0256246> (IF 3.240)
- 37) Govindharaj Guru-Pirasanna-Pandi, Sujithra M, Totan Adak, Basana Gowda, Mahendiran Annamalai, Naveenkumar Patil, Aashish Kumar Anant, P C Rath and Mayabini Jena (2021). Distribution pattern and sequential sampling plan for rice caseworm *Nymphula depunctalis* (Guenee). *Indian Journal of Entomology* Vol. 83 (3) 326-331, DoI No.: 10.5958/0974-8172.2020.00211.4 (NAAS – 5.08)
- 38) Guru Pirasanna Pandi Govindharaj, Basana Gowda, R. Sendhil, Totan Adak, S. Raghu, Naveenkumar Patil, Annamalai Mahendiran, Prakash Chandra Rath, G.A.K. Kumar and Christos A. Damalas (2021). Determinants of rice farmers' intention to use pesticides in eastern India. Application of an extended version of the planned behavior theory. *Sustainable Production and Consumption* 26 (2021) 814-823, doi : <https://doi.org/10.1016/j.spc.2020.12.036> (IF : 5.032)
- 39) Ansuman Khandual, Mihir Kumar Mishra, Harekrushana Swain, Swagatika Mohanty, Prakash Chandra Rath and Arup K Mukherjee (2020). Management of bacterial leaf

- blight of rice using plant extracts. *International Journal of Chemical Studies*8(3), PP 2951-2953 (NAAS - 5.31)
- 40) Ansuman Khandual, Mihir Kumar Mishra, Harekrushna Swain, Swagatika Mohanty, Prakash Chandra Rath and Arup Kumar Mukherjee (2020). Bioefficacy of chemicals against Bacterial Leaf Blight Diseases of Rice. *International Journal of Current microbiology and Applied Sciences* 9(6), PP3570-3575 (NAAS - 5.38)
  - 41) PC Rath, LK Bose, NN Jambhulkar, HN Subudhi and MK Kar (2021). Broadening Genetic Base of Rice and Identification of Pre-Breeding Lines for Resistance to Brown Plant Hopper, *Nilaparvata lugens*(Stål.). *Journal of Experimental Agriculture International* 43(8): 76-80 (NAAS – 4.89)
  - 42) Masurkar, P., Bag, M. K., Ray, A., Singh, R. K., Baite, M. S., & Rath, P. C. (2021). Genetic diversity and population structure analysis of rice false smut pathogen in North India using molecular markers. *Journal of Phytopathology*, 00, 1–17. <https://doi.org/10.1111/jph.13061> (NAAS - 7.18)
  - 43) Govindharaj Guru-Pirasanna-Pandi, Jaipal Singh Choudhary, Abel Chemura, Basana-Gowda, G, Mahendran Annamalai, Naveenkumar Patil, Totan Adak and Prakash Chandra Rath (2021). Predicting the brown planthopper, *Nilaparvata lugens* (Stål) (Hemiptera: Delphacidae) potential distribution under climatic change scenarios in India. *Current Science*, Vol. 121, NO. 12, 1600-1609 (NAAS – 7.10)
  - 44) Naveenkumar B. Patil, Basana Gowda G, Totan Adak, Guru Pirasanna Pandi, G, Annamalai M, Rath P.C., Mayabini Jena (2021). Repellency of three plant essential oils against major coleopteran stored grain pests of rice. *Indian Journal of Entomology*. DoI.: 10.5958/IJE.2021.13 (NAAS – 5.08)
  - 45) Ritesh Mishra, Hara Prasad Mishra, Sophia Subhadarsini Pradhan, Govindharaj Guru Pirasanna Pandi, Gadratagi Basana Gowda, Naveenkumar B. Patil, Mahendiran Annamalai, Prakash Chandra Rath, Totan Adak (2021). Residue dynamics and bio-efcacy of trifumezopyrim against *Nilaparvata lugens* and non-targeted efect on natural enemies in a rice ecosystem. *Environmental Science and Pollution Research* <https://doi.org/10.1007/s11356-022-18551-1> (NAAS - 10.223)
  - 46) N Rajesh, M Bibhap, S Sabarinathan, K Sankari Meena, Somnath Pokhare, Totan Adak, D K Nayak and P C Rath (2022). Evaluation of fluopyram against *Meloidogyne graminicola* in rice. *Indian Journal of Plant Protection* Vol. 49 No. 4, 2021 (257-265)
  - 47) Soumya Bharati Babu, Guru-Pirasanna-Pandi Govindharaj, Aashish Kumar Anant, Jayaraj Padhi, Ruchi Bansal, Sanghamitra Priyadarsini, Bhaskar Chandra Patra, Naveenkumar Patil, Prakash Chandra Rath (2022). Genomic analysis and finding of candidate genes for *Nilaparvata lugens* (stål) resistance in Indian pigmented and other indigenous rice genotypes. *Crop Protection*, <https://doi.org/10.1016/j.cropro.2022.105959> (NAAS - 8.57)
  - 48) J. Meher, S.K. Dash, Sutapa Sarkar, T. Bagchi, P. Swain, Parameswaran C., P.C. Rath and H.N. Subudhi (2022). Evaluation of Rice Varieties of different Ecologies for Grain Quality Characters. *Biological Forum – An International Journal*, 14(1): 1038-1042(2022) (NAAS – 5.11)
  - 49) Seenichamy Rathinam Prabhukarthikeyan, Chidambaranathan Parameswaran, Shraddha Bhaskar Sawant, Ramasamy Naveenkumar , Arabinda Mahanty , Umapathy Keerthana, Manoj Kumar Yadav, Annamalai Anandan , Periyasamy Panneerselvam, Manas Kumar Bag and Prakash Chandra Rath (2022) Comparative

Proteomic Analysis of *Rhizoctonia solani* Isolates Identifies the Differentially Expressed Proteins with Roles in Virulence . *Journal of Fungi*. 8, 370. <https://doi.org/10.3390/jof8040370>. (NAAS – 11.82)

- 50) Mahendiran Annamalai, Govindharaj Guru-Pirasanna-Pandi, Muthiah Chellapandiyan, Totan Adak, G Basana-Gowda, Naveenkumar Patil, PC Rath, Sengottayan Senthil-Nathan (2022). Silica Amendment Enhances Resistance of Rice to Yellow Stem Borer *Scirpophaga Incertulas* (Walker) with no Detrimental Effect on Non-target Organism *Eisenia fetida* (Savigny). *Silicon* <https://doi.org/10.1007/s12633-022-01897-z> (NAAS - 8.67)
- 51) Prakash Chandra Rath, Lotan Kumar Bose, Nitiprasad Namdeorao Jambhulkar, Meera Kumari Kar and Hata Nath Subudhi (2022). Identification of Alien Introgression Lines Resistant to White Backed Planthopper, *Sogatella furcifera* (Horvath) in Rice. *Journal of Experimental Agriculture International*, 44(7): 38-41, 2022; Article no. JEAI.86200, DOI: 10.9734/JEAI/2022/v44i730835 (NAAS – 4.89)

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12	17	539

#### **Awards and Recognitions:**

1. O.U.A.T., Bhubaneswar merit scholarship during B. Sc (Ag.) in 1985-86.
2. S. J. Jindal Trust scholarship for meritorious student during M.Sc(Ag.) Entomology. 1989-91
3. B. H. U. Merit scholarship during Ph. D. Entomology in 1991-93.
4. Elected as Fellow of the society for the protection of Environment and Sustainable Development for the year 2000 and awarded on 4.1.2003
5. Best poster award on topic "Insect pest of shallow rain fed lowland rice in eastern India and their management" in national symposium on "Frontier Areas of Entomological Research" held at IARI New Delhi, 5-7 November, 2003.
6. Felicitated as outstanding alumnus on the occasion of Silver jubilee of College of Agriculture, Chiplima, (OUAT) by Associate dean of the college on 27.10.2006
7. Awarded training certificate for participation in the training on IPM in Egypt held during 10<sup>th</sup> July to 25<sup>th</sup> September 2007 at Egyptian International Centre for Agriculture, Dokki, Cairo, Egypt.
8. Conferred as AZRA Fellowship Award for the year 2007 for the out standings research contributions in the field of applied zoological researches.
9. Awarded Fellow of Plant Protection Association of India (FPPAI) on 30<sup>th</sup> Nov.2012 in International Conference on Plant Health Management for Food Security, 28-30, November, 2012 at DRR Hyderabad.
10. Best oral presentation on "Impact of climate change on insect pest of rice in India- P. C. Rath, M. Jena & K. S. Behera" in 8<sup>th</sup> National Seminar on "Climate change impact and sustainable management strategies" 14-16 March, 2015 held at Ravenshaw University, Cuttack-3, Odisha, India
11. Best oral presentation on "Efficacy of pesticides against pests of rice under changing climate"- P. C. Rath, S. Lenka, A.K. Mukherjee, L.K. Bose, T. Adak, U. Kumar and M. Jena" in 9<sup>th</sup> National Seminar on "Water resources management in the context of

climate change for growing India"27<sup>th</sup> February to 1<sup>st</sup> march, 2017 held at OUAT, Bhubaneswar, Odisha, India

12. Prestigious IRDP Award 2018 - Best Scientist for the outstanding excellence and remarkable achievements in the field of Teaching, Research and Publications by IRDP Group of Journals, 2/5, Krishna Industrial Estate, Mettukupam, Vanagaram, Chennai, India-600095 selected on 31.3.2018 and presented on 30.5.2018 (IRDP: Innovative Research Developers and Publishers)
13. Awarded silver jubilee reunion memento of the 45th FCARPM at NAARM during 2-3, June 2018 by Director, NAARM.
14. Take over the position of Head, Division of Crop Protection, NRRI, Cuttack w.e.f. 01.07.2018.
15. Bharat Jyoti Award 2018 – for outstanding service, achievement and contributions in the field of research by India International Friendship Society (IIFS), Ranjit Studio 7, Tansen Marg, 1st Floor, Bengali Market, New Delhi – 110 001 on 04.12.2018.
16. Fellow of Indian Climate Congress 2018 – for outstanding contribution in agricultural research and climate change by India Climate Congress (ICC), Satyasai Charitable & Educational Trust, Mahanadi Vihar, Cuttack- 753004 on 29.12.2018.
17. Best Oral Presentation on “Understanding the effects of abiotic factors on Chlorantroniliprole degradation”- Niyati Pandey, Madhusmita Sahu, PC Rath and Totan Adak in National Workshop on “Pesticide Residue : Management and Techniques for Food Safety and Security”, Navsari Agricultural University, Navsari.
18. Swachha Quarter Award- Best Division, Crop Protection Division 2019-20 received on 29th April 2019
19. Best Citizen of India Award 2019 by International Publishing House, The World’s most leading biographical specialist, New Delhi in the month of July 2019.
20. J-Gate@Cera Best Usage in the Region 2019, Eastern Region Award Certificate presented to ICAR-National Rice Research Institute, August 09, 2019 jointly organised by ICAR-Consortium for E-Resources in Agriculture (CeRA), ICAR-DKMA, New Delhi, Indian Council of Agricultural Research, New Delhi and INFORMATICS conducted J-Gate CeRA Regional training programme – 2019 at OUAT, Bhubaneswar.
21. Best Poster Award on the topic “Candidate screening for brown planthopper, Nilaparvata lugens resistance donors from farmers varieties of Odisha for rice breeding” - Aashish Kumar Anant, \*Govindharaj Guru-Pirasanna-Pandi, Gajendra Chandrakar, Parameshwaran C, Raghu S, Annamalai M, Basana Gowda, Naveenkumar Patil, Totan Adak, Majabini Jena and Prakash Chandra Rath under the session “Theme 3 : Biotic stress management in rice” in virtual mode of the 1st Indian Rice Congress held at ICAR-NRRI, Cuttack during 8-9, December 2020.
22. Best Poster Award (3rd position) – on the topic “New Records Of Parasitoids Of Rice Leaf Folder, Cnaphalocrosis Medinalis from Cuttack” - Prasanthi Golive, Debjani Dey and PC Rath under the session “Theme 3 : Biotic stress management in rice” in virtual mode of the 1st Indian Rice Congress held at ICAR-NRRI, Cuttack during 8-9, December 2020.
23. Second Best Oral Presentation Award on the topic “Synergistic effects of plant defence elicitors and trichoderma harzianum on enhanced induction of antioxidant defence system in rice against sheath blight disease caused by Rhizoctonia solani Kuhn.” - Raghu S, Baite M S, Yadav M K, Prabhukarthikeyan S R, Gurupirasanna P G,

Annamalai M, Keerthana U, Aravindan S, Lenka S and Rath PC under the session "Theme 5 : Advances in molecular biology of biotic stress resistance in the International E-Conference" on 'Advances and Future Outlook in Biotechnology and Crop Improvement for Sustainable Productivity' organized by the Department of Biotechnology and Crop Improvement, College of Horticulture, Bengaluru during 24-27th November, 2020.

24. Best Oral Presentation Award on "Deciphering the molecular basis of interaction between the plant growth promoting Bacilli Rhizobacteria and *Oryza sativa*" presented by S.R. Prabhukarthikeyan, U. Keerthana, Mathew S. Baite, S. Raghu and P.C. Rath in International web Conference (GRISAAS -2020) held during 28-30th December, 2020.
25. Best Oral Presentation Award on "Paradigm shift of rice diseases in eastern India: Losses and management strategies" presented by Raghu S, Baite MS, Yadav MK, Prabhukarthikeyan SR, Keerthana U, Aravindan S, Lenka S, Mukherjee AK, Bag MK, Mohapatra SD and Rath PC in National symposium on "Robust Plant Protection Strategies for sustainable agriculture" organized by Indian Phytopathological Society East Zone (IPSEZ), Cuttack held during 19-20 January 2021.
26. Second Best Oral Presentation Award on "Evaluating the field efficacy of new combination fungicides against sheath blight of rice caused by *Rhizoctonia solani* Kuhn" presented by S Lenka, PC Rath, Raghu S, A Mahanty, AK Mukherjee, MK Bag, T Adak and Prabhukarthikeyan SR in National symposium on "Robust Plant Protection Strategies for sustainable agriculture" organized by Indian Phytopathological Society East Zone (IPSEZ), Cuttack held during 19-20 January 2021.
27. Dr. PC Rath was the Guest of Honour on 19.01.2021 in the inaugural session of the IPS Virtual Symposium, 2020-21 organized by Indian Phytopathological Society East Zone.
28. Best Oral Presentation (1st position) Award on "Application of loop-mediated isothermal amplification .....detection of *Ustilagoidea virens*" presented by Amrita Banerjee, M.K. Bag, S. D. Mahapatra, P. C. Rath" in National symposium on "Robust Plant Protection Strategies for sustainable agriculture" organized by Indian Phytopathological Society East Zone (IPSEZ), Cuttack held during 19-20 January 2021.
29. Best Poster Award on "Comparative evaluation of loop-mediated isothermal amplification (LAMP) assay and nested PCR assay for the rapid detection of Indian isolates of *Ustilagoidea virens*" presented by Amrita Banerjee, M. K. Bag, S. D. Mahapatra, P. C. Rath and D. Maiti, in ISMPP 41 Annual conference and National e-Symposium during 28-30 January, 2021, organized by University of Horticultural Sciences, Bagalkot,
30. Best Oral Presentation (2nd Position) Award on "Impact of weather parameters on lepidopteran pest parasitoids of rice in Cuttack" presented by Golive Prasanthi, Debjani Dey and Rath PC on National Conference on "Priorities in Crop Protection For Sustainable Agriculture" held during March 16-18, 2021 organized by Directorate of Extension Education, CAU, Imphal & ICAR-NBAII, Bengaluru.
31. Best Oral Presentation Award on "Multifaceted benefits of *Bacillus velezensis* in the management of sheath blight disease in rice caused by *Rhizoctonia solani*" presented by SR Prabhukarthikeyan, S Raghu, S Aravindan, Mathew S Baite and PC Rath on Sixth National Conference on Biological control : Innovative approaches for green India held at Bengaluru, 3-5 March, 2021.

32. Best Poster Award (1st position) on “Droplet distribution and phytotoxicity of commonly used pesticides in rice using Unmanned Aerial Vehicle (UAV)” presented by Basana Gowda G, Totan Adak, Naveenkumar B Patil, Raghu S, Guru Pirasanna Pandi G, Annamalai M, Prakash Chandra Rath on ARRW Diamond Jubilee National Symposium held at NRRI, Cuttack, 16-17 December 2021.
33. Best Poster Award (2nd position) on “Development of a multi-residue method for pesticide quantification from rice grain” presented by Totan Adak, Arnab Malik, Rakesh R. Nayak, Govindharaj Guru-Pirasanna-Pandi, Gadratagi. BasanaGowda, Naveenkumar B. Patil, Raghu S, Prabhukarthikeyan SR, Sushmita Munda and Prakash Chandra Rath on ARRW Diamond Jubilee National Symposium held at NRRI, Cuttack, 16-17 December 2021.
34. Best Poster Award (3rd position) on “Genetic dissection of brown planthopper, Nilaparvata lugens (Stål) resistance from Indian landraces” presented by Soumya Bharati Babu, Guru-Pirasanna-Pandi G, Jayaraj Padhi, Aashish Kumar Anant, Parameshwaran C, Chanchala Meher & PC Rath on ARRW Diamond Jubilee National Symposium held at NRRI, Cuttack, 16-17 December 2021.
35. Best Oral Presentation Award on “Evaluating the efficacy of bio-synthesized silver nano-particle against Rhizoctonia solani Kuhn, the causal agent of sheath blight disease of rice” presented by Srikant Lenka, A Mahanty, L Behera, Raghu S and PC Rath on 8th International Conference (Hybrid Mode) “Plant Pathology: Retrospect and Prospects” organized by Indian Phytopathological Society held during March 23-26, 2022 at SKNAU, Jabner-Jaipur, Rajasthan.
36. Dr. PC Rath felicitated for contribution in organizing the Platinum Jubilee Foundation Day held on 23rd April 2021.
37. Swachha quarter Award, Best Division, Crop Protection Division 2021-22 received on 23rd April 2022.

Date : 12/05/2022

Place : ICAR-NRRI, Cuttack

**(Prakash Chandra Rath)**